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# A Botanist in the Yulong Shan – the Jade Dragon Mountains of Yunnan

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(*Plates 65–72*)

The Yulong Shan forms a dramatic range of precipitous limestone peaks, rising to 5600m, riven by deep gorges and containing several glaciers and extensive areas of permanent snow. The range forms the most easterly boundary of the Chungtien Plateau and is bounded on the north-west by the Yangtse river. It seems strange that such a relatively uncomplicated range of mountains, close to a large town (Likiang) in the NW corner of the Yunnan province of China, remains virgin. In fact it has been attempted on at least four separate occasions, the first rebuff being delivered to a New Zealand expedition as long ago as the 1930s. In 1984 a second attempt was unsuccessfully made by a Japanese team, and in the following two years separate American assaults (autumn and spring) were made, again without success. Both these American expeditions appear to have been operating on extremely tight time schedules and were thwarted by bad weather.

In the April–May period of 1987 I spent almost five weeks exploring the mountains, slopes and recesses of this exceptionally rugged and beautiful range of dolomitic limestone as a member of the Sino-British Likiang Botanical Expedition. Two of our members were from the Royal Botanic Gardens, Edinburgh (Ron McBeath and David Chamberlain) and two from the Royal Botanic Gardens, Kew (the author and Chris Grey-Wilson). Four Chinese botanists from the Kunming Institute of Botany made up the remaining members of the party.

Western interest in the Yulong Shan began long before the first serious mountaineers set their sights on its airy summit. Marco Polo visited Ta-Li-Fu, the western capital of Yunnan (Dali as we know it today) in approximately 1283 and may have caught a glimpse of the Jade Dragon Snow Mountains to the north. He certainly noted the botanical wealth and variety of China and remarked upon the country's 'vegetative wonders'. Others who followed over the centuries echoed his comments and brought back seeds, plants and dried herbarium specimens to excite the western botanists of their day.

Most significantly, several European missionaries stationed in China's interior made detailed observations of plants of medicinal importance but, until the Opium Wars of 1842 and 1860 compelled a change in Chinese politics, Westerners were almost completely shut out of the country's interior. Even then, when 'the bamboo door' had been prized open a little wider, travel was

often extremely hazardous as feuding war-lords and brigands were commonplace. Between 1872 and 1885 the Russian explorer Captain Nicolai Mikhailovich Przewalski made four excursions to China including one to the Tibetan borderlands and left his mark on botanical history. (*Ligularia przewalskii* is but one plant named in his honour.) But it was the now-legendary French missionary Père Jean Marie Delavay, inspired by the Lazarist missionary and innate naturalist Père Jean Pierre Armand, who played the major role in enlightening the world about the botanical wonders of Yunnan. During the 1880s he gathered over 200,000 dried botanical specimens in the north-western part of the province for the herbarium of the Paris Museum, at least 1500 of these species being entirely new to science.

Much of Delavay's time and effort was spent in the Yulong Shan range (referred to in his notes as the Li-kiang) and to serious students of Chinese botany his field notes make exciting and romantic reading. '*Paeonia delavayi* sp. nov [new species] 3,500 metres Li-kiang 9/7/84 Delavay No. 1142. . . . . très élégante de la plante lui méritent une place dans les jardins' is but one of his notes which records the very first collection of this deep maroon-red flowered paeonia. Our expedition 'rediscovered' this wonderful species 103 years later and echoed Delavay's sentiments.

The next and most diligent of all botanical explorers of the Yulong Shan was the great Scottish plant-collector George Forrest. Between 1904 and 1932 he made seven expeditions to China of which five were directed to the Yulong Shan and the region centred around Likiang District. He made massive collections of seeds, plants and dried specimens – a practice which would be totally unacceptable today – and by training native collectors managed to spread his collecting-web more effectively.

During these travels Forrest managed to introduce to horticulture many of the plants which Delavay had discovered but had only collected as herbarium specimens. Forrest described the Yulong Shan as follows: 'From the base to the limit of vegetation at 17,500 feet, the range in its whole extent of fully fifty miles is one huge natural flower garden. The extreme height of the range is almost 20,000 ft; there is therefore about 3000 ft of perpetual snow.' With our better knowledge of this range we can now reduce each of these three figures by 1000 feet or so, but otherwise the description is no exaggeration.

