RHODODENDRONS

with Camellias and Magnolias

1995

The Royal Horticultural Society

Acknowledgements

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Foreword

Bruce Archibold

Gertrude Jekyll is, of course, a household name to all the gardening fraternity and it is interesting to learn what use she made of rhododendrons and azaleas in her garden designs. Richard Bisgrove gives us an insight into how cleverly she did this through the use of colour with what was then a very limited range of varieties. We could all, perhaps, pay more attention to her maxims when planning new plantings.

In these days when the mass-production of rhododendrons seems to be the only way that nurseries specialising in the genus can, with exceptions, remain competitive, the article on In-vitro Propagation is timely, but perhaps a word of caution should be sounded: in isolated circumstances this method can produce an atypical form of the propagated plant.

For those of us who follow, of necessity at a distance, the lucky few who are able to travel to faroff places to see plants in their wild setting, the exploits of Ted Millais, Björn Aldén, George Argent and D. Madulid make compulsive reading. But one does wonder whether *Rhododendron proteoides*, desirable as it may be to species buffs, would ever get an AGM!

Camellia lovers will like to read of the tour of Western China to see the species in the wild and also to be informed of the proceedings of the Symposium on the yellow camellia. How long will it be before we see *Camellia nitidissima* (as *C.chrysantha* is now called) and its offspring at Vincent Square?

Alan Leslie's report will help to resolve some of the confusion that exists on the exact significance of the various Awards. I hope his remarks in the last paragraph concerning new exhibitors at the Shows, backed up by Anne Boscawen's comments, will bear fruit and that more competitors will give us the chance to admire their treasures. We should all gain if the writers of the Rhododendron Notes and others like them were to show living material on the Vincent Square benches. We have seen this year how just one small truss can not only win a first prize but bring an unusual plant before a wider public.

It gives me much pleasure to announce that the Group has exchanged Honorary Corporate Membership with the American Rhododendron Society and the Rhododendron Species Foundation. We warmly welcome them and hope that in future arrangements can be made with other organisations with similar interests to our own and thus help to promote and encourage closer co-operation worldwide.

Finally, heartiest congratulations to our Honorary Editor on the production of yet another excellent Year Book.

Gertrude Jekyll's use of rhododendrons and azaleas

Richard Bisgrove

Reginald Farrer began his acerbic book on the rock garden by describing caustically the horrors of the three prevalent styles of arranging rocks: the devil's lapful, the dog's grave and the almond pudding. The rhododendron readily conjures up similar tales of the gardener's abuse, injuring its rightful place in the garden. 'Rhodophobia' is most frequently caused by three potent stereotypes:

The green pimple: a tightly packed bunch of newly planted rhododendrons in a small island bed on a large lawn,

The green custard: vast smothering masses of coarse, dull green foliage casting a funereal gloom over old gardens, and

The fruit salad: an optically painful assortment of rhododendrons and azaleas in a psychedelic blend of purples, shocking pinks and flame orange.

Gertrude Jekyll was well aware of these three stereotypes and in her prolific output of garden writing and garden plans she showed how they might be avoided, using this versatile genus to create beautiful garden pictures. An artist by training and artist/gardener by inclination, Miss Jekyll is often thought of as a maker of herbaceous gardens in delicate pinks and pale lavenders with grey foliage. In reality she was a robust and energetic character with an astonishingly catholic taste for plants and one important aspect of that catholicism was a firm admiration for the rhododendron. Examples of its sensitive use abound in her books and in the many gardens she planned.

Her writing shows many parallels with her gardening. In her careful choice and assembly of words she managed to encapsulate plant characters in such a way that her choice and arrangement of them in the garden took on an unassailable logic. *Gypsophila paniculata*, for example, she likened to 'clouds of flowery mist settled down on the flower border'[1] benefiting from the contrast of tall gladioli 'shooting up behind and among it'. Of the dahlia, a plant often dismissed as too bold and bright for modern taste, she considered its 'first duty in life is to flaunt and to swagger'.[2] She disliked those large dahlias bred only for the show bench and too heavy to hold their heads high in

the garden. The hardy hybrid rhododendrons of her day she described as 'great bouncing beauties', confessing, though, that 'much as I admire the great bouncing beauties that are most justly the pride of their raisers' she had a special liking for one of the earliest hybrids 'multum maculatum', 'now despised by florists' but 'quite the most beautiful Rhododendron as a cut flower' with thin-textured petals and loosely filled trusses of delicate milk-white flowers above long narrow leaves of the darkest green.[3]

Miss Jekyll began her own garden at Munstead Wood, just across the lane from the family home, in 1881 (when she was 38), and in her first book *Wood and Garden*, published in 1899, she described at some length how rhododendrons were used in her garden. The choice and arrangement of plants received as much painstaking care as did their later cultivation. In the year before planting 'the best nurseries were visited and careful observations made of colouring, habit and time of blooming'.[4] Seventy bushes were required but the long list of possibles was whittled down to about a dozen names, allowing ten each of the most handsome kinds, others in groups of five or three and the occasional single. Of the six different colour groups which Miss Jekyll identified among the hardy hybrids, she chose three for her own garden: crimson inclining to scarlet or blood-colour, lighter scarlet and rose inclining to salmon, and cool clear purples and lilac-whites of the typical *ponticum* class. She avoided the stronger rose, amaranth or crimson colours with any hint of magenta. The reds and salmons were arranged in a woodland clearing, the two groups separated from each other by the clear pink 'Bianchi', while the purples were reserved for a more shaded situation where, she calculated, their cool colours would be intensified by the shade.

Despite the most careful selection, there were still problems. Plants judged in the jumbled colour assortment of the nurseryman's row looked quite different in the garden: after two visits specifically to look for clear pinks, the chosen plants had to be discarded because their colours revealed an unacceptable rank streak when grown next to her favourite pink 'Bianchi'.

With planning complete, the ground was deeply trenched and the rhododendrons planted in wide holes filled with peaty turf skimmed from the surface of her sandy soil and mulched with manure. The manure was replenished annually for two years – or more for slower-growing cultivars – with copious watering in the summer until the plants were well established[5].

For Miss Jekyll, the most durable asset of the rhododendron was its rounded masses of handsome, polished green leaves but solidity is an attribute easily over-done. She therefore advocated wide spacing for rhododendrons, 2.4-3m (8-10ft) or more between plants,

interplanting with lower and lighter fillers – heathers perhaps for the earliest stages when the spaces were wide and open, but *Leucothoë fontanesiana*, lady ferns, the dwarf *Rhododendron myrtifolium* and aromatic *Cistus laurifolius* for the longer term, with *Lilium auratum* for its fragrant white flowers emerging through the rich green tapestry.[6]

Azaleas, she thought, were less difficult to place – all their colours harmonised – but for her own garden, 'where care is taken to group plants well for colour',[7] they were arranged in a sequence. White cultivars occupied the lower and shadier regions of the garden, passing through cream and pale pink to orange, flame and scarlet in the sunnier centre of the azalea ground, then merging into the trees again with strong yellows and irregular groups of the common paler yellow Pontic azalea, *Rhododendron luteum*. The whole sequence filled about 0.2ha (½ acre). As with the evergreens, so the deciduous azaleas were widely spaced and interspersed with other plants – vacciniums, ferns and a carpet of fine leaved fescues.

Although the hardy hybrid rhododendrons and deciduous azaleas played the most obvious parts in the garden at Munstead Wood, other rhododendrons played a significant, if lesser rôle. The low, hummocky *Rhododendron ferrugineum* and especially the aromatic *R. myrtifolium* were admired as much for their low, rounded masses of handsome foliage as for their flowers, and were used with gaultherias, leucothoës and similar low shrubs in the rock garden and wherever a quietly refined note of solidity was called for.

Gertrude Jekyll's garden at Munstead Wood served as her outdoor laboratory/studio for the thorough investigation of plants and their uses. The fruits of this long experimentation can be seen in over 2,000 plans detailing more than 250 gardens which she designed for others, and her first hand experience with rhododendrons is evident in many of those plans.[8]

At Folly Farm,[9] near Reading, the border of rhododendrons along the roadside was leavened with large groups of yellow tree lupins and pale lavender Michaelmas daisies, extending the flowering season, injecting a lighter, more vertical and more transient note to the rhododendrons and providing a more furnished appearance to the border in its early years.

For the front garden of Bowerbank,[10] a suburban villa in Wimbledon, Miss Jekyll used *Rhododendron ponticum* along the roadside with 'Album Elegans', 'Album Grandiflorum' and the pale semi-double flowered 'Everestianum' within, grouping them with holly, birch and *Mahonia aquifolium* in a miniature version of Munstead's woodland fringe.[11] The various qualities of evergreens were woven among the vertical white shafts and slender, swaying branches of the birch. In contrast to the quiet dignity of this north-facing and public

front garden, the secluded south garden had a series of terraces overflowing with cistus, rosemary, lavender, China roses and fragrant pinks.

At Highcroft,[12] Burley in Hampshire, a small wild garden was created in a once-abandoned corner of the garden. Amelanchiers, mountain ash, birch and other small trees were scattered in islands of long grass separated by meandering close-mown paths. Here azaleas occupied one corner of the garden, small groups of carefully graded colours filling the tips of islands and lining the outer path to give a firm enclosure where most needed on the tighter curves of the paths.

Walsham House at Elstead,[13] only a few miles from Munstead Wood, was clearly modelled on that successful example. Pale pink and white azaleas near the formal gardens gave way to larger groups of pale yellow, deeper yellow and orange before fading to the paler yellow of that reliable stalwart, the Pontic azalea (*Rhododendron luteum*) set among casual drifts of coloured stemmed dogwoods, wild cherries, liquidambar and scarlet oaks to create a simple but satisfying picture throughout the year.

At Drayton Wood, Norfolk,[14] the garden was on a much larger scale. The informal part of the garden began with a small, round pool enclosed within low rocky mounds and, in turn, with long banks of azaleas. Paths sweeping through the azaleas in long, graceful curves then emerged into an extensive wild garden with long groups of oak, birch, holly, blackthorn and Scots pine forming the natural dividers between one woodland path and the next. Small groups of well-spaced rhododendrons lined the paths, familiar cultivars such as the crimson 'Alexander Adie', salmon-rose 'Lady Eleanor Cathcart', the lilac-white 'Album Grandiflorum' and 'Album Elegans', 'Sappho' ('an immense flower, with a conspicuous purple blotch'), and 'a grand old kind called Minnie, a very large-growing one, with fine white trusses' – all plants used in that first experimental planting at Munstead Wood.[15] It is not difficult to see, from the many atmospheric photographs with which Miss Jekyll illustrated *Wood and Garden* (for she added photography to her many other interests early in her life), the character which she had in mind for Drayton Wood.

Frant Court in Kent[16] represents the synthesis of many of Miss Jekyll's ideas. The scene was set with a long, gently curving flight of steps down through a shallow dell between existing clumps of rhododendrons and hollies. Further groups of rhododendrons – long drifts of 'Cunningham's White', smaller groups of 'Album Elegans', 'Mrs John Clutton' and 'Bianchi' – accentuated the height of the landform while big groups of *Rhododendron myrtifolium* and *R. ferrugineum* bordered the steps together with skimmias, pernettyas and *Daphne pontica*. Springing up between these handsome rounded

masses of rhododendrons and other evergreens were towering spires of white foxgloves and arching Solomon's seal while the front rank of planting, between the low rhododendrons and the steps, was of hellebores and *Iris foetidissima* (with dark foliage of contrasting form) and lighter male ferns, columbines and smilacina. Finally, mats of glossy *Asarum europeum*, moss-like saxifrage and low heathers flowed over the edge of the steps, uniting the two banks of planting into a single and delightful composition.

In all her gardening activities Miss Jekyll was an enthusiastic cultivator and connoisseur but not a collector of plants. She eschewed novelty, especially when the breeder's aim was divorced from garden-worthiness but she was not afraid to try and to use new plants. Many people, of course, are more interested in plants than in gardens and the range of rhododendrons now available to tempt the collector is enormously wider than it was in Miss Jekyll's lifetime but perhaps the most important of all the contributions that Miss Jekyll made to gardening was to destroy the widespread misconception that one can have either a good plant collection or a well-designed garden. Fortunately her many books and some of her garden plans are once again readily available to show how that difficult marriage can be managed.

Fortunately, too, the rhododendron is a remarkably obliging plant. The hardy hybrids are tolerant of very hard pruning, so moribund swathes of 'green custard' can be restored to youthful vigour and the charm of these bouncing beauties accentuated once more by interplanting with plants of lighter and more arching growth. They are tolerant, too, of transplanting, so even well-established 'green pimples' can be pulled asunder and replanted at wider spacing, interplanted with ferns, geraniums and other inexpensive ground-covering plants as an economical way of spreading their charms more widely and much more satisfactorily. Even the 'fruit salads' can be saved by amicable divorce to create two quite distinct pictures of beauty in different parts of the garden.

References:

[1] Jekyll, G., *Wood and Garden*, 1899, p.95. [2] *ibid*, p.113. [3] *ibid*, pp.35-6.
[4] *ibid*, p.64. [5] Jekyll, G., *Home and Garden*, 1900, p.189.
[6] *Wood and Garden*, p.36; a longer list of associated plants is given in: Jekyll, G., *Colour Schemes for the Flower Garden*, 1914, pp.93-4. [7] *Wood and Garden*, p.69.
[8] Surviving plans are housed in the Reef Point Collection of the University of California, Berkeley. A representative selection of them was published in Bisgrove, R., *Gardens of Gertrude Jekyll*, 1992.
[9] Reef Point Collection folder 52, item 9. [10] Bisgrove, *op.cit.*, pp.110-11.
[11] *Colour Schemes for the Flower Garden*, pp.3-4. [12] Bisgrove, *op.cit.* p.129.
[13] *ibid*, p.117. [14] *ibid*, pp.121-5.
[15] *Wood and Garden*, p.68.
[16] Bisgrove, *op.cit.*, pp.145-7.

In-vitro propagation: a tool for large-scale production

Wolfgang Spethmann and Ulrike Riechers

Rhododendron species and cultivars are grown in parks and gardens all over the temperate world and millions are sold commercially every year. The methods and procedures used to propagate these plants are therefore of considerable interest.

Until recently the two most common ways of vegetatively propagating rhododendrons and azaleas were either by soft wood cuttings or by grafting. However, a new era of rhododendron production dawned in the mid-1970s with the experimental work of Dr Wilbur Anderson of the Washington State University in the USA. His experiments played an essential part in the development of 'in-vitro' propagation of rhododendrons (Anderson, 1975).

It is wrong to label in-vitro propagation as an artificial method. The process (also called micropropagation or tissue culture) can be described as a stimulated natural sprouting of plants through axillary node branching or adventitious shoot induction in an aseptic and climatically controlled environment. The plantlets (or explants) are kept in airtight glass or plastic vessels in relatively high humidity. They are fed on liquid or agar-solidified autoclaved nutrient media on a base with the addition of a carbohydrate source (sucrose) aided by naturally occurring or synthetically produced growth regulators.

To start a tissue culture the mother plant must be established in vitro. For rhododendrons possible initial explants are shoot tips, dormant buds or meristems. For the purpose of mass producing clones actively growing shoot tips of 10 to 20mm length are common. After the desired explant has been severed from the mother plant, leaves and unnecessary material are removed before it is disinfected with sodium bleach or a similar chemical. It is essential that the tissue culture should be free from fungi, bacteria or insects whether phyto-pathogenic or not. Because of the favourable conditions (optimal temperature and carbohydrate source) inside the vessels, the plant material would otherwise be rapidly overwhelmed by contaminants. From this stage until the explants are transferred into soil, all operations are carried out in a lamina flow hood to ensure that the plantlets are sterile.

The next step is to trim the shoots or dissect the buds before the

explants are laid on, or inserted into, the prepared medium. The growth hormone cytokinin controls and induces cell division. For rhododendron culture cytokinin Zeatin is preferable to cytokinin 2iP as it is less toxic. Concentrations of less than 1ppm Zeatin or 2ppm 2iP are recommended. The addition of a cell-stretching hormone (auxin), e.g. indoleacetic-acid (IAA) or indolebutyric-acid (IBA) in concentrations between 0.2 and 1mg/1 is also common practice. Anderson (1984) records supplementing the basal medium with 30g/1 sucrose, thus including all elements needed by the plant organism. (This differs from the 'traditional' medium [Murashige and Skoog, 1962] by having a drastically reduced salt concentration.) The cultures are grown in white fluorescent light with a 16-hour photoperiod. The culture room temperature is about 25° C (77° F). After three to six weeks the explants that have survived show the first in-vitro shoot growth. They are then moved to the multiplication medium which differs only in the growth regulator contents. (Concentration of about 5-15ppm 2iP and an auxin/cytokinin-ratio of 1-4.) From now on the shoot cultures are divided into smaller clusters or single shoots and transferred to fresh media every four to six weeks. So, with an assumed (and realistic) threefold multiplication per subculture, approximately 200,000 plantlets from one initial shoot can be produced within a year.

Unlike conventional propagation by cuttings, these shoots have no root systems. The shoots take up all the nutrients, organic compounds like vitamins, and the water they need, directly from the media. Furthermore, as photosynthesis rates are low, the shoots also take up sucrose as carbohydrate.

After several mutliplication cycles the shoots have to be rooted to produce whole and intact plants. Rhododendrons can be rooted either in vitro in the laboratory, or ex vitro in the greenhouse. For both methods shoots of approximately 15 to 25mm are harvested from shoot clusters. For in-vitro rooting the cuttings are inserted into special rooting media which have reduced levels of mineral salt content and are free of cytokinins. Sometimes activated charcoal (0.1-0.2 per cent) is included. For rhododendrons, as for many other woody plants, the addition of auxin is essential, although if the concentration is too high rooting will actually be hindered. We have found 1 or 2mg/1 IBA gives the best rooting response. Pre-treatment with auxin is another good method. This is comparable to quick-dipping in conventional propagation of cuttings. The base of the shoot is dipped in an aquaeous solution with a relatively high dosage of auxin for a few seconds or minutes. The first roots appear within three weeks and after five or six weeks plants can be potted.

In-vitro roots have to be handled very carefully to avoid damaging single roots, or even the whole root system, while removing from

the agar. To avoid this, direct rooting may be the answer. In fact, ex-vitro rooting has distinct advantages. Some experiments have proved that vascular connections between in-vitro roots and shoots are incomplete and weak, particularly when heavy callusing takes place in advance (Thorpe and Biondi, 1984). Moreover, depending on the rooting method, the anatomy and morphology of roots may be different (McClelland *et al.*, 1988). In-vitro roots can have a more succulent character (Waldenmaier, 1991) and absence of root hairs has been observed.

Finally, the economic aspect must not be neglected: in-vitro rooting is more expensive and can account for 50 to 80 per cent of total cost because of additional stages in the culture, intensive use of labour and extensive use of space. Otherwise, the most important prerequisite for successful greenhouse rooting is adequate equipment for maintaining and controlling humidity. We have had satisfactory results with a high pressure fogging system. It prevents dessication of microcuttings and, unlike most intermittent mist systems, protects substrates from waterlogging (Riechers, 1993).

To sum up, one can say that before experiments are begun, experience with rooting of new species or varieties should be gained by in-vitro experiments because control of environment and culture can be guaranteed. If the appropriate technical equipment is available and in-vitro rooting is successful, in-vitro experiments can subsequently be carried out.

After in-vitro or during ex-vitro rooting, acclimatisation to normal greenhouse conditions takes place by gradually lowering humidity and increasing light intensity as is the practice with many softwood cuttings. However this stage does not seem to be as critical as is reported for many other tissue-cultured species. Even rapid decrease of relative humidity down to 50 per cent has not been detrimental. In fact, it was advantageous for growing-on 'Pink Pearl'. Temperatures should be moderate, because heavy forcing of shoot growth leads to an unfavourable ratio of shoot/root/stem diameter. The first newly expanding leaves have a 'transitional' character, indicating that the anatomy has an intermediate status between in-vitro and 'normal' in-vivo leaves. Epicuticular wax layer develops, palisade cell-layers thicken and intercellular spaces of the spongy mesophyll become smaller. Normally, foliage with regular physiological function and size appears after three to five weeks and acclimatised plants can be integrated carefully into the commercial nursery management.