During Forrest's third expedition to the Yulong Shan (1912–1914) the intrepid English plant-hunter Frank Kingdon-Ward almost crossed his path as he travelled through Likiang *en route* to other parts of Western Yunnan and the Tibetan Marches. In his book *Mystery Rivers of Tibet* Kingdon-Ward writes of Likiang as being 'a small unwallled city of steep cobbled streets situated in a bowl amongst the hills', and he describes the adjacent Temple of the Water Dragon as being bewitchingly reflected in the water-lilied pool against a background of snowy peaks. On 16 May 1913 Kingdon-Ward left Likiang *en route* to the Yangtse river. This he crossed two days later close to the point where the waters are forced through Tiger Leaping Gorge at the base of the immensely steep north-western ramparts of the Yulong Shan which fall a vertical height of two miles into the river bed. He wrote: 'The great river here flows north eastwards presently to hurl itself into the heart of the Li-kiang [sic] range a spur of which we had just crossed.'

The Austrian-born naturalized American geographer, plant-hunter and anthropologist Joseph Rock spent many years between 1922 and 1949 in China, operating mainly in the Yunnan region. He was an eccentric man of many talents, of great resolve and a natural linguist. His particular talent was for locating particularly fine forms of already known plant species, especially rhododendrons. He only left China when he was forced out in 1949 by the political turmoil of that period.

Having made his home in Likiang he left with a heavy heart, stating that he 'wanted to die amongst those beautiful mountains rather than in a bleak hospital bed all alone', but it was not to be and he died far away in Honolulu in 1962 at the age of 78; to the last he was a lonely, restless figure always travelling and nowhere really at home.

These famous three—Forrest, Kingdon-Ward and Rock—actually met on one occasion during 1922 in the botanical arena of the Yulong Shan; records succinctly state that 'they were wary of one another'. Field botanists are adventurers with egos every bit as sensitive as any 'summit-sighted' mountaineer's, and each of these highly motivated plant-hunters was quick to divert any would-be poachers away from what he considered to be his own chosen patch. Even allowing for this, it is amusing to reflect that, with the whole of South-West China to explore, these three great men found themselves getting under each other's feet on the same mountain. The remaining notable botanist historically to work the Yulong Shan range was Yu Te-tsun, a Chinese plant-hunter and Senior Professor of the Institute of Botany, Academia Sinica, Beijing. He travelled widely throughout China and spent the seasons of 1937–38 in the Likiang region, leading a British-sponsored expedition. Many of the plants which were subsequently raised from his seed collections can be found alongside those of Forrest, Kingdon-Ward and Rock in the many great gardens of Britain, representing a testimony to botanical exploration and endeavour. The main objectives of the Sino-British Likiang Botanical Expedition was to carry out detailed studies of certain genera (with special reference to *Rhododendron*, *Betula* and *Primula*) and to gain field experience which would directly relate to the cultural requirements of these groups.

As far as records show it would seem that almost all botanical exploration, including our own, has been confined to the eastern flank of the mountain—partly because of its ease of access from the Likiang Plain, but more obviously because the topography of the lower and middle sections of the range is less severe than one would have had to face on the more remote and savage western side. The lower slopes between 2700 and 3000 metres are dominated by the Yunnan Pine *Pinus yunnanensis* which is interspersed with hardwood trees such as Poplar and Lime as well as a very wide range of interesting shrubs. These include several species of *Rhododendron*, *Hypericum*, *Buddleja*, *Syringa*, *Berberis*, *Daphne* and the delightful *Clematis montana*, and much more besides. Herbs such as the beautiful George Forrest's primrose *Primula forrestii* with flowers of rich golden-yellow also flourish at this altitude, as does the rare and bizarre-looking slipper orchid *Cypripedium margaritaceum*.