Comparative growth of in-vitro plants

How do microprop plants compare with cuttings and grafts? The relative success of the different methods of propagation is still a

Table 1. Mean root ball height and diameter of rhododendrons propagated by grafting, cutting or micropropagation respectively three years after planting

	graftings		cuttings		in-vitro plants	
	H (cm)	D (cm)	H (cm)	D (cm)	H (cm)	D (cm)
'August Lamken'	15	64	19	66	18	63
'Gartendirektor Glocker'	14	52	15	52	16	57
'Gartendirektor Rieger'	20	68	18	66	18	67
'Scintillation'	15	55	16	52	16	50
'Nova Zembla'	17	64	19	47	15	39
'Gomer Waterer'	16	61			16	46
'Lee's Dark Purple'	17	58			17	51
'Catawbiense Grandiflorum'			13	51	12	50
'Catawbiense Boursault'			14	50	11	55
'Silberwolke'	14	56			13	49
'Sneezy'	15	62			12	43
'Brigitte'	15	58			15	57

matter of debate, cuttings and in-vitro plants being preferred in the USA and grafts in Germany. There are pros and cons for each technique. In Germany the rootstock of 'Cunningham's White' is thought to be more suitable for a wide variety of soil conditions where cuttings will not root easily and only a small number of hybrids are grown from cuttings. It is also said that microprop plants are difficult to acclimatise outdoors and that root formation is small except in soils with a high humus content. There are other objections too: a thin root collar; deferred flowering; fewer flower trusses; doubtful hardiness; quicker ageing and possible mutation. These, however, are mere observations which have never been scientifically tested.

In the spring of 1990 the Institute for Fruit and Nursery Science of the University of Hannover began a series of field trials to test the relative performance of microprop plants, cuttings and grafts. Twelve cultivars[1] were chosen for the trials, 6 large-leaved hybrids, 3 williamsianum hybrids, 2 yakushimanum hybrids and 1 insigne hybrid ('Nova Zembla', 'Gomer Waterer', 'Lee's Dark Purple', 'Catawbiense Grandiflora', 'Catawbiense Boursault', 'August Lamken', 'Gartendirektor Glocken', Gartendirektor Rieger', 'Silberwolke', 'Sneezy' and 'Brigitte'). With the exception of the cuttings, rooted in 1987, all plants were propagated in 1988. Three × 9 (27) plants per cv. (cuttings, grafts and microprops) were planted. The test is intended to last for 10-15 years. Silt loess soil of pH7, not suitable for rhododendrons, was improved with bark (70%), peat (10%), etc. and additional nitrogen. This was intended to simulate conditions likely to be found in gardens and public parks and was prefered to the acid,

peaty soils of our nurseries. Fertilizer (40kg nitrogen/ha) was applied in April, June and October of each year and assessment of height, diameter, habit, yearly shoot length, leaf colour, number of flower buds, phenology of flowering, frost damage and Black Vine Weevil damage began in the winter of 1990/91.

The results to date reveal no significant differences in the assessed varieties between the propagation methods. Up to 1993 only the in-vitro yakushimanum cvs. were smaller than the grafted plants, but the annual shoot length was nearly identical. It was to be expected that the cuttings being one year older would be superior and flower bud formation better in the williamsianum hybrids in 1991. But it is evident that two years growing in the same place have already equalised some of the differences. Further years of observation may show differences in growth, ageing and frost resistance.

The main difference was expected to be in the size of the root ball formation in some of the micropropagated plants, but of the in-vitro plants only 'Nova Zembla', 'Gomer Waterer' and 'Sneezy' showed smaller root balls. It may be that plants with a small root ball might have problems in cultivation by nurserymen, which would mean that some hybrids should not be propagated by the in-vitro method.

[1] Originally 13 cultivars were chosen, but one, 'Roseum Elegans' was excluded from the root ball measurements in Table 1.

References

Anderson, W.C., 1975: Propagation of Rhododendrons by Tissue Culture: Part 1 Development of a Culture Medium for Multiplication of Shoots. *Comb. Proc. Int. Plant Prop. Soc.* 25, 129-35.

Anderson, W.C., 1984: A Revised Medium for Shoot Proliferation of *Rhododendron*. *J. Amer. Soc. Hort. Sci.* 109, 343-7.

Debergh, P.C., J. Aitken-Christie, D. Cohen, B. Grout, S. von Arnold, R. Zimmerman, M. Ziv, 1992: Reconsideration of the Term 'Vitrification' as Used in Micropropagation. *Plant Cell Tiss. Org. Cult.* 309, 135-40.

McClelland, M.T., M.A.L. Smith, 1988: Response of Woody Plant Microcuttings to in Vitro and ex Vitro Rooting Methods. *Comb. Proc. Int. Plant Prop. Soc.* 38, 593-9.

Murashige, T., F. Skoog, 1962: A revised medium for rapid growth and bioassays with tobacco tissue cultures, *Physiol. Plant.* 15, 473-97.

Riechers, U. 1993: In-vitro-Kultur der *Ericaceae Vaccinium, Rhododendron und Kalmia*. Dissertation thesis, University of Hannover.

Thorpe, T.A., S. Biondi, 1984: Conifers. In: Sharp, W.R., D.A. Evans, P.V. Ammirato, Y. Yamada (Hrsg.): *Handbook of Plant Cell Culture*, Vol. 2, Macmillan, New York.

Waldenmaier, S., 1991: Vermehrungsverfahren für *Syringa* unter Verwendung der in-vitro-Kultur. Dissertation thesis, University of Hannover.

Cox on cultivating rhododendrons

C. D. Brickell

Any book by Peter Cox is an event in the rhododendron world as past experience of his publications on the genus has shown. They are full of his personal knowledge and experience – practically and not theoretically based – and of his erudition in rhododendron lore. His latest work, *The Cultivation of Rhododendrons*,[1] is no exception.

The author has ably filled a gap in the literature as to my knowledge no one has provided such a rounded, straightforward account on the cultivation of this large, fascinating and varied genus as a whole.

The first chapter introduces the reader to the genus in the wild and in gardens, setting out the areas in which the species grow and the conditions under which they thrive. It also draws together information on habitats, rainfall and altitude range in relation to natural distribution. I found particularly of interest a section on the different vegetational and altitudinal habitats and plant associations from E Nepal to W Sichuan in relation to species distribution and, most importantly for the gardener, linking this information to the types of growing conditions to try to provide for them in the garden.

Chapter 2 concentrates on the different climatic zones throughout the world in relation to rhododendron culture, a compilation of information I have not come across previously that includes general (or sometimes specific) climatic conditions – rainfall, temperature range and soil types. Britain naturally is covered in more detail than most other countries. North America is also fully dealt with and information is provided on all other areas of the world, from Iceland to eastern Siberia, and from south and central America to Australasia, where rhododendrons might be grown.

Particularly important is Chapter 3, in which the sites in gardens where rhododendrons may be grown are discussed. Again Peter Cox emphasises the importance of looking at and evaluating all relevant factors – temperature, humidity, rainfall, wind, soil type, drainage, aspect and so on before deciding which rhododendrons to grow. His very sensible message is: *don't* simply go to the nearest plant or garden centre, buy a few rhododendrons you like and plant them. *Do* look first at what you might be able to grow on your present site. And

if it is not suitable for what you would like to grow, Peter Cox provides excellent advice on what to do and how to do it if you want to grow rhododendrons successfully.

This is followed by a chapter on the placing of rhododendrons in the garden – the landscape usage in modern terms. Should it be formal or not? Are you aiming for overall effect or simply wanting a rhododendron collection – perhaps both? Peter Cox puts forward a range of ideas, accompanied by a number of colour photographs of plantings, to illustrate various ways of associating rhododendrons either as a genus or with other appropriate plants, although, not all the colour plates reflect the colours accurately. Inevitably this is to some extent subjective – I dislike standard rhododendrons (as illustrated on p.58) and am not enthused by placing rhododendrons in rather formal beds, both of which seem to me unnatural. To others these usages will appeal greatly and the author, by including a wide range of ideas and garden effects, is providing choices for all tastes.

In the fifth chapter Peter Cox sets out rules for plant selection, planting and maintenance. Apart from sound advice given on the advantages and disadvantages of purchasing container grown or open ground rhododendrons, advice on preparation of planting positions, the way in which they are best planted, the sometimes controversial subjects of the use of fertilisers and weed killers, and watering and watering systems, are covered in some detail. Pruning, training and renovation of old or misshapen specimens and the protection of young and marginally hardy species are dealt with fully and soundly.

Concise information on the cultivation of rhododendrons under glass for those in cold climates, plus container growing and coping with bonsai rhododendrons, is followed by over 60 pages devoted to propagation.

Peter Cox engagingly admits that, in spite of over 40 years experience he is still learning the best methods of propagating different rhododendrons and even with all his knowledge gleaned during that period, still has failures himself.

Apart from the traditional methods of layering and grafting, the author covers virtually every way in which it is possible to propagate rhododendrons with advice on the best methods to use for different types. The advantages and disadvantages of micropropagation and seed-raising from cultivated plants are considered, both from the amateur and professional viewpoints, as well as advice to ensure that once rooted the young plants are grown on successfully. All in all, an extraordinarily useful treatise that anyone interested in propagating rhododendrons would do well to absorb and apply.

The horrors of pests, diseases and disorders and the author's experience of modern methods to control the devastating effects of

weevils, and the problem of powdery mildew are given full coverage.

The final two chapters will be most helpful. One provides Peter Cox's assessment of the cultural differences that are required by different types of rhododendron and indicates which individual plants will be likely to grow in particular areas and conditions.

The second lists species and hybrids that the author considers worthy of recommending for the major rhododendron growing areas of the world. The book is then completed by comments on research, a glossary and a bibliography.

Has the book any faults you may wonder? There are certainly several areas where I believe improvements could and should be made in any new edition. The colour photographs do not really do justice to the overall excellence of the text. Two identical photographs, the first uncaptioned opposite the title page, the second opposite p.130 have been included and all have a slightly 'muddy' feel. Equally I found the line drawings stylised, rigid and lacking in artistic quality. This stylising of the characters of foliage and growth habit may have been deliberate in order to highlight the salient points, as in fig 5 on p.85 where the diagrammatic representation of a rhododendron root system is unreal. My main criticism, however, must be aimed at the publishers. It is extraordinary with the modern publishing techniques now available that a number of typographical errors should have been allowed to slip through the net and this affects the overall quality of the book to some extent.

Readers will no doubt pick up these errors for themselves but it is sad to see, even in the acknowledgements, 'grammar' spelt 'grammer' in a context where spelling is mentioned; and on p.69 the use of 'site' when 'sight' is intended. The text is littered with typographical errors – p.42 'bascially' for 'basically'; p.43 'rhododedron' for 'rhododendron'; p.67 'primium' for 'premium' and so on through to the glossary where 'epiphytic' should be 'epiphyte' to accord with the definition.

Let these relatively minor criticisms not put off anyone interested in rhododendrons from buying this book. It offers a rounded view and is not filled with repetitious detail or plagiarised information. Peter Cox has put his long experience of growing rhododendrons, spiced with wide-ranging data from his excursions into the wild, into this account of rhododendron cultivation.

I recommend it thoroughly to all rhododendron growers, as well as to gardeners who are not necessarily rhododendron *aficionados* simply for the excellent information on cultivation, as much of it applies to other aspects of gardening.

[1] *The Cultivation of Rhododendrons*, by Peter A. Cox; 288 pp.; 75 col. ills. + 29 line drawings. (Batsford, 1993). Price £35)

The 1992 Mekong/Salween Divide Expedition

E. G. Millais

Having been brought up on the books of Kingdon Ward's expeditions, I have always been fascinated by his travels in western Sichuan and the Mekong/Salween divide, and the incredible numbers of rhododendrons which he, George Forrest and Rock found in this area. Therefore, as no Europeans had been allowed in since about 1937, when I heard that the Chinese Institute of Mountain Hazards would be willing to take an expedition there, I was extremely excited.

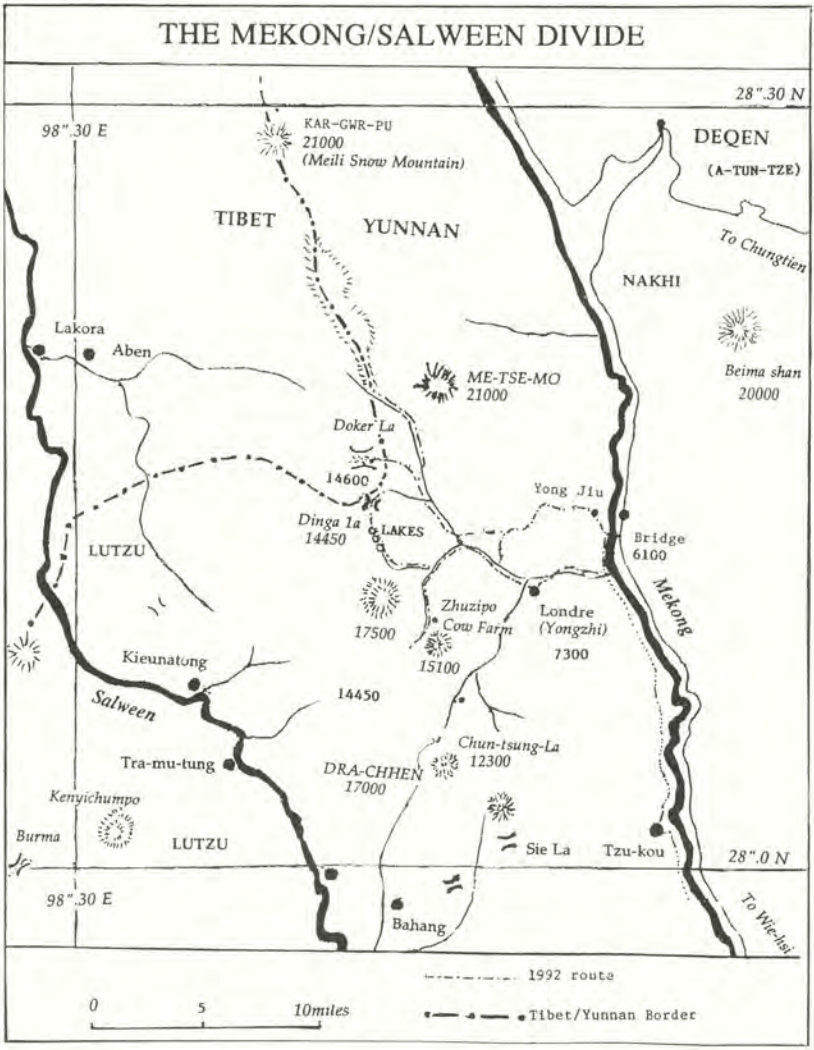
Mr Xie, their Director, thought permission for an expedition might take about nine months, as separate permits had to be obtained from the Sichuan Government and also the Tibetan Civil and Military authorities. The final decision to go ahead with the expedition was taken in early January 1992.

The nine members of the expedition consisted of myself and Romy, my wife, also Warren Berg, June Sinclair and Dr Garratt Richardson all from near Seattle, USA, Peter Cox, John Christie, and Philip and Sarah Bowden Smith from Scotland. Philip of Braevallich Nursery kindly agreed to lead the expedition once we were in China.

During the winter my wife and I spent a lot of time finding the map references of Forrest's collections, which came from data available in the Herbarium at the Natural History Museum, and also from the *Edinburgh Rhododendron Notes* Vol.39, Nos. 1 & 2 and the early *Rhododendron Society Notes* 1925-31. When these were plotted on a 'blown up' version of the American spy satellite map it became quite obvious which parts of the Mekong/Salween divide we should make for. Over 110 species were plotted in an area less than 48.2km (30 miles) square. Included in the tally were several species which, although recorded, had either never been in cultivation, or had been lost during the last war.

All arrangements with the Chinese were done by Fax, but even so, there were difficulties, as the Chinese do not work on degrees and minutes, but have their own grid map reference system. I was able to arrange for our transport to meet us at Dukou, on the Chengdu–Kunming railway, thus saving several days motoring. We could thus reach Deqen (pronounced Dayshen), the last town in NW Yunnan, in two days' motoring.

All our arrangements were eventually agreed with the Institute of Mountain Hazards, now called the Institute of Mountain Disasters! We arrived at Chengdu on 7 September, and were met by Mr Xie, who introduced us to Mrs Huang, his relation who was to be our interpreter. This was inspired casting; Rosie, as she was known, soon became everyone's favourite. She worked hard and cheerfully for us throughout the expedition.



We also met Mr Xiao (Chow) our Chinese leader, an engineer in the employment of the IMD. An able and competent young man, he had been born in Kanting and probably had some Tibetan ancestry, as he was always able to maintain excellent relations and communicate well with any Tibetans we met.

Deqen is not my favourite Chinese town. In Kingdon Ward's day it was called A-tun-tsi, and was used as a base both by him and by George Forrest. It is at the end of a narrow valley at a height of 3353m (11,000ft), not far from the Mekong, and has recently been almost completely rebuilt. Unfortunately the rebuilding has not included any provision for drainage. Our first hotel had no loos, and the second hotel had only some very primitive types about 91m (100yd) from the main buildings. Those could be reached at night only if you were prepared to brave the rats which skitter about in front of you wherever you go! The main street, on a steep slope, has a new concrete surface, which helps to carry away any washing water thrown out from private residences or restaurants.

At home, looking at the available maps, it had been obvious that, although the two rivers flow parallel only 32km (20 miles) apart, there was, for hundreds of kilometres, no road crossing the high mountains separating them. Our plan therefore had been to travel north from Deqen up the Mekong valley, and after reaching the Lhasa road to return south by way of the Yu Chu valley, until we reached Mengong and Cawarong, roughly in the centre of our area. This would have avoided crossing the Doker La pass, which was one of Kingdon Ward's main routes, and this plan was suggested to the IMD. However, it now transpired that although shown as a good road on our American maps, the road going south to Cawarong by way of the Yu Chu was in fact only a mule track! This was a great disappointment, but the obvious solution was to hire mules and to attempt to cross the Doker La, which lies about 48.3km (30 miles) south of Deqen, if we had time.

Mr Xiao, our Chinese leader, now came into his own. He and Philip Bowden Smith arranged at short notice mule transport to take us into the Mekong/Salween divide area. The two days we spent botanising on Beima Shan while waiting were not wasted. It helped us to acclimatise to the 3960m (13,000ft) altitude.

There were huge areas covered with pure *R. chryseum*, and others with a general mixture of *lapponicum*, *primuliflorum* and *cephalanthum*. North- and east-facing slopes held *R. phaeochrysum* and *R. agglutinatum*, with many intermediates, and there were occasional plants of *R. wardii* and *agamniphum* var. *flavorufum*. Everywhere there were alpine flowers, gentians, pedicularis, *Primula sikkimensis* and yellow saxifrages, and in the distance, the magnificent outline of Kar-gwr-pu, 6700m (22,000ft), across the Mekong valley. The Doker

La lay just to the south of this, and this was our final destination.

Philip Bowden Smith and Xiao had arranged for our mule transport to meet us at the Mekong bridge 48.2km (30 miles) south of Deqen, so on the following day our transport took us along and above the Mekong, 914-1220m (3,000-4,000ft) below. The valley is precipitous and there is no doubt where we would have ended up if our driver's attention had been distracted by the fantastic scenery. Being in the rain shadow of Kar-gwr-pu, it is arid and receives only 5-7.5cm (2-3in) of rain each year. Few plants grow on the reddish soil and cliffs above the river which appears as a narrow ribbon snaking its way between them.

The fairly modern Mekong suspension bridge is wide enough for mule transport to pass, but we had to wait for an hour or two before our mules appeared; our arrival was obviously the social event of the year, and all the ponymen's wives and children came to see us off. Only the women wore national dress, but their huge magenta pink headgear was most impressive, as were their beads and silver bangles. All had wonderful weatherbeaten faces (see Fig. 2). Our baggage was finally packed on to the mules in carefully balanced loads and we set off across the Mekong, and after passing through the village of Yong Jiu made our first camp about 914m (3,000ft) above the river.

Our route for the next two days took us high above the Londre river, through dense forests of Abies up to 61m (200ft) high. Occasional rhododendrons began to appear, including a huge patch of *R. edgeworthii*, growing on either side of the path for over 91m (100yd), and also *R. anthosphaerum, likiangense* and *augustinii* ssp. *chasmanthum*.

Our third camp was ideally situated by a bend of a river, at about 3660m (12,000ft) on fairly flat ground. Nearby was a rough wooden shack which provided shelter for herdsmen during the summer, and this became known as the No.1 cowfarm (Zhu-zi-po). We stayed here for four nights, making daily expeditions in all directions, finding incredible numbers of rhododendrons, and by splitting up into small parties extra ground was covered.

On our first day Romy and I climbed up a very steep gully to the north of our camp, and early on discovered a low growing bank of rhododendrons which included *repens*[1], *saluenense, mekongense*, and *radicans*[2]. Higher up were large patches of *R. sanguineum, eclecteum, brachyanthum* and, in partly shaded places with good drainage, *primuliflorum* and *cephalanthum*.

Warren Berg, June Sinclair and Garratt Richardson (our doctor) had been covering much the same area as us, but Peter Cox and John Christie climbed up the other side of the valley, facing north, and found themselves in a thick forest of *R. praestans, arizelum* and

semnoides. They reached a lake at 3960m (13,000ft), with many gentians and primulas, and the remains of nomocharis and meconopsis. Unfortunately Peter twisted his knee during the descent, and this was to hamper his activities for several days afterwards.

On the third day we all climbed up to the highest cow farm, which lay at about 3800m (12,500ft). We were greeted by a Tibetan carrying a crossbow. This was neatly made and fired short metal bolts very accurately; he was later seen carrying away a fine looking pheasant! This area yielded many more rhododendrons. Besides *R. beesianum, praestans, fulvoides, semnoides* and *selense*, there were many colonies of *sanguineum*, each one slightly different in leaf form, as well as the red-flowered form of *temenium*. I also found a very dwarf form of *R. cephalanthum* growing on a low cliff. A Tibetan indicated to Romy that there were 20 varieties of rhododendron around the farm.

Up to now we had been travelling parallel to but south of the main Doker La, and had been expecting to cross over a ridge just beyond the third cow farm, and thus down into the Salween valley. However, at this point our head mule driver refused to proceed further westwards as this would lead us into quite a different ethnic area. The fact that we had 20 mules with us would not be appreciated so late in the season when forage was already short. Xiao suggested, and we agreed, to return a short distance and then turn north over a pass called the Dinga La, and which eventually joined up with the Doker La.

The approach to the Dinga La was through some of the finest scenery of the whole trek. First, through dense forest by the side of a fine burn, criss-crossed with fallen trees, and then into more open country with groups of *Abies forrestii*, and finally past a series of three deep blue lakes surrounded by *R. beesianum* and *R. agganiphum* var. *flavorufum*, with the jagged cliffs of the Dinga La itself on the skyline. Our camp here was just beyond the last lake, on flat ground covered with *R. rupicola* var. *chryseum*. Four small streams met here, and there were quite a number of yaks and zhos still grazing which had not yet been driven down to lower ground.

The best part of this camp, however, was the *R. agganiphum*. There had been some doubt as to whether this was a true species, but here it was in vast quantities, making flat-topped bushes 1.2-1.5m (4-5ft) in height, with no possible parents, such as *R. phaeochrysum* or *agglutinatum* nearby. The indumentum on the lower side of the leaves was beautifully marked with huge rusty red leopard-like spots. Also, near the lake, there was an interesting area of *R. repens* about the size of a tennis court, growing in very boggy ground, the shoots intertwining with other dwarf shrubs and sphaghnum moss and, at the side, a single magnificent specimen of *R. saluenense*, only

22.9cm (9in) high; this example was, however, over 1.5m (5ft) across!

Our climb up the Dinga La the next day was quite an effort, and our altimeters recorded the summit at between 4360 and 4450m (14,300 and 14,600ft), however the flora made it all worth while. At these heights, even at the end of September, the snow is still melting, and once above the tree line huge areas of alpine flowers appeared, *Primula sikkimensis* var. *pseudosikkimensis*, a very superior form, and *P. serratifolia, deflexa, amethystina* var. *brevifolia, triloba*, and many other flowers, gentian, gentianella, anemone, potentilla, aconitum both blue and yellow, cremanthodium, *Corydalis flexuosa*, and many others. From the summit one had wonderful views right back to the first cow farm, and looking north to the snow covered Metse-mo, one of the larger peaks of the Kar-gwr-pw range (see Fig. 1).

The vegetation on the north side of the Dinga La ridge was completely different. The thick mat of dwarf rhododendrons growing on the 40° slope was only about 30cm (one ft) high, but included *R. repens* at the lowest level, *chamaethomsonii*, dwarf forms of *sanguineum*, and a fine rather large-leaved form of *campylogynum* var. *celsum*. The pedicels of this were often 7-13cm (4-5in) long, giving the impression of holding a very large flower. There was also another species which Peter thought might be *R. codonanthum*, but unfortunately this identification was shot down when specimens were compared with Forrest's collections of this plant at the RBG Edinburgh. Although the leaves were slightly like *chamaethomsonii*, it was not variable like that plant, and the shoots reminded one of *R. pronum*; the flower colour, however, was probably red, judging from the buds which we cut open. Botanising on this very steep slope was difficult, and I found the best way was to lie face downwards, and slip gradually downhill while holding on to any convenient rhododendron branch.

Our next camp was about halfway down the Dinga La, on its north side, and fodder for the mules was in very short supply, so that by the morning they were spied about 1.6km (one mile) away and 305m (1,000ft) above our camp! Since this trip I have become a mule fan. Normally there is only one man looking after three or four animals, which are not led, but follow their leader all day without any trouble or bother, negotiating the most inhospitable landslides, pausing occasionally to gain extra oxygen before tackling any particularly steep rock steps in the way ahead.

The following day we were down to the Doker La pass. This is a very holy area for Buddhists, and great kudos is obtained by an annual pilgrimage to the top of 4500m (14,600ft). We continually passed whole families taking part in this visit, the youngest members being tied on to the backs of the family yaks. Those above five years old are expected to walk. It is still the quickest way for the

inhabitants of Mengkong and Cawarong to go shopping in Deqen, although this is a ten-day journey. Prayer flags are placed annually at the bottom of the steep part of the pass and at the summit.

Unfortunately, there was not now time for us to cross the pass ourselves, but a few of us reached the top, and reported seeing wonderful flowers, but a shortage of rhododendrons. This was to be expected as our plots of Forrest's collections showed none on the top of the pass, but very many indeed about 610m (2,000ft) below on the Salween side. Hopefully we will visit this area in 1994 (see below p.27).

The whole area is prone to rock falls, and an enormous one came down on our last night, and continued for about a minute. Some of the rocks are huge, as large as a small house, and it is obviously important to camp in the centre of the valley!

It was now time for us to start our return journey. There are not many rhododendrons on the east side of the Doker La, but there were quite large plants of *R. wardii, beesianum, wariifolium* and *beliolepis* to see on the way down.

We had arranged with the IMD that we should return to Chengdu by the Lhasa road, well to the north of us, by way of Batang, Litang and Kanding. This was a fascinating journey, as the road runs along for hundreds of kilometres at between 3960 and 4270m (13,000 and 14,000ft) over the Tibetan Plateau, through pasture of lawn-like turf covered with seas of blue gentians; grazing this area are huge herds of yak and zho. In one 80.5km (50-mile) stretch I reckoned that we had passed about 20,000, in addition to countless sheep and goats. There were not many rhododendrons, but occasionally on northern exposed slopes there were stands of *R. phaeochrysum*, and as we neared Kanding a great many *lapponicum*; many of these we thought were hybrids, but we were able to identify *R. websterianum, intricatum, nitidulum* and *nivale* ssp. *boreale*.

We had time for one afternoon botanising before our journey back to Chengdu, and for this we crossed the main Kanding river at the bottom of the Zeduo pass, and walked up one of its major tributaries. The valley bottom was comparatively flat, and held a great many *R. souliei, oreodoxa, ambiguum* and *primuliflorum*, and, rather excitingly, *R. flavidum*. I understand that only one of Wilson's three collections of this species proved to be viable. Here it was in quite large quantities, growing together with many hybrid plants between it and *R. ambiguum*, which all looked suspiciously like *R. wongii*! Here we also collected the cone of an interesting larch, which proves to be *Larix mastersianum*, not known in cultivation in this country. The following day we motored back to Chengdu, stopping for a moment on Erlangshan to observe the *R. coeloneuron* which we had found there in 1990.

Although we did not reach the Salween river, the huge number of species found, 63 altogether, made this a most interesting expedition. Perhaps its main value lies in finding out the difficulties of operating in this area. Our food was quite abominable, as the IMD had expected to obtain good supplies at Deqen, but this was not the case. They were able to buy us huge quantities of quite nice spam, but after eating spam for breakfast, lunch and supper every day for a fortnight, to say that it palled is a serious understatement! Luckily Philip dealt with all our problems quite magnificently, and Sarah his wife advised our fairly useless Chinese cook on a number of occasions: we were greatly indebted to both of them.

We plan to mount another expedition in 1994, during June. Forrest found a large number of really exciting species between the Doker La and the Salween, including *R. nakotiltum, codonanthum, himertum*, also yellow, white and pink forms of *sanguineum*. Many of the *sanguineum* series rhododendrons are so alike when in flower that a visit during the flowering season is the only way for positive identification.

Postscript: May, 1994

Our spring 1994 expedition foregathered at Dukou on 17 May with rather different participants, who included Dr David Chamberlain and Roger Hyams from the RBG Edinburgh, Dr Ross Hayter from Australia and Jerry Broadus and Clarice Clarke from Seattle, who recorded all our important finds to within a few yards by GPI.

When we finally arrived at the bottom of the Doker La it became obvious that the previous winter had been the worst for very many years, and the pass was still completely blocked with snow. As a result we spent some time in some of the places where we had botanised in 1992, seeing many rhododendrons flowering, in the snow, such as *arizelum, praestans, beesianum, eclecteum, selense, fulvoides, cephalanthum, sanguineum, keleticum, forrestii repens*[1] and *mekongense*.

We attempted to cross the Chun-tsung La early in June but 305m (1,000ft) from the top the path disappeared under a metre (3ft) of snow, and while we kicked our way to the top, our heavily laden mules had to return to our last camp. Although we did not reach the Salween side of the divide, we were able to visit a nearby valley, leading up to Mt Ah-tzi-che-qiou, probably about 5180m (17,000ft) where there were large areas covered with rhododendrons in flower, including our final prize, *R. proteoides* growing alongside a bright red *R. temenium*, in the snow at 4200m (13,800ft) (see Fig. 3).

[1] Now *R. forrestii* ssp. *forrestii*
[2] *Now R. calostrotum* ssp. *keleticum*

Plant collecting for a northern climate

Björn Aldén

Introduction

For the first time since 1934, when Dr Harry Smith from Uppsala travelled in China, Swedish botanists have been able to collect herbarium specimens and seeds there. The writer was a member of two expeditions to NW Yunnan in 1993, officially designated KEG (Kunming-Edinburgh-Göteborg Botanical Expedition) and KGB (Kunming-Göteborg Botanical Expedition) and the following account is intended to elucidate some of the objectives as well as the results of these expeditions.

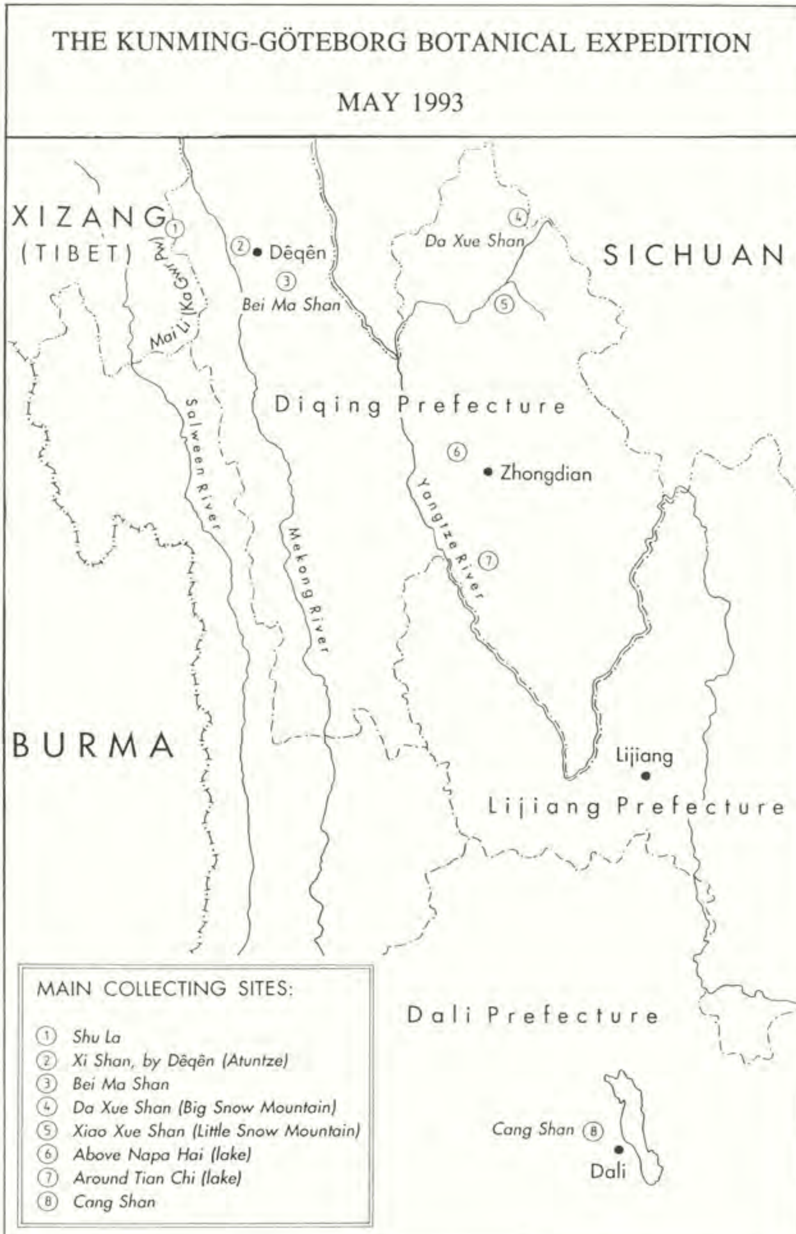
The Swedish plant collecting tradition in China is not so extensive as the British, but Dr Harry Smith from his travels in 1922 and 1934 made some important contributions to the knowledge of the Chinese flora and many plants raised from his seeds are still to be found in cultivation in Sweden and elsewhere.

Previous experience with Yunnan plants

The various frames of reference for the 'hardiness' of plants in Sweden are due to the seven different climatic zones, but also to the different length of the cultivation period. For dormant plants the critical factor is obviously the minimum temperature. In practice anything planted after the severe winters of 1985-7 cannot be used for hardiness reference. To be reliably hardy, perennials and shrubs need at least two to three decades in cultivation and trees even longer. None of the Yunnan material from seeds collected since 1980 could therefore be used for hardiness reference.

Going back to earlier material dating from the 'classical' collectors, how much had been tested in Sweden? It soon became apparent that only a small number of species, randomly selected, had actually been cultivated in the country and had all originated in the climatically more favoured parts of Yunnan. The rhododendron species collected by Joseph Rock in 1949 are an example. This is not surprising, given his collecting area.

To sum up, in Sweden we had no reliable experience with trees and shrubs from Yunnan and consequently nothing that could contradict our theories that some areas of Yunnan could well have plants suitable for the Swedish climate.


THE KUNMING-GÖTEBORG BOTANICAL EXPEDITION
MAY 1993
XIZANG
(TIBET)
SICHUAN
BURMA
Dêqên
Bei Ma Shan
Da Xue Shan
Mai Li (Ka Gwr Pw)
Salween River
Mekong River
Yangtze River
Diqing Prefecture
Zhongdian
Lijiang
Lijiang Prefecture
Dali Prefecture
Cang Shan
Dali
MAIN COLLECTING SITES:
1 Shu La
2 Xi Shan, by Dêqên (Atuntze)
3 Bei Ma Shan
4 Da Xue Shan (Big Snow Mountain)
5 Xiao Xue Shan (Little Snow Mountain)
6 Above Napa Hai (lake)
7 Around Tian Chi (lake)
8 Cang Shan

Recent Swedish plant collecting

Apart from the obvious climatic considerations, one reason why our recent Göteborg expeditions chose the southern province of Yunnan and not the more northerly and possibly colder provinces of Sichuan, Ghansu or Shaanxi, from whence some material had already been successfully tested in Sweden, was that since 1950 China had closed her doors to westerners. By 1980 things had begun to change. The first Sino-American expedition to Hubei was followed in 1981 by a British-Chinese expedition to Yunnan. Göteborg Botanical Garden was offered seeds from both these co-operative ventures. Uncertainty about hardiness of these plants, together with the probable cost and difficulties of organisation, prevented any immediate Swedish initiatives.

Since the few previously tested species from the Forrest and Rock collections had not seemed sufficiently tough for our climate, we needed material from the climatically less favoured areas. We thought Yunnan, still the province richest in species, might contain such areas, especially in the north-western corner situated within the Tibetan high plateau where several mountains reach 5000m (16,400ft) in altitude – but even in the 1980s this area was still not open to foreigners.

However, in 1991 the Sino-Scottish expedition (CLD) (see David Paterson's article in *Rhododendrons with Camellias and Magnolias*, 1993, No.45, pp.7-15) was permitted to visit the Diqing Autonomous Tibetan Prefecture, collecting as far north as the Zhongdian plateau. A similar Swedish/Chinese expedition jointly with the Kunming Institute of Botany was envisaged for 1992 to visit North Bei Ma Shan and North Ka Gwr Pw or Mai Li. All our research pointed to this being the right region. At this stage we were invited to join the KEG expedition being planned by the Royal Botanic Garden Edinburgh. We accepted as this was an excellent opportunity to gain practical field experience. In the event no permission to visit the original area, the Gaoligang Shan, was granted and the expedition went instead to the higher and drier regions of the Diqing Autonomous Tibetan Prefecture, i.e. NW Yunnan, exactly where we wanted to go.

The KEG Expedition 1993

The team, except for myself all from Edinburgh (Crinan Alexander, Ron McBeath, David Long, Henry Noltie and Mark Watson), and three colleagues from Kunming were led by Guan Kaiyun. We left Kunming on 22 May returning about 25 June. The trip could hardly have turned out more successfully. More than 1,800 herbarium specimens of higher plants were made, a number new to science and several collected only once or twice previously. The expedition account is available at Edinburgh.

For the subsequent KGB expedition, this provided invaluable experience of the flora, the topography, the local climate, the accessibility of certain areas together with a wealth of practical details. Localities of special interest were selected and rhododendrons of particular interest were marked (with yellow plastic ribbon) for a September visit for seed. In this way Da and Xiao Xue Shan (Big and Little Snow Mountain), mountains surrounding the Zhongdian plateau and the south-east of Bei Ma Shan were added to the KGB programme.

The KGB Expedition

On 13 September, 1993 three botanists from Göteborg, Magnus Liden, Herik Zetterlund and myself, left Kunming for a four-week tour of NW Yunnan. With us were Dr Su Zhe Yun (formal expedition leader), Mr Lu Ren Fu from the Kunming Institute of Botany and our two drivers, Yang Song and Hu Zhao Chang.

The principal collecting sites are shown on the map. About one week was spent on or near the Zhongdian plateau, including four days up at Da and Xiao Xue Shan (see Fig. 4). Two weeks were spent on the Bei Ma Shan and in the vicinity of Dêqên. We were privileged to be the first western botanists since 1912 to visit Shu La, the pass to Tibet in the northern part of Ka Gwr Pw. We spent nearly a week there. We spent 10 October on Cang Shan obtaining seeds of selected species including rhododendrons near the Long Quan peak.

The KGB expedition collected more than 700 seed numbers. Three genera had been given priority (*Corydalis, Primula* and *Rhododendron*) and nearly 25 per cent belonged to these genera.

Notes on Rhododendrons

General comments

Considering that the main area visited belongs to one of the drier and floristically less rich parts of Yunnan the number of rhododendron taxa (including identified hybrids) collected during KEG and KGB was surprisingly high – around 40.

Perhaps the most noteworthy observation during the two expeditions was the extent of natural hybridisation. For woodland species such as *R. phaeochrysum, R. wardii* and *R. vernicosum* this phenomenon has probably been much accelerated over the last few decades by extensive forest-clearance, with competition-free, open ground being constantly offered to hybrid seedlings. As some rhododendrons are successful pioneer species, large hybrid swarms can become established – leading to great taxonomic complexity. Open

alpine habitats appear to produce similar results, for example in subsection Lapponica.

Subsection Heliolepida

This group of species has hitherto not been too satisfying in Swedish cultivation. Even *R. rubiginosum*, being the hardiest, suffered severely after the hard winter of 1987. We put our hope in KGB 174, collected in a relatively dry region on the north side of Xiao Xue Shan at 3840m (12,600ft).

R. heliolepis is almost untried in Sweden. In its best forms, i.e. the ones with pure white or deep pink flowers, the species certainly is worth growing.

Subsection Lactea

Agreeing with Peter Cox, I prefer keeping *R. beesianum* together with *R. lacteum* in this subsection. Both species were collected by KGB. Presumably *R. beesianum* is the best qualified for the Swedish climate, occurring as high as 4300m (14,100ft). The species has only been in cultivation for a few years in southern Sweden. The scarcity in cultivation is due to factors other than hardiness (see Fig. 6).

Subsection Lapponica

Several taxa of subsection Lapponica are doing fine in southern Sweden, and some species, like *R. fastigiatum, R. intricatum, R. polycladum, R. rupicola* and *R. russatum*, even without extra winter protection. All the KGB collections of subsection Lapponica would thus be of some interest to Swedish growers. The most common high-altitude taxon in the NW and N parts of the Diqing Prefecture is *R. nivale* ssp. *boreale*: an effort to select some good forms was made by marking plants in spring. The offspring will certainly show some variation. New to Yunnan was ssp. *nivale*, found below Shu La on Mai Li. The nearest recorded localities are in Tibet.

On the Bei Ma Shan *R. nivale* was obviously hybridising with *R. tapetiforme*. The centre of distribution of *R. tapetiforme* is predominantly in NW of Yunnan being particularly common on Mai Li on the border with Tibet, where seeds were collected. It has hardly been grown in Sweden at all and is altogether rare in cultivation.

R. complexum was found on two mountains bordering the Zhongdian plateau. Near Lake of Heaven (Tian Chi) it is especially common. On both localities, hybrids with *R. rupicola* were common. In cultivation *R. complexum* is as rare as *R. tapetiforme*. KGB 745 will hopefully compensate for that.

R. rupicola var. *rupicola*, found mainly at medium altitudes around the Zhongdian plateau, is sometimes hard to distinguish

from *R. russatum* and some of the specimens are more or less intermediate. Most of the seed numbers from the Bei Ma Shan are apparently var. *chryseum*, being the common type here, judging from our early summer observations.

R. hippophaeoides is common in wet, calcareous places on and near the Zhongdian plateau rarely higher than 3600m (11,800ft). A white-flowered form was found north of the plateau.

Subsection Neriiflora

This horticulturally outstanding group of species has so far been more or less reserved for the milder parts of Western Europe and elsewhere. In Göteborg only *R. forrestii* has survived over a longer period. North of latitude 28°N on the Mekong-Yangtze divide only *R. sanguineum* var. *sanguineum* occurs. The hitherto northernmost locality known is Kari La in S. Bei Ma Shan. We were lucky to find it further north in a valley of outstanding interest (see under subsection Taliensia). Material from this locality would certainly be of interest, possibly being the hardiest of the species hitherto collected.

Subsection Saluenensia

R. saluenense ssp. *chameunum* is a very high altitude rhododendron. We found it up to 4600m (15,100ft), where it normally grows in moist places, like old snow patches. The KGB collections are from altitudes between 4400 and 4550m (14,436 and 14,930ft).

We were surprised to find also the more robust ssp. *saluenense* in the Bei Ma Shan. To my knowledge there is but one previous report for this subspecies east of the Mekong River. What is more, 'our' ssp. *saluenense* was found in the very same valley as *R. sanguineum* var. *sanguineum* and a certain member of subsection Taliensia.

Subsection Taliensia

Both *R. phaeochrysum* and *R. agganiphum* would be suitable for southern Swedish conditions. In fact the former has already survived here for nearly 50 years, the material originating from the Kanding region in Sichuan. *R. agganiphum* had only recently been tried in Sweden. The forms with deeply rose-coloured flowers are truly magnificent and, in my opinion, one of the best Taliensias. The KGB material includes some selected, fine types from altitudes around 4300m (14,100ft), from Shu La – only 20-40cm (7¾-15¾in) in height – and from the Bei Ma Shan.

Likewise hardy is *R. traillianum*, rare in NW Yunnan. The few finds of *R. traillianum* in the Mekong-Yangtze divide belongs to var. *dictyotum*. We found it on the local mountain west of Dêqên.

In a side valley of the Yangtze River, above Benzilan on the eastern slopes of the Bei Ma Shan further Taliensias, some of probable

hybrid origin, were observed. At about 3750m (12,300ft), in sparse *Abies forrestii* forest several plants of *R. roxieanum* were found on KEG among *R. agganiphum*, *R. phaeochrysum* and *R. beesianum* (see Fig. 6). At least two individuals were not typical *R. roxieanum*; one, (KEG 1043) was later identified as *R. roxieanum* × *phaeochrysum*. This side valley was thought interesting enough to merit a revisit in the autumn and our expectations were not disappointed! *R. roxieanum* was found to cover thousands of square metres at somewhat higher levels. Further hybrids with *R. roxieanum* were found. A single specimen growing with *R. roxieanum* and *R. beesianum* looked uncannily like *R. alutaceum*!

However, the real highlight of the autumn journey was still waiting for us further up the same valley – *R. proteoides* (see p.27)! At its lower altitudinal limit, at about 4000m (13,123ft), it meets *R. roxieanum*. Here a number of intermediates, some of them indeed very similar to *R. roxieanum* var. *cucullatum*, occur. Due to the extensive hybridisation in this region it was sometimes difficult to judge whether one faced the true *R. proteoides* or a hybrid (or an introgression product?). Close to a snowpatch, flowers were still to be found in October! They were white, dotted purplish red. The two seed-numbers KGB 695, from 4100m (13,451ft), and KGB 700, from 4200m (13,780ft), are already fairly widespread among growers. As there are evidently only two Rock numbers from 1949 in cultivation, Rock 94 (from Ssu'Chi'T'ung Gorge on Salween-Irrawaddy) and Rock 147 or 151 (both from north of Sie La on Mekong-Salween) it will certainly be interesting to follow the development of this new material from the Mekong-Yangtze divide.

Subsection Triflora

By far the most common rhododendron, observed daily during the two expeditions, was *R. yunnanense* (consequently dubbed *R.* 'yawn-anense'). The complexity of the aggregate to which it belongs is well known, with the great variation exhibited by the species itself being partly explained by its wide geographical distribution and great altitudinal amplitude. According to observations made on KEG the taxon *R. pleistanthum*, occurring near Dêqên especially, is merely a form of *R. yunnanense*.

R. yunnanense has so far not been very successful in Sweden. For the most this has probably to do with insufficient hardiness. Hopefully, material from 3800m (12,467ft) collected on the north side of the Bei Ma Shan will prove better than the material hitherto cultivated in Sweden.

R. oreotrephes is border-line hardy in southern Sweden. It remains to be seen if our material, collected at or just above 3800m (12,467ft), will improve the situation.

A Canadian pioneer: George Fraser 1854-1944

Bill Dale

George Fraser was born in 1854 at Lossiemouth, Moray, Scotland. His gardening career began in 1871 when he started working at Christie's nursery in Fochabers, and in the same year he was apprenticed to the famous Scottish gardener, John Webster, at nearby Gordon Castle, the home of the Duke of Richmond and Gordon.

He completed his apprenticeship and for the next several years worked at large estate gardens in Scotland, the final one being at Auchmore in Perthshire. He was still in his twenties, in a position of authority and with an apparently secure future, when in 1883 he emigrated to Canada. He settled in Winnipeg, a very unlikely spot for anyone who wanted to grow rhododendrons – as he did. One has to wonder why he decided to start life anew in far off Canada. Possibly he wanted to purchase his own land and be his own boss.

In 1888 he moved west to Victoria, British Columbia, where he purchased a 20.23ha (50-acre) farm and in 1889 secured the position of foreman in charge of the construction of Beacon Hill Park in that city. But he still wasn't convinced that he had found the place he was looking for, as in 1892 he purchased 104ha (256 acres) in Ucluelet, a remote village on the west coast of Vancouver. The Ucluelet area receives a yearly 305cm (120in) of precipitation and with a mild climate, due to the warm Japanese current, is ideal for growing rhododendrons. He started to build his nursery and the remaining 50 years of his life were spent here. He had found his Rhododendron Heaven.

Fraser was not only interested in growing rhododendrons, azaleas and heathers, but was constantly crossing wild varieties of flowers and fruits with domestic varieties with a view to improving them. In 1897 he received a shipment of domestic cranberries from Nova Scotia. He recognised a weed among the plants as being *Rhododendron canadense*, a native of the east coast of North America. He planted it separately and in 1912, when it first bloomed for him, promptly crossed it with *R. japonicum*. The result of this cross first bloomed in 1919, and later that year he sent a budded plant to both the Arnold Arboretum in Boston and the Royal Botanic Gardens in Britain. At Kew, when this plant bloomed in 1920, the curator, Mr William Watson, named it *R.* 'Fraseri'. That same year, and quite independently, the Arnold Arboretum also named it *R.* 'Fraseri'.

It was at that time that a young American, Joseph Gable of Stewartstown, Pennsylvania, became interested in the wild azaleas growing near his home. He wrote to the Arnold Arboretum to find out where he might learn more about these plants which turned out to be *R. nudiflorum*. Professor Charles S. Sargent and E.H. Wilson became interested in the young man and suggested that he should get in touch with George Fraser, a rhododendron breeder of Ucluelet, B.C. This was the beginning of a lifelong corresponding friendship which had momentous results for the development of rhododendrons in America.

Fraser urged Gable to try his hand at breeding and sent him an introduction by mail to E.J.P. Magor of Lamellen, Cornwall. Fraser also arranged for Gable to join the Royal Horticultural Society and urged him to subscribe to the British *Gardeners' Chronicle*. From 1920 until Fraser's death in 1944 he, Gable and Magor carried on a three-way exchange of letters, pollen, seed and even plants. Gable would go on to become the dean of all American rhododendron breeders and growers and would become the first recipient of the prestigious Pioneer Achievement Award of the American Rhododendron Society.

Gable himself had no doubt about the debt he owed to Fraser. In a letter to Guy Nearing in 1942, he said it was 'Mr. Fraser of Ucluelet who first introduced me – by mail – to Mr Magor. So to these two men more than all others – almost to the exclusion of all others – I owe my acquisitions in the first few years of my rhododendron growing'. In 1960, 16 years after Fraser's death, Gable wrote: 'My first hybrids of *fortunei, discolor* and perhaps of *decorum* were obtained through the Magor-Fraser channel, and much of my work has been basically built up from these crosses. I may have done the same from plants I grew or obtained from the Arnold Arboretum but they would have been years behind their present status.'

Fraser never forgot his Scottish roots. Every year he would send a box of *Calluna vulgaris* to his friends in Winnipeg and Victoria for their Robbie Burns celebrations. Fraser was a well-loved member of the Ucluelet community and played his violin for all local dances and school concerts. His garden was always open to visitors.

He remained in his home in Ucluelet until the last few days of his life. When it was time for his friends to carry him to the speedboat pulled up on the shore to take him to the hospital in Port Alberni, he said to his friend, Bud Thompson, 'I don't know where I am going to end up but it doesn't matter – I have had my Heaven here on earth'. He died two days later on 3 May, 1944 in his 90th year. He was buried in an unmarked grave in the Ucluelet cemetery.

During his lifetime, sadly, George Fraser received little recognition for his outstanding contribution to the knowledge of producing and growing rhododendrons. This came only many years later.

Above: Ucluelet, Vancouver Island, B.C., c. 1910, a few years after George Fraser settled there. Right: George Fraser in his middle years.

Before his own death, Joseph Gable wrote: 'Both I and those who grow the varieties of rhododendrons that I have concocted and disseminated owe a debt we cannot figure in dollars and cents to the kindly paternal advice and generosity of my old friend George Fraser.'

In 1990 the people of Ucluelet under the leadership of the Lions Club, the Army, Navy and Air Force veterans and the Ucluelet and Area Historical Society, built a George Fraser Memorial Garden on part of the 4.5ha (11 acre) site that Fraser gave to build schools and a playing field. They also placed an attractive granite marker on his grave.

In 1991, the American Rhododendron Society made Fraser the fourth, posthumous, recipient of their Pioneer Achievement Award. In 1992, the Canadian Scottish Heritage Foundation placed a bronze plaque in his honour at the entrance to Christie's Nursery at Fochabers. A plant of *Rhododendron* 'Fraseri', donated by the Cox Nursery of Glendoick, grows below.

On 15 May, 1992 the Ucluelet and Area Historical Society and the British Columbia chapters of the A.R.S. combined to place a bronze plaque, attractively mounted on a native cedar log, in the George Fraser Memorial Garden in Ucluelet, B.C. in memory of the Scotsman who did so much to make this a more beautiful world in which we live.

Rediscovery of 'Rhododendron acrophilum'

G. Argent & D. Madulid

Since '*acrophilum*' means summit-loving and the habitat was described as mossy forest at the summit, it was to the top of Mt Mantalingajan in the south of Palawan island in the Philippines that our collecting party headed in search of this species and other plants.

Rhododendron acrophilum Merr. & Quisumb. had only been collected once before by the Philippine botanist Gregorio Edano in 1947. We were lucky to have met Lawangan and his two sons who lived on the mountain obtaining a living from collecting dammar resin from the Agathis trees in the mountain forest. These men, apart from being very fit and tough, knew the mountain extremely well and were most amiable companions in our search.

We broke out of the montane rain forest into a dense but low shrubbery on our third day on the mountain and scoured the ridge for plants in a cold mist and intermittent wind-blown rain which contrasted with the intense state of drought we had encountered lower down. We found the white-flowered *Rhododendron edanoi* Merr. & Quisumb, named after Gregorio, but apart from a few interesting plants, we could find no other *Rhododendron* in the summit area. We stopped for a night at the house of Lawangan and in the semi-cleared area in the vicinity we found two other rhododendrons, the small-leafed orange-red *R. bagobonum* Copel.f. and a somewhat larger plant totally without flowers. Our guide declared that he knew this larger plant well and that it had red flowers which was both exciting and disappointing. Exciting because it was a third species of rhododendron on a mountain which had previously only boasted two species, disappointing because it did not fit *R. acrophilum*, described as having yellowish-white flowers, growing at the summit and we were now well inside the montane forest. Cuttings of this plant were taken and began their long journey back to the Edinburgh Botanic Garden via Manila with all the necessary certification.

The cuttings flowered in 1993 as remarkably small plants, some only 15cm (6in) high, and proved to have attractive, bright,

bicoloured orange and yellow flowers easily identifiable with the red described by Lawangan, given the broad-range colour bands of some indigenous people and some latitude in the double translation from his tongue to English (See Fig. 14). The plants keyed out in Professor Sleumer's keys (*Flora Malesiana*, vol.6, 1966) quite precisely to *R. acrophilum* but the flower colour and habitat were at variance. This caused some perplexity until it was realised that in all probability this species had been confused with the white-flowered *R. edanoi* collected at the same time on the summit ridge. This is an easy mistake for anyone who has travelled several days to collect on tropical mountains and not always written all the notes at the time because of exhaustion or adverse weather conditions. The plants have since been compared with the type specimens of Edano's 1947 collection in Manila, Kew and the Natural History Museum and they agree.

It is early days but the plants grow and flower freely in cultivation. Their fiery flowers make very attractive horticultural subjects. We now have a much more accurate description of this species (see Fig. 14).

We would like to thank Efren Romero, who organised us so expertly in the Philippines; Mr Raga Sugpon of Macagua our local host, who arranged the climb; the Royal Botanic Garden Edinburgh for financial support; and the National Museum in Manila who supported the joint venture.

Growing Magnolias from cuttings

Maurice Foster

In recent years a superabundance of new magnolia forms and hybrids have been registered and introduced. Many are first-class plants but generally slow to filter down through the trade as most do not flower when small, lack good commercial garden centre appeal and are not easy to propagate in quantity. It is an obvious advantage to the gardener to short-circuit the process by being able to propagate from material made available by raisers and fellow enthusiasts.

While grafting is necessary for a few hard-to-root recalcitrants, the general proposition that a magnolia on its own roots is to be preferred to one with roots on permanent loan is readily seen to be true. A modest experiment (now into its seventh season) to determine whether subsequent development is better from cutting-raised or grafted plants strongly indicates that while grafted plants develop more rapidly initially from a strong host root system they are overhauled in terms of health and vigour by own-root plants. Cutting-raised plants of 'Elisabeth' (*acuminata* × *denudata*), 'Spectrum' (*liliflora* × *sprengeri diva*) and the Greshams: 'Frank Gladney', 'Tina Durio', 'Darrel Dean' and 'Pink Goblet', grown side by side with grafted siblings have so far generally made more robust plants. Damage recovery at or below ground level is a further advantage. There is no facility for suckers; a 3m (10ft) tree of 'Elisabeth', girdled by rabbits, produced regrowth from ground level that achieved 2m (6½ft) in as many years. Time to flowering seems little affected. Trees of 'Star Wars' (*campbellii* × *liliflora*) and 'Galaxy' (*liliflora* × *sprengeri diva*) from 1984 cuttings flowered in 1989, their fifth season.

Many excellent magnolias such as these can be rooted without special facilities, by the simple conventional method of using polythene and bottom heat with semi-ripe summer cuttings. While mist has certain advantages it is by no means essential, contrary to assertions in some of the literature. Apart from rooting, a significant hurdle is to bring the rooted plants through their first period of dormancy when food reserves are generally inadequate to sustain them. If the following principles and procedures are followed the chances of success are high and the rewards worthwhile.

The cutting

A 'semi-ripe' state of growth is difficult to define. The base of the cutting should be fresh and firm rather than soft or sappy. The earlier the date the cutting is taken the better, to allow a strong root system to develop prior to dormancy. This depends to a degree on the weather but if cuttings can be taken before May is out they stand an infinitely better chance of success in overwintering than those taken later, say into July. However the state of the wood is the key, not the calendar.

Cuttings should be from 10-20cm (4-8in) long, and may be taken either nodally or with a heel. The latter is preferable if they are a little stout and pithy. On the whole shoots on the thinner side are to be preferred as they seem to root more readily. The theory is that the thinner stems require less carbohydrate for respiration and more is available for root growth. Juvenility also seems to affect rootability; cuttings from non-flowering shoots and young plants appear to give a better return.

Remove the soft growth tip as it is prone to rot off. Retain three leaves for preference though two may be adequate. Shortening the length facilitates handling.

Wounding the cutting at the base seems to enhance quality and quantity of the root system, although the reason is not clear. Better water uptake and improved callousing have been suggested, although in practice the strongest roots form at the base rather than along the wound. A shallow wound through the bark and into the wood but not penetrating to the pith is beneficial, some 2.5-3.2cm (1-1¼in) long to the base. Hormone rooting compounds will also promote root strength and quantity.

Cuttings should be inserted as shallowly as possible, consistent with their remaining upright in the compost. It is good practice not to insert them beyond the depth of the wound, leaving a small 'church window' visible above the medium. For whatever reason, not only does this seem to lessen the risk of fungal infection, but the portion of the wound remaining visible will give a good clue as to the rate of healthy healing and callous development prior to root formation. Impatient or anxious propagators may need the encouragement this can provide (see Diagram 1).

If cuttings wilt, losses are inevitable. Evidently physiological changes take place following wilting that promote decay. It is thus important to take cuttings fresh; cutting them plumped up in the cool of early morning and transferring them immediately to the propagator is good practice. Having said this, if they need to travel they will, with care, keep fresh wrapped in damp tissue in a suitable container like an insulated picnic cooler. Cuttings kept in this way for over a week in a car boot during a heat wave have successfully rooted.

The environment

The principle is to provide high relative humidity to maintain turgidity until roots are formed while avoiding fungal infection and subsequent decay. It is important to maintain temperature as constant as possible which, under polythene, makes adequate shading essential. The process of increased evaporation from the leaves with a rise in temperature can be limited by shading and reversed by a fine overhead spray, though care must be taken to avoid an overwet compost and a consequent reduction in aeration. Overshading cuts light levels and as cuttings have little stored food, the more light they can be given to photosynthesise to promote root growth, the better. The aim is to provide maximum light without inducing wilting. A balance needs to be achieved; during the summer low light levels are best.

Good aeration in an inert rooting medium is essential to provide oxygen at the base to allow respiration and root initiation. Its composition is important in this respect only and any conventional peat/sharp sand, perlite or bark mixes are suitable. A compost which is effective and also easy to manage for moisture content after rooting and during dormancy is a 50/50 peat/perlite mix by volume.

Small rigid plastic trays about 20×15×5cm (8×6×2in) deep are convenient for small batches and generally easier to manage for moisture and aeration than pots. Ideally, compost temperature should be at approximately 20°-21°C (68°-70°F) and bottom heat is beneficial in speeding rooting; but overheating at the base of the cutting will promote decay.

Do-it-yourself structures to provide the essential characteristics of this environment are simple to build; the small purpose-made propagators available cheaply should also be satisfactory. For the seriously idle, a pot, a polythene bag, an elastic band and a north-facing windowsill are worth a try and not too technically demanding.

Cuttings should be inspected daily and any fallen leaves carefully removed without disturbance. They should root well in 8-10 weeks. If in doubt about the degree of rooting it is better to leave cuttings in the propagator until certain. A gentle tug will give some indication. If roots appear through the drainage holes at the base of the tray, they should be cut away to promote further root branching in the tray.

Aftercare

After rooting the second critical phase is to bring the cuttings successfully through dormancy. For reasons that are not entirely explained, but thought to be due to an insufficient reserve of carbohydrate, cuttings are prone to die during winter dormancy. The shoot is found to be withered and dead while at the same time the tray is full of healthy white roots with nowhere to go.

This state of affairs is more or less guaranteed if the cuttings are

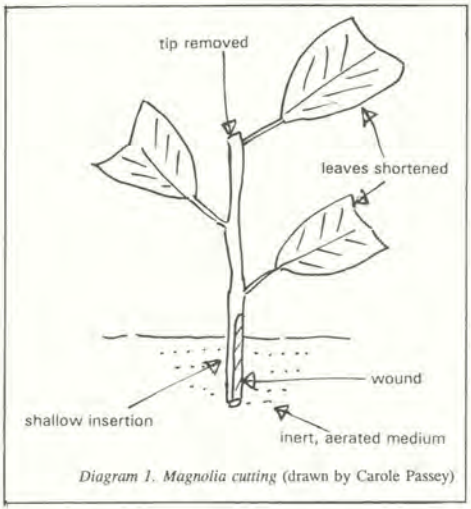


Diagram 1. Magnolia cutting (drawn by Carole Passey)

potted on or disturbed, unless a regime of supplementary lighting and heat is available to ensure continuing development and growth into the winter. Without this extra facility, potting-on should under no circumstances be attempted until the cuttings leaf out in the following spring. Mid-April is probably the best time when they should be in active growth.

After removal from the propagator the cuttings need weaning into the drier atmosphere. Keep moist and shaded; a helpful procedure is to cover them loosely with a very light gauge of polythene (such as that used by dry cleaners). Until September water with a dilute solution of organic fertiliser such as dried blood. Very few will make extension growth.

After leaf fall the trays should be left to dry out and kept almost totally dry throughout dormancy. This is a critical procedure. A light airy and frost-free environment such as a cold greenhouse with suitable frost protection is best. The damp dark chill of the typical British winter is not to their liking.

When potting on (see Fig. 12), the compost should be at relatively low nutrient strength and very well aerated. It is vital not to pot on rooted cuttings too deeply. Transplanting shallowly may mean that the cuttings are not self-supporting and they may need the help of a small stick. The temptation to press them more deeply into the compost to make them self-supporting should be avoided at all costs. It is one of the commonest causes of failure. A potentially stagnant medium in a large pot is a further hazard and overpotting should be avoided. Repotting later will ensure continuing vigorous growth; growth rates can be very rewarding if good root action is maintained.

These procedures can produce results for the amateur. They work best if carried out with a tincture of common sense and a full dose of the kind of attention to detail that goes with wanting a good result.

The advantage for the amateur is that he is not looking for the high success rates that in these days of volume production are necessary for the nurseryman. Twenty-five per cent for the professional is not acceptable; for the amateur one in four is happiness. On that basis everything is worth a try.

Magnolias at Broadleas

Anne Cowdray

When I bought Broadleas in 1946 there was not a magnolia on the place, only a few rhododendrons and a camellia or two, but at least I knew that magnolias could grow here, although greensand, which is the soil at Broadleas, meant nothing to me at that time.

I had learnt to love magnolias before coming here and I brought with me two of the three I had previously planted at Cowdray (unfortunately I left behind possibly the best of the three – a *Magnolia campbellii*, which apparently has flowered magnificently since, but at least it has been much appreciated). Of the two I brought here, *M. sargentiana* var. *robusta* flowered first in 1962 and has covered itself in buds every year since, only to be clobbered by frosts two years out of five. The same with the other plant – *M. campbellii* supposedly, but no one has been able truly to identify it. When I sent flowers up to one of the RHS shows the experts could only say *M. campbellii* – possibly a *mollicomata* cross. It is unlike *M.s. robusta* in that it flowers later, has more petals and is almost white in colour. It first flowered in 1966.

I ordered these three magnolias from Treseders Nursery in Cornwall during the war in the early 1940s. I was told later that these early Asiatic magnolias were difficult to identify as many had cross-pollinated or acquired variations before coming to this country and that Treseder got most of his stock from Caerhays, where many of the earliest importations had found a home.

For the next few years only a few magnolias were introduced as my children and running a school in the house took up most of my time and finance, but two *M.* × *soulangiana*, two *M. wilsonii*, *M.* × *s.* 'Lennei' and *M.* × *s.* 'Alba Superba' were planted during the 1950s. Of those the first *M.* × *soulangiana* still exists and flowers well but the other one was destroyed in a blizzard. One *M. wilsonii* passed away from honey fungus, and the other nearly died in the drought of 1976 but miraculously put up some shoots and now flowers as well as ever. I think *M. wilsonii* is still my favourite of all magnolias. *M.* × *s.* 'Alba Superba' was half destroyed by another tree in a gale but recovered and continues flowering every year.

In the 1960s the following were added: *M. liliiflora* 'Nigra', *M. campbellii* var. *mollicomata*, *M. campbellii* 'Alba', *M.* × *s.* 'Picture', and *M. grandiflora* 'Goliath'. *M.* × *s.* 'Picture' was always a weak plant and passed away, as also *M. campbellii* 'Alba' after eight years. The death of the latter saddened me a lot as I had looked forward to that

flowering. *M. liliiflora* 'Nigra' first flowered in 1989 and *M. mollicomata* and *M. grandiflora* 'Goliath' in 1976. *M. mollicomata* has had an unhappy life. It first flowered the year of the great drought, 1976, but lack of water caused the flowers to shrivel before fully expanding. The next winter it got frosted and lost its top. It has flowered sporadically since, but never well, and I have toyed with the idea of removing it, but so far cannot bring myself to do so.

In the 1970s a few more were added. *M. sprengeri* 'Diva' I acquired from Mr Puddle at Bodnant in 1970, but I was so determined to get a good plant of *M. sprengeri* 'Diva' that in 1977 I purchased one from Burncoose, and also one from Harold Hillier three years later. The Bodnant plant flowered in 1982, but it is disappointing – a very pale pink, although it does cover itself with flower every year. The Hillier plant had one flower last spring (1993) and Burncoose has yet to flower!

M. campbellii 'Charles Raffill' I was given by Eric Savill in 1973. It has taken an incredibly long time to flower . . . it produced two flowers in spring 1993 but is now covered in buds so I have great hopes for this coming spring.

M. sinensis, M. dawsoniana, M. obovata, M. salicifolia and *M. cylindrica* were also added. *M. cylindrica* I have always found a very satisfactory plant. It flowered three years after it was planted here and has never failed to give a good account of itself ever since. The lovely plant of *M. sinensis* was destroyed in the storms of 1989/90. I acquired a third *M. watsonii* (now called *M.* × *wieseneri*) in 1976 – having failed in two previous attempts to grow it. It has flowered but still struggles to get going and I wish I knew what it needs.

At about this time I was given two small plants of *M. globosa* by Nigel Holman who thought they would do well with me, but sadly after struggling for two to three years they both succumbed in that hard winter of 1981/82.

In the early 1980s I acquired *M.* × *s.* 'Lennei Alba' from the Savill Garden. John Bond strongly recommended it to me one day when I was visiting. *M. loebneri* came to me from Burncoose, only to find it was *M. wilsonii*! *M. virginiana (glauca)* was given to me by Harold Hillier, but it did not live long – I fear too tender for my part of the country.

Mr Hillier came to stay with me many years running when having to attend meetings at Westonbirt Arboretum, of which I believe he was a Director. I have many examples of the choice plants he brought me at that time. He was trying to broaden my gardening horizon! But many were the plants that I wanted to acquire that I could find nowhere else but in his nursery. He was a charming and vastly knowledgeable friend.

To continue with the 1980s, *M. sieboldii* and *M.* × *s.* 'Rustica Rubra'

were two other magnolias I acquired at that time. I bought *M.* × *s.* 'Rustica Rubra' because I particularly wanted a red or dark pink – what I got was a pale wishy-washy pink. Which magnolia it is I do not know, but as I cannot deliberately destroy a magnolia, it has been banished to the Woodland Walk.

Then came an exciting development in my magnolia life. In 1985 I stayed with friends in Switzerland above the shore of Lake Lugano – Sir Peter and Lady Smithers. He, and the wonders of his garden, have been acclaimed too often for me to eulogize about them. I only wish that in his search for perfection among his magnolias he did not have to destroy so many of them. They were all so beautiful. 'Lack of space' is his answer. He opened my eyes to much in the plant world, and not only magnolias. During that visit I ordered six magnolias from Mr Eisenhut's nursery – grown from scions taken from Sir Peter's plants. A warning here to amateurs, like myself, who are misled into thinking it is easy to acquire plants from abroad. The first I knew of their arrival in this country was a demand from Customs for such a huge amount of money that I refused to pay. Then I relented as it was not Mr Eisenhut's fault. His prices had yet to come and were quite reasonable. So, I rang Customs, only to find that the plants had been sent back to Switzerland. I quickly wrote a grovelling letter to Mr Eisenhut explaining what had happened. He wrote back that the Customs demand was outrageous and to leave it to him. The final outcome was a bill of half that amount demanded by Customs! Even so, it is an expensive way of buying plants, but at least the following are now safely here at Broadleas: *M.* 'Iolanthe', *M.* 'Sayonara', *M.* 'Garnet', *M. liliiflora* 'O'Neill', *M. denudata* 'Forrest's Pink' and *M.* 'Burgundy'. I consider they all had a setback from so much travelling. *M. liliiflora* 'O'Neill' flowered the next spring, obviously already in bud, as it then did not flower again for three years. *M.* 'Burgundy' flowered in 1987, but a pale pink, so Mr Eisenhut replaced it on a subsequent visit – when I also acquired another *M.* 'Iolanthe' – bringing them back in my car this time. *M.* 'Iolanthe' first flowered in 1991, *M.* 'Garnet' in 1989, *M. denudata* 'Forrest's Pink' in 1988, but sadly last spring (1993), while covered in bud, a tree fell on 'Forrest's Pink' in a gale and smashed it. Surprisingly a shoot has arisen beside the stump and as it is so brave, I am leaving it to see what it will do. *M.* 'Sayonara' has yet to flower. The second *M.* 'Iolanthe' died. It was planted in such a special place that it got forgotten during a drought period!

In 1987 I bought *M.* × *loebneri* 'Merrill', *M.* 'Leonard Messel' and *M. kobus borealis* from Dr Smart, only to learn later that *M. kobus borealis* is 'chiefly known for its lack of flowers'! *M. macrophylla* 'Sara Gladney' came from Mallet Court and was planted down in the Woodland Walk for more shelter for its large leaves, but died two

years later. *M. hypoleuca (obovata)* was given to me by Derek Fraser Jenkins. It is also down in the Woodland Walk and I fear does not get enough sun to do well. The *M.* × *loebneri* hybrids flower wonderfully every year and well deserve their place in the garden. A seedling of my *M.s.* var *robusta* was planted in 1987 and is growing well – now over three metres (9¾ft) high.

M. kobus was given to me about this time by Dr Keith Lister, who has a lovely garden at Porlock Weir. He is a great friend and we are always exchanging plants. He has saved part of the late Norman Hadden's garden nearby and gave me a cutting of *Cornus* × 'Norman Hadden' from that garden. A beautiful plant which covers itself with bracts and then lovely red seed balls every year.

In 1993 I decided I must catch up with some of the modern trends. Honey fungus and the gales of the last five to six years, having caused some deaths, had allowed room for a little judicious renewed plantings. I went to Peter Chappell who is an old friend, whom I knew in his schoolmaster days, when we were both original members of the I.C.S. (International Camellia Society) when Mr Puddle first started it. Sadly Peter is giving up his very good nursery as he cannot find anyone to take it on, but he is continuing to live there and hopefully will continue selling in a small way. I bought from him *M.* 'Star Wars', *M.* 'Vulcan', *M.* 'Yellow Bird' and another *M. macrophylla*, the latter to go again down in the Woodland Walk, where more clearing has been done, so hopefully it will get more sun, but not more wind.

Two years ago I went to Hewtons in Cornwall and bought some liners of *M.* 'Heaven Scent' and *M.* 'Susan' to grow on and sell in our plant centre, but I shall plant one of each of them out in the Dell now that they are large enough. So now in my eighties I can look forward to the excitement of the first flowerings of new young magnolias.

Postscript

1994 was a disaster for magnolias – warm January, and icy winds at the end of February devastated the opening flowers of *M. sargentiana* var. *robusta* and the *M. campbelli* var. *mollicomata*. Of 'Charles Raffill's' 40-50 buds (the first ever) only two finally opened. *M. sprengeri* 'Diva' and then *M. cylindrica* and *M.* 'Iolanthe' flowered well but even they got clobbered by the wind. Only the later flowerers – the soulangianas, wilsoniis and liliifloras were allowed to show their beauty – *M. salicifolia* was taking a year off and was not as good as usual, but *M.* × *wieseneri* had two flowers . . . it seems to be always a shy flowerer. Sadly *M.* × *loebneri* 'Merrill' was killed by hard frost just as it was about to open its hundreds of buds. *M.* 'Burgundy' went on producing a few flowers right into June. This has been one of the most disappointing springs for magnolias at Broadleas that I have ever known.

Fig. 1 *Me-tse-mo 6400m (21,000ft) from the Dinga La (see p.25)*

Fig. 2 *The ponyman's wife at the Mekong bridge (see p.23)*

Fig. 3 *R. proteoides growing at 4200m (13,800ft) below Mt Ab-tzi-che-qiou (see p.27)*

Fig. 4 *Da Xue Shan, a botanically unexplored limestone mountain on the Yunnan/ Sichuan border (see p.31)*

Fig. 5 *Below: R. charitopes* ssp. *tsangpoense at Dundonnell (see p.62)*

Fig. 6 *Right: Guan Kaiyun, leader of the KEG expedition, holding R. beesianum (see p.34)*

Fig. 7 *Opposite top: Camellia jingshajianica near Dukou in Sichuan (see p.50)*

Fig. 8 *Left: New growth on R. mallotum in John Wilks-Jones's garden* *(see p.55)*

Fig. 9 *Below: Michelia figo at Quinta do Palheiro, Madeira* *(see p.58)*

Fig. 10 Camellia nitidissima in the Camellia Forest, Fangchen, S. China (see p.53)
Fig. 11 Below, left: Magolia buds at Broadleas (see p.45)
Fig. 12 Below, right: Magnolia cuttings (30.5.93) ready for potting-on (2.4.94) (see p.44)

Fig. 13 The Maclaren garden and house at Ard-daraich (see p.59)
Fig. 14 R. acrophilum from Mt Mantalingajan in the Philippines (see p.40)

Fig. 15 Above: R. bureavii exhibited by E de Rothschild on 3 May, 1994 (see p. 65)
Fig. 16 Below: R. 'Butterfly' exhibited by R. Kleinwort, prizewinner on 3 May, 1994 (see p.66)

Fig. 17 Above: R. venator exhibited by Swansea City Council, prizewinner on 3 May, 1995 (see p. 65)

Fig. 18 Above: Camellia 'Nuccio's Jewel' exhibited by E de Rothschild on 12 April, 1994

Fig. 19 Above, right: Camellia 'Margaret Davis', exhibited by A W Simmons

Fig. 20 Below: The Group's Display of late-flowering rhododendrons, Silver Gilt Medal, on 22 June, 1994 (see p.63)

Fig. 21 C F Taylor's prizewinning photograph of R. 'Mrs. Furnival' *(see p.56)*

Camellias in Western China

Maurice Foster

A tiled roof strewn with creepers running down into a tiny mud-walled temple courtyard; glimpses across the wall of a spring forest canopy sweeping down the valley and up the hillside beyond; and lording it in the courtyard two ancient *Camellia reticulata* trees reputed to be 500 years old, one red (Lionhead) and the other pink and both in glorious flower in the morning sunshine. The precincts of this small temple in the hills west of Kunming provided an early glimpse of the camellias of western China for a party of (mainly) Australians beginning a three week tour after the *Camellia chrysantha* conference in Nanning. Our main destination was the Jinsha river valley area around the upper Yangtse in NW Yunnan and southern Sichuan. Guide and host was Guan Guiyan, assistant Director of the Kunming Institute of Botany and botanist Madam Xia was the accompanying expert on camellias. A number of new species of camellia have been described recently by Professor Chang Hongda and many are to be found in this region. The principal areas explored were in Huaping county, Yunnan, and Huili, Huidong, Yangbian and Dukou in Szechuan.

En route, Zixi mountain, near Chuxiong on the Kunming-Dali road and well known to many travellers in Yunnan, is home to wild *Camellia reticulata* and now the location for a collection of its many garden forms. The forested hills rise to some 2400m (7,870ft) and are also a prime location for an abundance of 3-4m (10-13ft) bushes of *C. crassipes*. This is very similar to *C. forrestii* with myriad small white flowers and small leaves on bushy, arching growth. It grows with *C. yunnanensis* and the closely related *C. trichocarpa*. The white petals of *C. yunnanensis* reflex slightly at maturity to emphasise a bold spreading brush of yellow stamens. The trunks are a soft fawn, smooth and sinuous. A similar species found on the Kunming-Dali road was *C. henryana*. It differs in flowering very much earlier than *C. yunnanensis*, being in full flower in November. Both are scented. There was a rich complement of companion plants including the low-growing *Michelia yunnanensis* and the uncommon *Craibiodendron yunnanense*.

In complete contrast to Zixi mountain, which commands a view of a long succession of wooded ridges rolling to the west and enjoys abundant rainfall, the party visited a small mining village in Sichuan northeast of the busy industrial town of Dukou straddling the Yangtse. The village squatted on the edge of an industrial valley

ringed by dry hills. It was an unpromising situation for a rare camellia species; but the north-facing relatively shaded gullies on the free draining shaly soil at around 1650m (5,400ft) concealed scattered groups of *C. jingshajianica* (see Fig. 7) growing in the ubiquitous Dodonea scrub with *Pinus yunnanensis* and *Lithocarpus* sp. This was a shrub up to 4m (13ft) with flowers varying in both size and shape. Some were small and tubular with prominent yellow stamens. Others were significantly larger, varying from pale cold pink to almost cherry red. The largest flower seen was some 10cm (4in) across. Habit also varied, but most plants had strongly ascending branches, bearing finely serrate leaves with a dark matt upper surface and glabrous pale green below. Trunks were smooth and silver-grey.

A further contrast: a north-facing slope above a wide green valley with a winding river near Shuanping yielded two more interesting species – *C. huiliensis* and *C. minor*. The differences between the two were not marked. Both were bushy, dense and compact to some 1.5m (4.9ft). All plants appeared exceptionally free flowering, some bearing an umbrella of flower buds at the end of every short shoot. The flowers were highly distinctive; pink, but with strong and unusual salmon/coral overtones. The colour, habit and free-flowering qualities would appear to have great potential for hybridising, particularly in the warm temperate zones of Australia and New Zealand. The population was again on a free-draining steep rocky slope, this time at an altitude of 1300m (4,270ft).

C. bailinshanica and *C. pentapetala* which were also found in Sichuan, at Guoshent were also two species that were not noticeably different in major respects. They grew in shady thickets, where an occasional *Acer paxii* was found. Flowers varied in both cases from pink to an excellent clear red, probably the most striking colour seen.

C. pitardii was the most widespread species encountered, with its two varieties, *C.p* var. *pitardii* and *C.p* var. *yunnanica*. At Hongyun Xiang, south of the town of Huili there was a typical habitat for the former in *Pinus yunnanensis* scrub on dry hillsides at 2200m (7,218ft). Remarkably for a species normally considered frost sensitive, this species was also found north of Huili on the Longzhoushan, a relatively isolated mountain, where it was frequent at 2400m (7,870ft) and found as high as a cold 3200m (10,500ft) on an exposed open slope. At this altitude in the dark rhododendron forest frost was still in the ground to a depth of about 5cm (2in) in the middle of a sunny afternoon. Typically this species comprised shrubs up to 2.5m (8¼ft) with a generally bushy habit. Flowers were variable in colour and shape but for the most part were a charming pale rose pink with broad petals and prominent stamens. Some retained at the edges the

deeper red mottling of the bud colour, after the style of *Rosa rubrotincta*.

The same species was also found near the village of Luchiang, also south of Huili, on the so-called Camellia Mountain, where it made up an estimated 85 per cent of a mixed population with *C. saluenensis* and hybrids between the two. Few plants were more than 1m (3¼ft) high, having been 'pruned' over the years by villagers picking armfuls of flowers for their spring festivities. Vases of the most beautiful blooms graced the counters of shops in the towns. The plants seemed to thrive on the treatment and were frequent in a long shaded gully running right down the north side of the mountain, with prolific natural regeneration throughout. Flower colours were near-white to deep rose and for beauty vied with *Primula malacoides* which carpeted the open forest areas and paddy bunds in vast numbers. *C. pitardii* var. *yunnanica* had larger flowers and foliage. This was found later in Wuding county, Yunnan with leaves as large as those of *C. reticulata* up to some 12-20cm (4¾-7¾in) long.

Beyond Luchiang, on the road south into Yunnan an extensive population of pure *C. saluenensis* was a magnificent spectacle on a wooded rocky knoll, spilling down into a gully at about 1800m (5,900ft). There was little shade in the sparse *Pinus yunnanensis* scrub, but the plants frequented the slightly cooler and less dry north-facing slopes. The average height was about 2m (6½ft), with the tallest plant seen at 2.5m (8¼ft). Regeneration was extensive. Most flowers were tinted pink; some were almost white, but none absolutely pure white. Some were particularly attractive, flatter and less tubular in style, the finest probably slightly smaller in size, with a peach pink flush on the petal reverse and fading to almost white.

Other specimens were found that did not appear to fit species already named and Madam Xia took these away for further identification. In all some 15 species were seen; and no doubt among Chinese botanists discussion of specific definition and taxonomy will continue.

The final find, seen from the road on the return journey to Kunming, was an excellent specimen of the wild rose-pink *C. reticulata*. This was semi-double and quite superior to the Forrest introduction from Tengchong, the *locus classicus* of the species. Such a wild ancestor was the original starting point for the development of one of China's most famous traditional flowers and a fitting conclusion to the visit was a return to the Golden Temple Gardens in Kunming where an extensive collection of the cultivated forms was in glorious flower.

The International Symposium on 'Camellia chrysantha' 8-11 January, 1994

Mayda Reynolds

The Symposium, at Nanning, was organised by the Guangxi Association for Science and Technology. Its purpose was to exchange ideas and experiences regarding the cultivation and propagation of the yellow *Camellia chrysantha* and its use in hybridisation. Invitations to participate were sent to members of the International Camellia Society and the Japan Camellia Society and delegates from Australia, New Zealand, the USA, the Channel Islands and the United Kingdom attended the symposium.

Camellia chrysantha was first discovered in Fangcheng County, Guangxi in 1933 but it was in the 1960s that horticulturists worldwide became interested in using yellow camellias in their camellia breeding programmes. Twenty species have been identified and most have been found in south-west Guangxi which is south of the Tropic of Cancer. The flowers are small, *C. chrysantha* bearing the largest, and they are of a beautiful golden colour, waxy in appearance and with large, deeply veined leaves. It has been established that 'chrysantha' is a synonym for 'nitidissima' and according to the International Camellia Register the correct name is *Camellia nitidissima*. (See T.J. Savige, 'Recent changes in the botanical status of some Camellia species', in *Rhododendrons with Camellias and Magnolias*, 1994, No. 46, pp. 44-7.)

The first morning, over one hundred delegates were seated by 8 a.m. when we were warmly welcomed by the Mayor of Nanning. Chinese and overseas officials gave speeches after which came the photo call and all delegates and officials assembled at the entrance to record this prestigious event. We were presented with packets of Golden Tea – tea made from the leaves of the yellow camellia and said to have excellent properties for alleviating symptoms of cancer, arteriosclerosis and other ailments. Both morning and afternoon sessions on that day were devoted to scientific lectures (see below).

In the evening we attended a 'Welcome Reception' in the hotel and what a reception it was! Tables were arranged around the sides of the large room with an enormous buffet table in the centre, laden with mouth-watering delicacies and fruits.

The following morning's lectures started at 8 a.m. and the session was concluded by lunch time. We found all the lectures of great interest and no doubt the pooling of information will be of immense help to all camellia hybridists.

Lunchtime was enlivened by some karaoke singing and then we travelled by coach to the garden of the Guangxi Academy of Forestry, which was really a plantation of camellia species, rows of trees of similar height but different forms including *C. grissii, C. longicaudata, C. semiserrata* and *C. crapnelliana.* We were then taken to the Nanning White Dragon Park, interesting for its lush planting by a lake and general redevelopment.

An all-day excursion was arranged for the next day, to take us to 'Fangcheng Yellow Camellia Preservation Area'. This was a great thrill, at last we could see the yellow camellia growing in its native habitat. We travelled by seven minibuses as the road would not be suitable for coaches. We had outriders, front and rear, to accompany us and we caused some excitement as we sped through a remote village. We had a comfort stop at Fangcheng where banners proclaimed 'Welcome to the ICCS'. It was good to stretch our legs but soon we were on our way again. We turned off the main road and eventually the secondary road became little more than a track and we bounced along until we came to a clearing, in the middle of nowhere it would seem, but there was a reception hall and welcoming banners and there was much excitement as we disembarked. A yellow camellia growing in a large pot by the entrance to the hall attracted a crowd of photographers. We ate our packed lunch and set off along the track to the wooded area where the yellow camellia grows. It was very hot and humid. We walked along narrow ridges over paddy fields baked hard in the hot sun. Eventually we reached the forest; it was dense and we had to scramble through, moving branches to clear a way, but there were the wonderful camellias, quite lanky plants pushing their way through the undergrowth to reach the light, the yellow flowers, glowing, almost luminous (see Fig. 10).

Two television crews, one from Nanning and one from Beijing, recorded our visit and they were particularly interested to see people from other countries, including an octogenarian, travelling so far just to see the yellow camellia. The Chinese camellia enthusiasts refer to the yellow camellia as the Queen of Camellia and Giant Panda and they were delighted to know we shared their high regard for this rare plant. It was an exhausting day but all agreed it had been a worthwhile excursion.

On our last day in Nanning a visit was made to the Xinzhu Nursery and here were displayed yellow camellias growing under controlled conditions. A *Camellia nitidissima* garden has been established and over 30,000 plants have been propagated from the 20 species. This is the centre for the scientific research programme.

At night, the closing ceremony and banquet brought the symposium to an end. There were many speeches, the symposium was deemed a great success and we hope to continue the friendships formed during our stay in Nanning. Indeed, at least two Chinese professors hope to attend the International Camellia Society Congress in Jersey, Channel Islands, 30 March–4 April 1995.

Lecture list

PROF. CHEN JUNYU (Beijing Forestry University) 'Twenty years' breeding research on yellow Camellias.' (The achievements, problems and prospects of research work in China.)

YAMAGUCHI TADAO (Japan) 'Study on breeding methods of F *Camellia Chrysantha*.'

DR CLIFFORD PARKES (USA) 'Taxonomic problems in the genus Camellia.'

ZHAO RUIFENG 'Investigation on the ecological environment of Guangxi *Camellia nitidissima*'.

MIYAJIMA IKUO (Japan) 'Flower colours and pigments in *Camellia chrysantha* and its F Hybrids.'

PROF. CHENG JINSHUI 'Preliminary studies on another culture of *Camellia petelottii* in vitro.'

PROF. PENG YANHUA 'The contents ABA in embryogenic and non-embryogenic calli and effect of ABA on somatic embryogenesis of *camellia chrysantha*.'

PROF. YE CHUANGXING 'A systemic study on *Camellia* Sect. *chrysantha* Chang.'

PROF LU TIANLING 'Combination of micropropagation and conventional propagation for *Camellia nitidissima* Chi'.

DR HAKADO NAOTOSHI (Japan) 'Study on propagation of hybrid of *Camellia japonica* and *Camellia chrysantha* by embryo culture.'

PROF. LI XIANG DONG 'A preliminary study of Jin-Hua-Cha in Fangchen.'

WILLIAM ACKERMAN (USA) (Read by HERBERT SHORT.) 'A different approach in the hybridisation of *Camellia nitidissima*.'

BAI WENLI 'Somatic melosis found in the anther callus of Golden Camellia'.

MS XIA LIFANG 'Studies on cross-breeding of camellias.'

Rhododendron and Magnolia Notes

Rhododendron citriniflorum var. ***horaeum***

Within our family this rhododendron rejoices in the pet name of 'the marmalade flower' by virtue of its remarkable colour.

Discovered by Forrest in 1921 in SE Xiang it was named *R. horaeum* (beautiful). Later, it was determined first as a ssp., under which this particular specimen has been grown, then more recently as a var. of *R. citriniflorum*. As a plant it is very distinct with its stocky growth and old leaf scales (perulae) retained from previous years. It is uncommon in cultivation and not very easy to propagate. However, the generosity between friends in the gifting of plants and propagating material is well known and so it was that this species came to me.

The exhibit was a special personal triumph (see front cover). Having grown this species and a lot of others for very many years, it was only my second venture in showing and my first ever first prize. To reach Vincent Square it travelled on tissue paper in a shoe box as my cabin baggage for the flight from Edinburgh. (As an airport security inspector once said 'It is remarkable what some people have in their luggage!')

To see an uncommon rhododendron or to show one to others is always a delight, but in this case all would have been in vain without the kindness and help of the stewards in attendance before the show. To grow successfully is one thing to show is quite another. To the stewards my thanks.

R.H.L. Jack

Rhododendron mallotum

This rhododendron, found in 1914 by Kingdon Ward in NE Upper Burma, is one of my favourites. For each of the 20 years that I have been growing it, the plant has produced incomparable foliage, as one would expect from a member of the Haematodes subseries of the series Neriiflorum, especially in the young stage shown in the photograph (see Fig. 8) (taken on 21 May, 1994, on 200 ASA Kodak Gold II with a Nikon F and 80-200mm Zoom-Nikkor). This species reaches a height of 5m (16½ft), with leaves up to 18cm (7in) in length.

When living in Conwy I couldn't see any rhododendrons from the house, but since moving to Beaumaris I can see from inside the

house all the rhododendrons transferred to the small L-shaped garden. *R. mallotum* can be seen from the drawing-room, and its young foliage seems to absorb the late afternoon sunlight and glow against the background of a stone wall 4m (13ft) high, covered with Virginia creeper and in the shade at that time of day. The erect fertile fronds of a nearby *Osmunda regalis*, which I have raised from spores and which associates well with *R. mallotum*, catch the sunlight in a similar way.

The woolly texture is gradually lost on the upper surface of the leaves, but is retained on the underside and leaf stalks, the colour slowly becoming a rich cinnamon-red. My plant has not yet flowered. It may do so next year, in March or April, producing trusses of about 14 dark crimson flowers. Even if it were never to flower, this plant would grace the garden with the beauty of its foliage; flowers would be a bonus, enabling me to hand-pollinate them with a view to producing more of this wonderful plant.

JOHN WILKS-JONES

Rhododendron 'Mrs Furnival'

I had been searching for this plant for some time and finally obtained a five-year-old specimen from Bridgemere Garden World. I have planted the rhododendron adjacent to 'Mrs G.W. Leak', another well-known and highly rated blotched hybrid. I have found the flowers an ideal subject for photography (see Fig 21).

The photograph was taken in the morning light on a cloudy day with a Minolta SRT 101, Tamron lens 75-250 using macro facility.

C. F. TAYLOR

The Flowering of Magnolia species

One of the vernacular names in China for *Ginkgo biloba* evidently translates as the 'Father/grandson tree'. If the father plants a seedling tree, its fruit will be enjoyed only by his grandson some 40-50 years later. Like *Ginkgo biloba, Magnolia campbellii*, and to a lesser extent its subspecies *mollicomata*, and other similar Asiatic tree species also have a reputation for prolonged adolescence; shy in the extreme, a bit touchy and difficult, and needing lots of attention.

The Chinese have now bred forms of *Ginkgo biloba* that will fruit some three years after grafting with a consequent and unsurprising increase in the numbers planted. The parallel with Asiatic tree magnolias should be exact; but there is little on record specifying the grafting-to-flowering times of the best magnolia forms. The general perception remains of trees that are planted for posterity. This probably inhibits gardeners, normally appreciative of the need to plant only the best, from planting what are without doubt the most spectacular flowering trees for temperate conditions.

The following notes are based on experience in Kent and Surrey and can be taken as reasonably typical of expectations for the south of England as a whole. It will be appreciated that since 1985 the climate has revealed most of its extreme tendencies, including the great gale, the great drought (with hose bans) and the destructive late frosts of 1989. In most cases flowers were lost only in 1994 when a cold spell in February followed the false promise of a mild January.

(G = Grafting date; P = planting date; F = flowering date)

M.campbellii alba 'Ethel Hillier': 1984(G); 1986(P); 1992(F).
Drought stress and some 1989 frost bark split may have contributed to bringing flowering forward. It carried 107 flower buds in 1994.

M.c. alba (New Zealand form): 1985(G); 1986(P); 1994(F). This is a large-leaved selection which bore 50 buds in its initial flowering.

M.c. 'Borde Hill': 1987(G); 1988(P); 1994(F). Carried an initial 43 buds.

M.c. 'Betty Jessel': 1982(G); 1988(P); 1994(F). 2 initial buds. The parent seedling from a Darjeeling tree took 23 years to attain florescence. Delayed planting of the graft may have affected initial flowering.

M. 'Charles Raffill' (*campbellii* × *mollicomata*): 1985(G); 1986(P); 1993(F).

M. 'Mark Jury' ('Lanarth'? × *sargentiana robusta*): 1987(G); 1989(P); 1992(F). 2 initial buds. This was a New Zealand graft and probably benefited from the 'two seasons-in-one' effect and the fact that it appeared to be grafted on a *M.* × *soulangiana* understock.

M. dawsoniana 'Clark's Variety': 1988(G); 1989(P); 1993(F).

M. 'Albatross' (*cylindrica* × ?'Peter Veitch'): 1987(G);' 1989(P); 1994(F).
8 initial buds.

M. 'Caerhays Belle' (*sargentiana robusta* × *sprengeri diva*): 1988(G); 1989(P); 1994(F).
16 initial buds.

M. sargentiana robusta (dark form): 1979(G); 1981(P); 1987(F).

MAURICE FOSTER

Michelia figo

Michelia is distinguished by bearing its flowers in clusters, both terminally and crowded into the axils of its leaves, whereas those of Magnolia are terminal and usually solitary. Another distinguishing feature of Michelia is the stalked gynoecium which, among temperate magnolias, is peculiar only to *Magnolia nitida*.

Michelia figo, formerly known as *Magnolia fuscata*, the Port Wine Magnolia or Banana Shrub, owes its name to the curious aroma from its small pink to purplish-yellow flowers. This species from south-eastern China is more at home in the warm south-facing gardens of the French and Italian Rivieras, where it grows as a large multi-stemmed shrub up to 6m (19½ft) in height. The leathery leaves are narrowly oval in shape (up to 10cm/4in long by 5cm/2in wide.) The flowers, creamy yellow, edged with purple and up to 4cm (1½in) across, are extremely fragrant (see Fig. 9).

The photograph is of *Michelia figo* growing in the garden of the Quinta Do Palheiro Ferreiro situated on the Island of Madeira. This wellknown Madeiran garden is located at an altitude of about 500m(1,640ft) and has an average minimum yearly temperature of about 10°C (50°F) and an average annual rainfall of about 1.53m (5ft). These conditions obviously suit *Michelia figo* which was in full flower towards the end of April, the shrub being about 2m (6½ft) in height by about 1.5m (5ft) wide, and growing in a rich red-brown volcanic soil.

GEORGE B. HARGREAVES

The Rhododendron Group Tour of Scotland 6-12 May, 1994

HUGH R. DINGLE

Past primrose-studded banks and mountains piebald with snow, a coach bore about three dozen members of the Group into the Highlands. Following a rainstorm in Glencoe, the sun emerged during our visit to Ard-daraich, Lady Edith Maclaren's garden (once Constance Spry's holiday home), at Ardgour, 14.5km (9 miles) south of Fort William (see Fig 13). Lady Edith started developing the garden in 1971 (see *Rhododendrons with Magnolias and Camellias* 1984/5, pp.11-13). The house nestles against a hillside with a glorious view over Loch Linnhe. To the south of the house, in a colourful planting of trees and shrubs, were *R. glaucophyllum* 'Branklyn' with a particularly good truss, *R. charitopes* and the *campylogynum* × *luteiflorum* cross of which Mr Maclaren is particularly fond (plants are for sale in the Nursery).

Underplanting included fritillaries, erythroniums and anemones in full flower; *A. nemorosa* 'Flore Pleno' was particularly appealing. Across the road is the Winter Garden where many of the important Acer and Sorbus collections are planted. One of many rhododendrons was *R.* 'Wee Bee (Not Too Bee)', a very pretty pink and cream dwarf, smothered in flower.

The Maclarens' hospitality was overwhelming, and we expressed our appreciation to Lady Edith and her family with a gift of *R. elliottii*, before leaving for Inverness.

Two brilliant days of sunshine followed, and we spent the first of these at Blackhills, by Elgin, where rhododendrons were first planted by Thomas North Christie in 1918. In 1939 the late Lt Col F. R. S. Balfour had made notes on Western Highland Rhododendrons (16 from Blackhills), and these were published in *The Rhododendron Year Book* 1946, pp.32-4. Thomas died in 1938 and the neglect of years had to be overcome by Mr Sylvester Christie, Thomas' nephew, who took over the garden in 1953. His 1968 description records the cultivation of the Regius Keeper at the Royal Botanic Garden, Edinburgh, alongside other species! (*The Rhododendron and Camellia Year Book* 1968, No. 22, pp.22-31).

The third generation of gardeners at Blackhills, Mr John Christie, welcomed us on that lovely morning. He told us that a foot of snow had fallen on the night of 8 April, toppling giant rhododendrons and disbranching trees. Moreover, 1994 has produced little flower from the grander species. Certainly a number of this awesome collection of rhododendron species were laid out for our inspection rather too literally. Mr Christie is a 'species man', but he waxed poetic before the silk-encased limbs of a mighty *R.* 'Shilsonii'. Our morning walk took us to the Pond, passing a 9m (30ft) *Chrysolepis chrysophylla*, the tallest in Great Britain. We saw *R. vialii*, of the Azaleastrum Section, and a pretty *callimorphum*. Mr Christie showed us how he nips out the central growth buds of *R. campanulatum* ssp. *aeruginosum*, to obtain a better show of young blue foliage. Nearby, *R. wightii* and *thomsonii* atoned for the failure of 'big-leaf' flowering. A massive *R. hunnewellianum*, badly damaged by a huge toppled *floribundum*, was able to show off its narrow leaves with their thick white indumentum. *R. concinnum*, a prizewinner at Helensburgh the previous day, had an unusually compact truss. *R. trichocladum* (Rock 27) hung its greenish yellow flowers in twos and threes, and *sanguineum* (Rock 106), carried straw yellow flowers, the lobe margins flushed pink. After an excellent al fresco lunch, we set off for the Warren via a greenhouse filled with trays of seedlings from Mr Christie's Chinese and Vietnamese collections. We passed a pair of *Picea breweriana* and many a silent big-leaf. *R. basilicum* and its natural hybrids were prominent. *R. thomsonii* again, with the sun shining through it, three *montroseanum* with those noble long leaves, two huge *mallotum* and a massive *praestans*. Here, *R. roxieanum* 'Oreonastes Group' is 3.6m (12ft) tall (planted 1931). Taliensia abound: memories remain of the excellent habit of *R. globigerum* (F 26749) now *alutaceum* var. *alutaceum*, and the distinctive aroma of the *alutaceum* var. *iodes*, a nicely furnished plant with long narrow pointed leaves.

This was a wonderful visit to a garden of the greatest importance and distinction, and we expressed our thanks to Mr Christie with a plant of *Magnolia denudata*.

The next day, a very different garden: Allangrange, at Munlochy on the Black Isle, the home of Major and Mrs Allan Cameron; Mrs Elizabeth Cameron, the renowned botanical watercolourist, joined her husband in showing us round. A red kite circled regally above us while we strolled the terraces.

Major Cameron showed us a number of his handsome *R. barbatum*, about 1m (3¼ft) tall, collected in Sikkim. In the Valley Garden a warm woodland scent mixed with the fragrance of *R.* 'Naomi', and a pair of *R.* 'Hotei' shone on a bank. An astounding *R. glischrum* ssp. *rude*, displayed leaf-top 'designer stubble' setae and pink bells

hanging on crimson pedicels. *R. cinnabarinum* ssp. *xanthocodon* 'Purpurellum' and a good *orbiculare*, completed an enviable trio. We passed two of Major Cameron's *R. lanatum* seedlings before turning back, now flanked by drifts of primulas: *poissonii, alpicola* and *florindae*. From such a garden one regrets moving indoors, but here we had the pleasure of visiting Mrs Cameron's gallery. One of her paintings, of *R. niveum,* was featured on the front cover of *Rhododendrons with Camellias and Magnolias* 1990, complementing her superbly practical 'How I paint rhododendrons' (*ibid.* pp.43-4).

We left refreshed by Mrs Cameron's coffee, the lucky ones carefully carrying a rolled up Cameron print. We thanked Major and Mrs Cameron, and gave them a plant of *R. spinuliferum*.

We lunched at Strathpeffer, Valerie Archibold's seamless organization utterly beyond reproach, as ever, and went on to Dundonnell.

The following morning: Inverewe! A jewel in the crown of the National Trust for Scotland. We were welcomed by Mr Peter Clough and shown round by Mr Clive Murray, who outlined the continuing battle with Powdery Mildew (see *Rhododendrons with Camellias and Magnolias* 1990, No.42, pp.55-7). We passed the rather small-leafed *R. falconeri*, in stupendous flower, which Mr Clough was concerned for in 1986 (see *Rhododendrons with Camellias and Magnolias* 1986-7, p.21). Two sumptuous magnolias, *M. sprengeri* var. 'Diva' and *M. cylindrica* were in full flower, but, as elsewhere, big-leaf rhododendrons were being shy, and members were denied the pleasure of identification from an eglandular pedicel or a rufous-tomentose ovary! *R. triflorum* and *auritum* showed fine bark colour, and one can hardly recall seeing *R. bureavii* with finer trusses. *R. campylocarpum,* well-scented *johnstoneanum, tephropeplum, burmanicum* and *charitopes* ssp. *tsangpoense* all impressed. Of the *R. arboreum* ssp. *zeylanicum* in the Peace Plot, Lt Col Balfour noted in the 1946 Year Book (see above) that it was raised at Arduaine (presumably in the same seed-pan as their own speciments). We reluctantly accepted that *R. formosum* var. *inequale* in flower and the sight of *Quercus cerris* 'Variegata' in full leaf are for the summer visitor. After lunch we thanked Mr Clough, and added one rhododendron, *R. wongii*, to the Inverewe battalions.

That afternoon we took tea at the House of Gruinard with the Hon Mrs Maclay. The house is on the sea shore in an unparalleled position overlooking Gruinard Bay. A path leads to a secret garden, a rectangular plot wonderfully cared for by Fiona Clark. Full of plants, flowers, fruit and vegetables, it is, as Tom Spring-Smyth said in thanking Mrs Maclay, the garden we all dreamt of having when we were children: few of us can have realised our dream so completely.

Next morning, in brilliant sunshine, we went to Dundonnell House to be greeted by Mr Roger. 'Go to the Caithness RSPB shop',

said Mr Roger, 'to buy the best anti-midge; or wipe your skin with a leaf of *Choisya ternata*'; thankfully, a light breeze kept the midges away.

Solid yew hedges and paths divide the garden into rectangles, all filled with trees and shrubs. There was a 3,000-year-old yew, and an *Ilex aquifolium*, symbol of the Mackenzie clan, planted in 1640. We admired a beautiful *R. bureavioides*, a *glaucophyllum* var. *tubiforme* with its long straight style, and *charitopes* ssp. *tsangpoense* (see Fig. 5). R. 'President Roosevelt', that snappy dresser of the rhododendron world, was challenging the peacocks. After delicious shortbread and coffee we strolled in the arboretum or to the waterfall. We thanked Mr Roger for inviting us to his lovely garden in the valley of Little Loch Broom, a setting of incomparable beauty.

Our final visit, after lunch, was to Leckmelm Gardens near Ullapool, the property of Mr and Mrs Peter Troughton, where Mr Archie Gibson welcomed us. Here are some very big trees, some dating back to the 1870s, including a craggy-trunked *Chamaecyparis lawsoniana* 'Wisselii' of record height, a golden green *C. l.* 'Westermannii', and the biggest *Kalopanax septemlobus* var. *maximowiczii* in Europe. On the lawns by Loch Broom we found a Sorbus collection including an elegant *S. sitchensis* collected by Roy Lancaster.

Among the rhododendrons was a *niveum* with the finest of trusses, and this made a fitting note on which to end the Tour. We departed after presenting a *campanulatum*.

That evening, on the eve of our return to the real world, Cynthia Postan expressed our heartfelt thanks to Valerie Archibold who had so expertly organised our Group Tour that no one even noticed!

The Group Display at Vincent Square

Excitement and considerable satisfaction was felt by the members of the Group when we were awarded a silver-gilt medal for our display of hybrid rhododendrons at the Show on 22-23 June 1994. The Group's Executive Committee had decided some time ago to stage another display at the Horticultural Hall with the purpose of stimulating the public's interest and of gaining some new members. They also wished to demonstrate how wide and decorative is the variety of cultivars flowering in mid-summer.

Ivor Stokes, curator of Clyne Gardens, Swansea, had undertaken to set up the stand, and to him is due much of the credit. Some sixty different varieties of rhododendrons were exhibited, coming from various sources (see Fig. 20).

First, Edmund de Rothschild sent a splendid selection from Exbury by the hand of his head gardener, Douglas Betteridge. Our Chairman, Bruce Archibold (and Valerie), collected some magnificent blooms from the Valley Gardens at Windsor, given by John Bond, the Keeper. Lady Adam Gordon brought a large selection from Hethersett in Surrey, some of which came from members of her Wessex Branch, and more material came from Anne and Edward Boscawen and their garden, High Beeches in West Sussex. From Wakehurst Place came some choice blooms chosen by Mark Flanagan. Ivor himself had very little to bring because of a sudden spell of warm weather: Clyne is a very early garden. But on hearing about this, Dr Robbie Jack of Lanark, flew down from Scotland with no less than 30 hybrids. Because it would have been too cold for the blooms in the luggage hold, he persuaded British Airways to accept them into the cabin. Both the Edinburgh and London staff were most helpful in this unusual situation. The vases were all individually labelled and our Year Book Editor surprised us by her calligraphic skill.

The display exhibited perfectly the amazing range of colour and form possessed by rhododendrons, and especially that they continue to flower right on into late June, well past what is considered to be their usual season. They offer the gardener a whole new dimension of summer flowering shrubs.

Congratulations to Ivor Stokes who arranged the vases, and also to all those who helped with the staging and later manned the stand to answer the large number of questions from the public. To judge by the number of brochures snapped up during the Show, the display attracted considerable attention. VA

The Rhododendron Shows 1994

ANNE BOSCAWEN

The Early Competition (15-16 March) suffered from many late cancellations, but there were still some good exhibits. Fifteen of the 20 classes had entries, but only four had more than three. Very great efforts were made by everyone concerned to put on a good display.

Class 1, for four species, had three strong entries showing nine different species between them. High Beeches won with the best red form of *R. hookeri*, a heavily blotched *R. calophytum*, a very pretty purple-speckled *R. irroratum*, and a very dark red *R. beanianum*. John Fox was second, showing a different form of *R. irroratum*, a nice *R. smithii*, a typical form of *R. sutchuenense* and an interesting yellow *R. eclecteum*. Clyne Gardens were third.

Class 2 for a spray of any species had five entries, and was won by High Beeches, with a very fully flowered spray of *R. calophytum*. This is a new seedling, flowering for the first time. Clyne were second with a nice fresh spray of *R. floccigerum*. A spray entered in this class as *R. sutchuenense* var. *giraldii* was declared NAS. After much consultation with Dr Chamberlain, the judges decided that this plant should be classed as a natural hybrid, and is correctly *R.* × 'Giraldii'. Collectors' notes, etc. also support this view. It would be helpful to 1995 exhibitors if this decision could be published in the 1995 Schedule.

Class 3, one truss of any species was won by John Fox, with *R. smithii*. Clyne were second, with *R. macabeanum* not quite fully out. High Beeches were third, with *R. irroratum*, and John Fox's very fine *R.* × 'Giraldii' was again NAS.

Clyne showed the only two entries in Class 4, and also won Class 5, with a typical *R. barbatum*. High Beeches were second with *R. glischroides*, more distinguished for its foliage than the flower, and Clyne were third with *R. argipeplum*. They also won Class 6 with their *R. macabeanum*. Class 7, for any species of the subsection Fortunea, was won by High Beeches with *R. calophytum*, and John Fox and Clyne followed, both with typical *R. sutchuenense*.

Clyne won Class 8, with *R. floccigerum*, and were also second with *R. beanianum*, the one from High Beeches being perhaps a shade darker, but not so fresh, and with poor foliage. *R. piercei* was shown in this class, and also *R. neriiflorum KW 9263*. High Beeches won

Class 10, with a lovely yellow spray of the FCC form of *R. lutescens*. *R. uvariifolium* (Fox) won Class 10, with *R. ramsdenianum* (Clyne) second.

No one attempted the three hybrid trusses, but Class 14, for any Hybrid Spray, was won by *R.* × 'Nestor' from High Beeches. This is a spectacular and reliable early red hybrid which received the AM in 1969. 'Nestor' also won Class 15, with a rather poor 'Red Admiral' (Fox) second. Class 17 went to an interesting, un-named, *R. arboreum roseum* × *R. fargesii* (Clyne), with a nice, round, shell pink truss, and a very silvery indumentum. John Fox won Class 20 with a spray of 'Bo-Peep'.

Eight exhibitors supported the **Main Rhododendron Show** on 3-4 May 1994, including one from Scotland and one from South Wales. There were three rhododendron stands: from Tittenhurst Park, Starborough/Reuthe, and Coghurst.

Class 1, with the Rothschild Challenge Cup, for eight species, was won by Exbury Gardens (Edmund de Rothschild) showing *R. rothschildii*. Surely a noteworthy event! The exhibit included *R. smirnowii*, *R. orbiculare*, *R. rex*, *R. arboreum*, *R. niveum*, *R. glischrum*, and a very big, well-filled, frilly truss labelled *R. houlstonii*. Sandling Park won Class 2 for any three species, with *R. arboreum*, *R. fortunei*, (very rarely seen) and a neat, unfrilled, much more typical form of *R. houlstonii*, as it is known in gardens. Class 3, with eleven entries, was won by the Sandling Park *R. houlstonii*, with *R. venator*, from Clyne, in second place. *R. venator* is in some ways a difficult plant to show, but this was a nice, typical form (see Fig. 16). Brian Wright's *R. anhweiense* took third.

Class 4, for a spray of any species, went to Exbury, for *R. cinnabarinum* (Concatenans Group). Clyne were second with *R. augustinii*. Sadly, a big spray of *R. bureavii* had travelled very badly, and was unplaced. There were no entries for the Falconera or Grandia classes. In most gardens they were long over. Class 12 for a truss of the Fortunea subsect. was won by the big frilly *R. houlstonii* from Exbury. Clyne took third with *R. decorum*. Class 14 went to Brian Wright, for *R. aberconwayi*, a nice truss with rather poor foliage.

Class 16 was won by the delightful, and interesting, *R. citriniflorum* ssp. *horaeum*, orange tinged with red, shown by Robbie Jack from Lanarkshire (see front cover). The show would be vastly improved if more people managed to exhibit just one or two treasures, even if they have travelled a long way.

Class 17 went to *R. smirnowii* from Exbury, and class 24 to Clyne for *R. cerasinum*. Class 25, for a spray of a deciduous azalea, went to Exbury for a well-presented, typical and attractive, spray of *R. luteum* with *R. vaseyi*, from Stonehurst, second. Class 37, for *R. augustinii*

went to Brian Wright's 'Electra' which was preferred to Exbury's darker, less blue form.

In the hybrid classes, Exbury won Class 50, for eight trusses, with 'Seven Stars', 'Crest', 'Halfdan Lem', 'Beauty of Littleworth', 'Cara Mia', *Yakushimanum* × 'Leo', 'Lem's Cameo', and 'General Sir John du Cane'. Stonehurst were second. Class 51, for three hybrid trusses, went to Holly Lodge, Richmond Park, for 'Queen of Hearts', 'Beauty of Littleworth', and 'Naomi'. Exbury were second, and Clyne third with three red hybrids of *R. griersonianum*, all un-named. There were six entries. Class 52, went to Exbury, for a glorious set of three huge sprays including 'Vienna', 'Queen of Hearts', and 'Seven Stars'. Class 53, for any hybrid truss, attracted eleven entries, and was won by Holly Lodge with 'Luscombei'. J. Dayton was second with 'Naomi', and Sandling third with a very large bloom of 'Queen of Hearts'; 'Hotei' and 'Roza Stevenson' were also shown.

Heaselands won Class 54, for a spray of any hybrid, with 'Butterfly' (see Fig. 17). It is good to see that this important garden is continuing to support the show. Stonehurst were second and third with 'Mount Everest', and 'Memorial Kate Bagg' respectively. Those of us who remember Teddy Bagg will be especially pleased to see this lovely rhododendron, named for his wife, at the Show.

Class 55, for six hybrids raised by or in the garden of the Exhibitor, had only one entry, Exbury. They showed 'Bastion', 'Fred Wynniatt' (another great gardener), 'Crest', 'General Sir John du Cane', 'Naomi, Exbury clone', and *yakushimanum* × 'Leo'.

Class 56, went to a very good truss from Clyne, labelled 'Clyne Kingianum'. This wellknown rhododendron should perhaps be registered as a clone? Class 64 for a hybrid of any species of subsect. Thomsonia other than *R. thomsonii*, was well supported and was won by 'Crest' from Exbury, with 'Memorial Kate Bagg', from Stonehurst second. Class 66 for a hybrid of griersonianum, went to *R. griersonianum* × *R. elliottii*, from Clyne.

It was nice to see a healthy spray of 'Lady Chamberlain' var. 'Oriflamme' shown by Exbury, in Class 72, albeit the only entry. There are signs that the, in some ways, exceedingly trying wet weather will help to discourage the dreaded powdery mildew.

In Class 73, for a Maddenia or Edgworthia hybrid, Clyne had the only two entries, an 'unknown' first, and 'Sesterianum' still in bud, second, and in Class 74, for a spray, Clyne won again, with the same un-named hybrid, and J. Dayton was second, with 'Fragrantissimum'.

In Class 76, for a hybrid from the Triflora subsect., Brian Wright's rather leggy 'Princess Anne' won from a pretty lavender blue 'unknown' with few leaves, shown by J. Dayton. Class 77 went to Brian Wright's 'Chikor', and 79 to a more typical 'Princess Anne' from Exbury. In Class 81, a spray of 'Queen of Hearts' took first for Exbury.

Class 84, for any hybrid grown under glass, went to Sandling for 'Jane Hardy'. A very attractive two-belled truss of *R. johnstoneanum, ciliicalyx* 'Alliance', was unfortunately NAS, as it is an accepted species. 'Cunningham's White' also appeared, somewhat mysteriously, in this class.

Class 91, for any evergreen hybrid azalea, went to 'Iro-hayama', from Exbury, and they also won Class 92, for three sprays, with 'Vuyks Scarlet', 'Louise', and 'Iro-hayama', a lovely group, perfectly fresh, and beautifully shown. Clyne were second and included a nice spray of the snow white 'Kureno-yuki'.

The date of this show, immediately after Bank Holiday, was very difficult for some people; not all of the exhibits were in good condition, and some labels which were very eccentric, or sometimes absent, could be attributed to inadequate time for preparation. The stewards made heroic efforts, but their task is increasingly difficult. There were a great many 'unknowns'. Possibly the Regional Rhododendron Groups could help new exhibitors to sort out and tentatively name some of their material before the Show? The new edition of the *Rhododendron Handbook* should be helpful when it appears. Well-presented, well-labelled exhibits, even if some are the only entry in their class, all add greatly to the interest and colourful appearance of the Show.

We all missed John Fox, but his plants are in safe hands, and we look forward to seeing him exhibiting again, as he surely will. We must be grateful to all those exhibitors, nurserymen, and stewards, who worked so hard to make this important event in the rhododendron year such a success.

The Camellia Shows 1994

Cicely Perring

It seems inevitable that this report on the camellia competitions at the RHS Hall talks about the weather. The camellia display depends heavily upon the right conditions. The summer of 1993 was not good, yet the buds set, the camellias revelled in the moist wet conditions which extended throughout the winter in the south, the warm wet weather carrying on well into 1994 past the Show dates. Camellias were in bloom in profusion in late January, unspoiled by frosts, especially 'Saint Ewe', and even at the end of May there were perfect, exquisite blossoms to be seen. Four full months of blossom and now the cultivars are exploding with new, brilliant, shiny leaves, making a superb backdrop for the summer flowers and foliage to come. In those parts of the country where camellias thrive they are a magnificent addition to any garden.

The Early Show 15-16 March

It was of considerable interest that at the March Show it was possible to distinguish between blooms grown under glass, indicated by a red spot on the name tag, from those (few) grown in the open. This was a successful innovation and one which may persuade more growers to enter the competition. It was noticeable that those blooms grown in the open that were entered stood up to the competition and were of particularly vibrant colour.

Lovely and unusual 'Ville de Nantes' was unplaced but was an exciting exhibit in Class 1. Mr D.R. Strauss took first place. Particularly lovely was his entry 'Nuccio's Gem', a crisp white formal double making a most decorative spray.

Class 2 was enriched by a superb 'Anticipation' exhibited by J. Fox of Crowborough in East Sussex, well supported by Marigold Assinder's showing of 'Cornish Spring' and John Tooby's 'Jane Steptoe', a newcomer to the scene from New Zealand; its beauty should ensure a popular future.

Class 12 produced some wonderful blooms, especially 'Bob Hope' and 'Wildfire', both rich reds, and 'Lovelight', a beautiful white semi-double. Otherwise the whites were generally blemished. The Duke of Devonshire came first and second and D.R. Strauss third.

Class 13 for semi-double cultivars attracted 14 entries of great quality. D.R. Strauss came first with 'Wildfire' and second with 'Guilio Nuccio', the Duke of Devonshire third with 'Bob Hope', and Mr and

Mrs Short fourth with 'Lily Pons'. I was particularly attracted to the 'Spring Sonnet' exhibited by Gerda Flockinger.

In Class 14 there were six entries and the battle between the Duke of Devonshire and D.R. Strauss came to the fore again, with D.R. Strauss taking first and third places and the Duke of Devonshire second place. One interesting aspect of this class was the difference in colour between the bloom of 'Elegans' exhibited by the Duke of Devonshire, which was a lovely soft pink, and that of the bloom exhibited by D.R. Strauss, a much harder colour.

In Class 15 Mr and Mrs Short entered the fray and came fourth with a lovely bloom of 'Nobilissima', a variety which has survived for over 150 years. First place went to the Duke of Devonshire with 'Premier' and second and third to D.R. Strauss with 'Shiro Chan' and 'Elegans'.

Class 16 for rose-formed or formal double cultivars had D.R. Strauss first, second and fourth with the Duke of Devonshire third; in his entry was a lovely bloom of 'Augusto Leal de Gouveia Pinto', a wonderful 'crushed strawberry' colour exhibited to great effect by Edmund de Rothschild in 1990.

It is not easy to produce six blooms as required by Class 18. The Duke of Devonshire came first, but second was Roger Phillips of London with a most creditable entry including a very lovely 'Dr Burnside'.

There were 14 entries in Class 25. D.R. Strauss came first with 'Charles Michael', Mr and Mrs Short second with 'November Pink' and D.R. Strauss third with 'Francis Hanger'.

A lovely fresh bloom of 'St Piran' was exhibited by Marigold Assinder. It was interesting that 'Donation', which was and is so popular, did not figure greatly in the exhibits. Indeed, in Class 26 for any semi-double × *williamsii*, there were only 2 out of 6 entries. The Duke of Devonshire came first with 'Muskoka', a lovely pink striped a deeper pink – a most decorative bloom.

A wonderful bloom of 'Elsie Jury' won first place for the Duke of Devonshire in Class 17, and B.E. Wright came second with 'Anticipation'. Third was the Duke of Devonshire with 'Jury's Yellow' in a very good form. Out of 14 entries, all of high quality, it must have presented a difficult challenge to the judges.

The All-Yellow Species or Hybrid was won by Mrs Waterlow, followed by Mr and Mrs Short and the Duke of Devonshire. There were 4 entries of 'Jury's Yellow'.

It was a great show. Perhaps a shortage of sprays, and not many newcomers. The show is greatly indebted to the Duke of Devonshire and D.R. Strauss, Marigold Assinder, John Tooby and Mr and Mrs Short for their loyal support. The colour of the year was red, with some wonderful strong, vibrant blooms such as 'Mathotiana Rubra', 'Grand Sultan', 'Wildfire', 'Grand Slam', 'Arajishi', 'Midnight', 'Mrs

Charles Cobb', 'Bob Hope', 'Emperor of Russia' and 'Sylvia' – a catalogue of brilliance for all to grow.

The Main Camellia Show
took place on the 12-13 April. More wonderful reds, the March list extended by 'Black Lace', 'Te Deum', 'Lanarth', 'Warrior', 'John's Seedling' and 'Konronkoku'. Again a shortage of sprays, but John Tooby obliged with a lovely spray with 4 blooms of 'Scentsation', Marigold Assinder one of 'Konronkoku', 'Carters Sunburst' and 'Spring Festival', while D. Robertson exhibited a superb spray of 'Inspiration', R. Baker, an unknown cultivar, and John Tooby's 'Jane Steptoe' coming first, second and third in Class 4.

Class 10 demands 12 blooms, one bloom of each to compete for the Leonardslee Bowl, a most coveted award which attracted 10 entries – 120 superb blooms. The 1994 winner was Mrs C. Petherick with a wonderful entry of 'Mrs D.W. Davis', 'Royalty', 'Captain Rawes', 'Te Deum', 'Waterlily', 'Augusto Leal de Gouveia Pinto', 'Elsie Jury', 'Elegant Beauty', 'Anticipation', 'Angel', 'Tomorrow' and 'R.L. Wheeler'. Second came A.H. Hooton and third Edmund de Rothschild, whose entry included a very fine bloom of 'Mathotiana Supreme', and Marigold Assinder, who showed a most beautiful bloom of 'Captain Rawes'. An interesting entry was that of D.R. Strauss, who exhibited 12 white blooms, all grown under glass. Particularly lovely was 'Cinderella', which I hope we shall see again. Congratulations to all who entered this demanding competition.

Class 11 was notable firstly for a lovely fresh bloom of 'Daintiness' in the first-placed exhibit by Edmund de Rothschild and a newcomer exhibited by John Tooby, who took second place. 'Seedling of Garnet Gleam' is a most beautiful rich red which deserves to be promoted. Third came Gerda Flockinger, who exhibited in her entry 'Nagasaki', which showed no white blotching, whereas the 'Nagasaki' exhibited by D. Robertson in the entry in Class 15 was nicely blotched. There were 16 entries in this Class, which was won by Mrs Petherick with 'Edelweiss', and she came fourth with 'Mrs D.W. Davis'. Second came Paulton Square Gardens with 'Yours Truly', and third Mr and Mrs Short with 'Tomorrow Park Hill'.

The remaining classes were well supported, with a very high standard of bloom. Again it was good to be able to distinguish those grown under glass. While there are more entries at the Main Exhibition, it is still indebted to those loyal supporters D.R. Strauss, Edmund de Rothschild, Marigold Assinder, Mr and Mrs Short, John Tooby, A.H. Hooton, Mrs C. Petherick, Mrs B. Waterlow and Gerda Flockinger, whose names come up repeatedly. Without their enthusiasm the camellia world would be the poorer. The awards they won were richly deserved.

What Awards?

Alan Leslie

When considering the plethora of rhododendron cultivars seen in lists and catalogues, the amateur grower may feel understandably uncertain as to what to choose. Which ones will really look as good as the enticing colour pictures? Which will last and perform well in the garden? Various Societies who are concerned wholly or in part with the genus, have award systems designed to help and point the way. The RHS plant awards have undergone a radical revision in the last few years, so now is a timely moment to explain what the Society offers, how its award procedures work, and the consequences this has for rhododendron enthusiasts.

The system divides clearly into two: awards being made either for exhibition value, or for all-round garden merit. A plant may be recognised in both regards and both sorts of award are recommended by a Committee (the Rhododendron and Camellia Committee in this case), whose membership contains individuals with a wide knowledge and experience of the genus. Exhibition awards are made purely upon the examination of material exhibited before the Committee at an RHS Show. Anyone may bring a plant up for exhibition, they need not be a member of any Society or Group.

The exhibition awards are graded, ranging from a Certificate of Preliminary Commendation (usually seen and spoken of in the abbreviated form 'PC'), through the Award of Merit ('AM') to the ultimate accolade of a First Class Certificate ('FCC'). They are all categories of long-standing, instituted in 1931, 1888 and 1859 respectively. Once given, they cannot be taken away and remain part of the historical record, in many cases long after the plant itself is extinct. This is the award ladder that will be familiar to many and is essentially the system that has operated for many years. What is now much more clearly defined is that the awards reflect the Committee's opinion of the plant's value as exhibited, which will usually be as cut material in a vase. It is as good a way as any of putting a marker down on those plants with the 'best' flowers and/or foliage, whatever that may mean in the way of a combination of colour, size, number and conformation (or any other character that contributes to the visual impression).

Such awards should not necessarily be taken as a guide to a plant's likely success in competition, although it may be more than likely that an FCC rhododendron will have many of the characteristics of a successful competition plant. Exhibition, however, in this context, should be seen as having a much wider meaning.

Equally important is the realisation that these exhibition awards cannot tell one anything about the plant's garden value. They can do no more than point to those with potential for garden merit in that they have particularly fine flowers or foliage. For garden value, one must turn to the Award of Garden Merit ('AGM').

The AGM is now the sole award made for this purpose. It is not graded so that there is no attempt to separate the good from the better or the best. Committees are expected to set a high standard and anything equalling or exceeding that standard can be recommended for award. The subtleties of a graded award are satisfying to operate but their significance is only appreciated by a limited group of dedicated individuals. A single award, set at a high standard should be more easily appreciated and understood both by a wider public and by the trade.

Availability is an important criterion for the AGM. A plant put up for its exhibition qualities may be the only one of its kind, although no less meritorious for that, but if the AGM is to have practical value, it must address the question of whether the plant can be obtained. In addition, any AGM plant must show itself to be a reliable performer in cultivation, should be of good constitution, requiring neither specialist conditions nor skilled cultivation. In other words, it must be a first-rate, reliable plant from which the gardener can reasonably expect maximum satisfaction.

AGMs may be awarded by the same Committee responsible for exhibition awards, but plants must undergo a period of assessment before the award is recommended. This may take the form of a trial at Wisley, a visit to one or more good collections or a special round-table discussion drawing upon the rich experience of Committee members. Specialist advice from outside the Committee can also be sought. Plants can be recommended for assessment when first seen by the Committee but they cannot be given an AGM on the spot. Once again, any individual may submit a plant for consideration.

The second edition of the new AGM listings, published in January 1994, contained 72 azaleas, 1 azaleodendron and 243 rhododendrons, still quite a wide choice but narrowing the field for both species and cultivars. At present the list is only that, a plain list – although a general hardiness rating is included – but plans are under consideration to include pertinent descriptions and other relevant information in future editions.

In the past, an AGM system ran in tandem with a graded system of awards made after trial at Wisley. Now, not only have all AGMs made prior to 1992 been rescinded, the graded system of trial awards has also been discontinued, although in this case, the awards made remain part of the historical record. They were based on a 4-rung ladder rising from Commended ('C') and Highly Commended ('HC')

to AM and FCC. To distinguish an AM or FCC made after trial, it is usual to prefix them with an asterisk, eg *AM 1962, and such awards will be found listed in the International Rhododendron Register in that form. Note too that for all awards the year should also be cited.

A further radical departure incorporated in the new AGM is what has become known as the Sunset Act. Uniquely for any RHS award, the new AGM lists will be subject to regular review and if for whatever reason a plant no longer measures up to the stringent standards, it can be removed from the list. This should help to keep the list relevant and up-to-date.

So, if you have a good rhododendron that deserves wider recognition, do bring it up to a Show so that both the Committee (and all the visitors to the Show) can see it. A plant does not need to have been raised by you to be shown, though credit should always be given, when due, to the raiser. Be sure to explain what you see as its good points and if it has proved its garden value with you be sure to inform the Committee of this point. Forms to enter a plant can be filled out on the day concerned or obtained beforehand from the Committee Secretary (Mr David Pycraft) at the RHS Garden at Wisley.

PHOTOGRAPHIC COMPETITION

Once again the judges must thank all those enthusiastic photographers who submitted prints and slides for the competition. The standard is so high that the judges' task is far from easy. This year it was hard to fault the technical excellence of Mr Taylor's entry (see Fig. 21): 'Mrs Furnival' is an old favourite, bred by Anthony Waterer in 1920, AM 1938 & FCC 1948. She owes her elegance to the seed parent, *R.griffithianum* and her hardiness (in the British Isles) to the pollen parent, *R.caucasicum*. For those who like their flowers blotched, Mrs F. is hard to beat and this winning photograph reveals every detail. Mr Wilks-Jones shows us the beauty of the expanding leaves of *R.mallotum* (see Fig. 8), catching the fleeting subtlety of texture and form. Which are the gardens in the mildest parts of this country where Bean tells us *Michelia figo* grows? (see Fig. 9). A native of China, it was introduced in 1789 and he says its 'pear-drop' fragrance will fill a cool greenhouse. Thanks to Dr Hargreaves for letting us see its curious flower, 'yellowish green stained with dull purple'.

PRIZEWINNER: C. F. Taylor, San Remo, Cefn Bychan Road, Pantymwyn, Mold CH7 5EN

Awards for 1994 Rhododendrons, Camellias and Magnolias

The Award of Merit was awarded to the following plants.

Camellia 'Howard Asper' (*reticulata* 'Cornelian' × *japonica* 'Coronation'), 15 March 1994, as a flowering plant for exhibition. Shown from a cold greenhouse. Flowers paeony form with loose, upright petals, to 19cm across, deep purplish pink (Red Group 54B). Raised by Howard Asper (Escondido, California, USA). Exhibited by Dr J.A. Smart, Marwood Hill, Barnstaple, Devon.

Camellia 'Miss Tulare' (*reticulata* 'Crimson Robe' × *japonica*), 15 March 1994, as a flowering plant for exhibition. Shown from a cold greenhouse. Flowers rose form double to full paeony form, up to 14cm across, base of petals deep pink (Red Group 5B) shading to vivid red (Red Group 52A). Raised by M.W. Abramson (Tulare, California, USA). Exhibited by Dr J.A. Smart, Marwood Hill, Barnstaple, Devon.

Rhododendron 'Beaulieu Manor' (a deciduous azalea of unknown parentage), 23 May 1994, as a hardy flowering plant for exhibition. Trusses 12 to 14 flowers up to 12cm across. Corolla 5-6 lobed, tubular funnel-shaped up to 3.5cm long and 7.2cm across, vivid reddish orange (Red Group 42A) with strong flush of strong orange (Orange Group 25A) in upper throat. Outer corolla covered with short white hairs. Stamens 6 held free, filaments reddish orange, anthers orange-brown. Style reddish-orange. Calyx rudimentary. Leaves deciduous. Raised and exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

Rhododendron 'Charlotte Foster' (open pollinated 'Lady Rosebery' × *yunnanense*?), 3 May 1994, as a hardy flowering plant for exhibition. Trusses 11-15 flowers in compound umbels. Corolla funnel-shaped, 5 lobed, up to 4cm long and 4.5cm across, light purplish pink (Red-Purple Group 68D) upper lobe shading to a stronger moderate purplish pink (Red-Purple Group 68C) with strong reddish-orange spotting (Red Group 42B) in upper throat. Stamens 10 held free, filaments pink, anthers pale brown, style held free. Calyx

rudimentary, green, scaly. Leaves elliptic, dull matt green above, reverse paler, lightly scaly. Raised and exhibited by Maurice Foster, White House Farm, Ivy Hatch, Sevenoaks Kent TN15 0NN.

Rhododendron 'Mrs Eddy' ('Jibuti' × 'Gladys Rillstone'), 23 May 1994 as a hardy flowering plant for exhibition. Trusses 16 to 18 flowers up to 20cm across. Corolla 5 lobed, funnel-shaped, up to 7.5cm long and 10cm across, strong purplish red (Red-Purple Group 60D) in throat, lightening to pale purplish pink (Red-Purple Group 62D) at corolla rim: reverse deep red (Red-Purple Group 60A) at base, paling towards rim. Upper throat heavily blotched and spotted with black, with lighter spotting on all lobes. Stamens 10 held within, filaments white, anthers light brown, style held within. Calyx 5 joined lobes, to 5mm dark red, lightly glandular. Nectaries prominent. Leaves oblanceolate, up to 12cm long and 4cm across, dark matt green above, pale green below, free of indumentum. Crossed, raised and exhibited by Edmund de Rothschild, Exbury Gardens, Exbury, Southampton, Hants.

Rhododendron 'Odoratum' (*nudiflorum* × *ponticum*), 21 June 1994 as a hardy flowering plant for exhibition. An azaleodendron. Trusses full, rounded. Corolla 5 lobed, funnel-shaped to tubular funnel-shaped, up to 3cm long and 3cm across, throat white, shading to very pale to very light purple (Purple Group 76 C-B) edged with strong reddish purple (Purple Group 78 B). Upper throat very faintly spotted green. Stamens 10 held within, filaments white, anthers cream; style held free, stigma green. Calyx 5 deeply divided lobes, to 6mm, green, fringed reddish glandular hairs. Leaves elliptic-obovate up to 8.5cm long and 3.8cm across, dull matt green above, glaucous-green below. Raised at Thompson's Nursery before 1875. Exhibited by The High Beeches Garden Conservation Trust, The High Beeches, Handcross, West Sussex RH17 6HQ.

Rhododendron 'Spring Sunshine' (*adenogynum* × *wardii*), 12 April 1994, when shown from a cold greenhouse. Trusses comprising 8 to 10 flowers. Corolla 5-7 frilled lobes, funnel shaped, up to 4.4cm long and 5.5cm across light yellow (Yellow-Orange Group 18A) fringed moderate yellowish pink (Red Group 39C) in bud. Opening to pale orange yellow (Yellow-Orange Group 16D) faintly flushed light yellowish pink (Red Group 38C). Stamens 10-11 held within, filaments white, anthers cream, style held within. Calyx 5 or 6 joined lobes, to 14mm, cream. Leaves ovate up to 11cm long and 5.5cm across, dark matt green above, glabrous, with soft light brown indumentom below. Crossed and raised by E.G. Millais. Exhibited by Millais Nurseries, Churt, Farnham, Surrey GU10 2JN.

Rhododendron 'Stopham Girl' (parentage not known), 21 June 1994, as a hardy flowering plant for exhibition. A deciduous azalea. Trusses of 20 to 26 flowers often as tightly packed, rounded double-trusses. Corolla 5 to 6 lobed, tubular funnel-shaped up to 4.5cm long and 4.5cm across, white, upper lobe vivid yellow (Yellow-Orange Group 14) with a thin white central bar. Corolla tube glandular hairy. Strongly fragrant. Stamens 10 to 12 held free, filaments white to light purplish red, anthers brown, style light purplish red, held free. Calyx 5 to 6 lobed, green, glandular hairy. Leaves deciduous, elliptic, up to 7.5cm long and 2.8cm across. Raised by Professor M.C. Pratt. Exhibited by J. Harrington, Upper Lodge, Stopham, Pulborough, West Sussex.

Rhododendron 'Wilsoni' (*carolinianum* × *ferrugineum*), 21 June 1994, as a hardy flowering plant for exhibition. Trusses loose, 12 to 16 flowers. Corolla 5 lobed, tubular funnel-shaped, up to 2.3cm long and 2.4cm across, very pale purple (Red-Purple Group 69A) strongly overlaid and shaded with deep to strong purplish pink (Red-Purple Group A-B). Some darker spotting in upper throat. Outer corolla scaly. Stamens 10 of equal length, filaments white, anthers light brown, style held within, short, flushed purplish pink. Calyx 5 lobed, to 1mm, greenish purple, scaly. Leaves elliptic, up to 3cm long and 1.6cm across, dull matt green, sparingly scaly above, paler, lightly scaly beneath. Raiser not known. Exhibited by The High Beeches Garden Conservation Trust, The High Beeches, Handcross, West Sussex RH17 6HQ.

Magnolia 'Summer Solstice', 21 June 1994, as a hardy flowering plant for exhibition. This cultivar, now 6 metres tall, a seedling from the Great Park, Windsor, appeared as a chance seedling of *M. globosa*, almost certainly pollinated by the pink form of *M. hypoleuca*. Leaves to 18 × 10cm mid-green above, glaucous hairy below, broad ovate to obovate apex shortly acuminate, petiole 3cm. Flowers scented 10cm across, globose, of about 12 tepals ovate to broadly obovate, 3 outer tepals 8 × 4 to 7 × 3cm, cream inside but deep to moderate pink, 51 C-D on outside, inner tepals 9.5 × 5 to 7 × 3cm, cream 155A; stamens crimson. Standard Specimen in Herb. Hort. Wisley.

Book Reviews

'Chinese' Wilson. A Life of Ernest H. Wilson, by Roy W. Briggs. viii–154pp + 4 maps, 21 coloured ills, numerous b&w photos (HMSO, 1993). Price £19.95.

This is essential reading for anyone who has a serious interest in the history of plant-collecting. The author, a great-nephew of Ernest H. Wilson, discovered in 1985 a part of Wilson's correspondence to his family which cast new light not only on Wilson's character and background but also on incidents which occurred during his travels. Included also are a considerable number of Wilson's hitherto unpublished photographs, of interest both for their subject-matter and for their illustration of Wilson's talent as a photographer.

As Briggs points out, Wilson's own books gloss over many of the extraordinary hardships he suffered and tend to condense events rather than record them in sequence. Neither does Wilson reveal much about his own background, private life and business relationships. The present volume expands considerably our information on these aspects and it is well written.

Much of the material, biographical and pictorial, is of general interest. Wilson was a self-made man of humble origins. A loner by nature (as were most of the early plant-hunters), he achieved recognition and eventually fame by hard work and force of character as much as by natural ability. He showed determination, ruthless at times, and endured with courage many adventures and setbacks. The book throws some striking sidelights on the social attitudes of 90 years ago: in Wilson and in his employer, Professor Charles Sargent of the Arnold Arboretum, we may discern a measure of autocracy and chauvinism. Wilson felt little or no racism. He did indeed refer to certain 'natives', such as the head-hunters of Taiwan, as 'savages', but he quickly fell out with a fellow plant-hunter, Frank Meyer, who openly and foolishly 'gloried in the superiority of the white race'.

Perhaps what distances us most from those days is that expeditions were then counted in years rather than weeks. Inevitably, therefore, there were long intervals when boredom and nostalgia were the main enemies and these would have been unbearable but for Wilson's driving enthusiasm for plants. The long time-scale is reflected inevitably in lengthy details of Wilson's movements: often tedious reading, I find, unless one knows the area being described. But if certain passages are likely to be skipped by most readers, that is not to deny their value for reference. The final chapters deal with the period 1919 up to Wilson's death in a motoring accident in 1930, aged

only 54. By then he was a celebrity, undertook world tours on behalf of the Arnold Arboretum and, on Sargent's death in 1927, he became Keeper. During this period he wrote several books and numerous articles.

Roy Briggs has produced an excellent text with many useful references but has, I think, been let down by the publishers in that many of Wilson's own photographs are much reduced in size and many are reproduced without proper control of the grey-scale range. The minimal maps are totally inadequate for following the journeys described. HMSO can and should do better! It seems that they have optimistically, and I think mistakenly, aimed the book at a wide readership using their limited resources to include 21 well-reproduced colour photographs of a small selection of Wilson's plant introductions. These are welcome but relatively unimportant to the specialist readers who will probably in fact be the main buyers. Despite these reservations, no reader of the Year Book should miss this book.

STEPHEN FOX

Magnolias by Dorothy J. Callaway. 308pp. 142 colour ills, 18 b&w, 24 line. (Batsford, 1994) Price £35.

This book is written by an American botanist and horticulturist who has not only researched the taxonomy but also been involved in the propagation, cultivation and breeding of magnolias, also acting as official registrar for the genus. As the author says in the preface, the book is not intended as a monograph but rather as a compilation of her own experiences with those of others and she states that she, personally, has not seen all the magnolias of which she writes. This is hardly surprising in view of the very comprehensive cover of the genus.

There are short paragraphs describing the various uses of magnolia, its timber and medicinal properties, followed by details of pollination and biology. Cultural requirements are discussed in depth as are the various pests and diseases which evidently can affect the genus but do not seem to present a great problem in the United Kingdom. The description of the various methods of propagation is full and interesting, covering seed, cuttings, grafting and tissue culture. The paragraph on taxonomy is helpful in that it first describes how the various rules are applied across the board and then relates them to magnolias in particular.

The description of the various species is particularly wide-reaching but of the 80 or so species described only some 45 are shown as being in cultivation. Where applicable cultivars and hybrids arising from given species are listed.

The mechanics of hybridisation and a list of hybridisers is

followed by descriptive lists of hybrids and the appendices contain lists of valid/invalid names, a glossary, tables of blooming periods and details of specialist suppliers.

A well-researched and comprehensive work, perhaps more intended for the American market and, whilst most lovers of magnolias will find much of interest, there is also much which will appeal to only a small proportion of the cognoscenti. The colour illustrations are well produced and the line drawings are clear, relating well to the text. The particularly comprehensive bibliography is useful to those who wish to pursue further study.

BA

Coloured Icones of Yellow Camellias Produced by the Guangsi Science & Technology Publishing House. *Coloured Icones of Yellow Camellias* will appeal to professional and amateur camellia enthusiasts. Yellow camellias are of particular importance to the hybridist and this book gives excellent descriptions of 21 yellow cultivars, each illustrated by a colour photograph, a painting, and diagram drawings of the parts of the flower and seed. The text is in Chinese, English and Japanese and gives a good description of the yellow camellia and its cultural requirements.

The book may be obtained in this country from Mr Herbert Short, 41 Galveston Road, East Putney, London SW15 2RZ.

MAYDA REYNOLDS

Fangs: the memoirs of a gardening dentist by George Witherwick. Preface by Elizabeth Viscountess Falmouth. 182pp, 10 b&w photos. Obtainable from The Victoria Gallery, 28 Cross Street, Camborne, Cornwall. (1993). Price £7.99.

Members of our Group prefer on the whole to spend their leisure hours in the garden rather than the study, as the Hon. Editor knows all too well. However, there are exceptions and here is a delightful autobiography from one of our members, George Witherwick, which all his fellow rhododendron lovers will enjoy reading. He describes his long and successful career in dental surgery and wartime RAF service with enormous gusto. Finally this Yorkshireman and his wife went to Cornwall where they created a wonderful rhododendron garden from a 'wilderness' on the Helford River, now known as the Trelean Valley Garden. (See RHS *The Garden*, Oct. 1992, Vol.117, p.10.) This little book is entitled *Fangs* (which is Peking Chinese for a 'fragrant flower') and the title gives a clue to the robust and humorous view of life that sustains the author – a great individualist – through thick and thin. He has donated all the proceeds to the RAF Benevolent Fund.

CP

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Corrections to Rhododendrons 1993, No. 46

The following corrections should be made to the article 'The 1992 Sino-Scottish Expedition to NW Yunnan (SSNY)'
p.10. Map. Ka Kar Fu should Ka Kar Pu.
Dequin should read Deqin
p.11 Para 3, line 2. Dequin should Deqin
p.13 Section 3, line 2. Omit word 'the' before Zhongdian
p.15 Section 5, line 1. For Bei Man Shan read Bei Ma Shan
p.16 Section 5, line 12. For Bei Mai Shan read Bei Ma Shan.
Fig.8 Caption. For Tian Ban Shan read Tian Bau Shan. For October 1992 read May 1992

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of Rhododendrons, Camellias and Magnoliaceae

(a=azalea; az=azaleodendron; v=vireya)

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