The middle zone of the Yulong Shan between 3000 and 3750 metres is dominated by mixed conifers and deciduous forest and contains some of the

finest of all woody species. Conifers include the Yunnan Hemlock *Tsuga yunnanensis*, Potanin's Larch *Larix potaninii*, Armand's Pine *Pinus armandii*, the lower level forms of Delavay's Fir *Abies delavayi*, the Likiang Spruce *Picea likiangensis*, and the Himalayan Yew *Taxus baccata var wallichiana* which is so similar to the European Yew that a galloping yak would never notice the difference! Deciduous trees include Forrest's Maple *Acer forrestii*, Vilmorin's Mountain Ash *Sorbus vilmorinii* and the two major birch species of the region, *Betula utilis* and *B. platyphylla var sechuanica*. The list of herbs which grow within this rich area of temperate forest is truly encyclopaedic, for here are to be found such treasures as *Primula bella*, *Iris chrysographes*, *Arisaema wilsonii* and the yellow slipper orchid *Cypripedium flavum*. But it is to the higher slopes that one has to climb, especially those between 4000 and 5000 metres, in order to see the alpine gems which fired the questing spirit of George Forrest and his contemporaries. Here, on the steep alpine meadows and the harsh screes and cliff ledges, are to be found the real treasures of the range. In June the meadows at this altitude are alight with the colour of flowers – *Rhododendron adenogynum* occurs in flowing masses of pale pink, the yellow bells of *Lilium lopophorum* stud the slopes in association with the purple *Lloydia tibetica var purpurescens* (an Asian counterpart of the Snowdon Lily) and the golden *Meconopsis integrifolia*. On the cliffs cling cushions of *Androsace delavayi* and the almost impossibly-named *Solmslaubachia pulcherrima*, one of Forrest's favourite alpinists with cress-like ice-blue flowers. On the limestone screes, often in the shelter of boulders, grow dwarf willows, Delavay's Fritillary *Fritillaria delavayi*, *Rhododendron telmateium*, and cushion saxifrages, the finest of which is *Saxifraga calcicola*.

Best of all is the exquisite dwarf alpine 'Blue Poppy' *Meconopsis delavayi* which Kingdon-Ward described as 'a shimmering bluish-violet flower with the texture of Japanese silk'. Higher still in the north-facing base-rich wetter flushes the seemingly uncultivable *Primula dryadifolia* shows its mauve-pink flowers against broad prostrate mats of foliage (25cm across), accompanied by three 'sisters' of the same genus, *Primula pinnatifida*, *P. secundiflora* and *P. pseudo-sikkimensis*.

One of the most spectacular areas of the Yulong Shan is the tortuous and mysterious valley of the Gang-ho-ba which drives itself deeply into the eastern recesses of the range to end in a great cul-de-sac of moraines, detritus, hanging glacier and soaring cliff faces. This is the inner sanctum of the Yulong Shan and the region which inspired us the most, both for its floristic wealth and its mountain majesty. Our greatest disappointment was in not being able to camp in the alpine zones. Our Chinese hosts mystified us by preferring to base the expedition in Likiang and to set forth each day from the hotel. In consequence we were constantly obliged to ascend and descend the mountain by a different route, and after a period of 3½ weeks of near-perfect weather we calculated we had notched up a collective up-and-down climbing figure of well over 36,000 metres! It is appropriate here to refer to a paragraph by S B Sutton from *In China's Border Provinces* where she states: 'As Rock's, Kingdon-Ward's and Forrest's harvests proved, the river gorges and mountains of western China were sufficiently fertile to keep a man busy for a lifetime or at least as long as his

legs held out!' The Likiang region is currently open to tourism and, what was until a short while ago a little-known part of SW China, is fast becoming just another point on the Asian overlander's itinerary.

In 1913 Frank Kingdon-Ward amusingly wrote: 'If the day ever comes for the publication of a Tourist Guide to Yunnan we may expect to see something like this, — from the pass an extensive view is obtained of the Li-kiang range (highest peak 20,000ft) which has hardly received at the hands of climbers the attention it merits. Guides cannot be obtained locally, as the people do not mountaineer.' Almost 80 years later the summit of the Yulong Shan still awaits the attention of a successful climber and the little-known north-western slopes still hold secrets for the naturalist.

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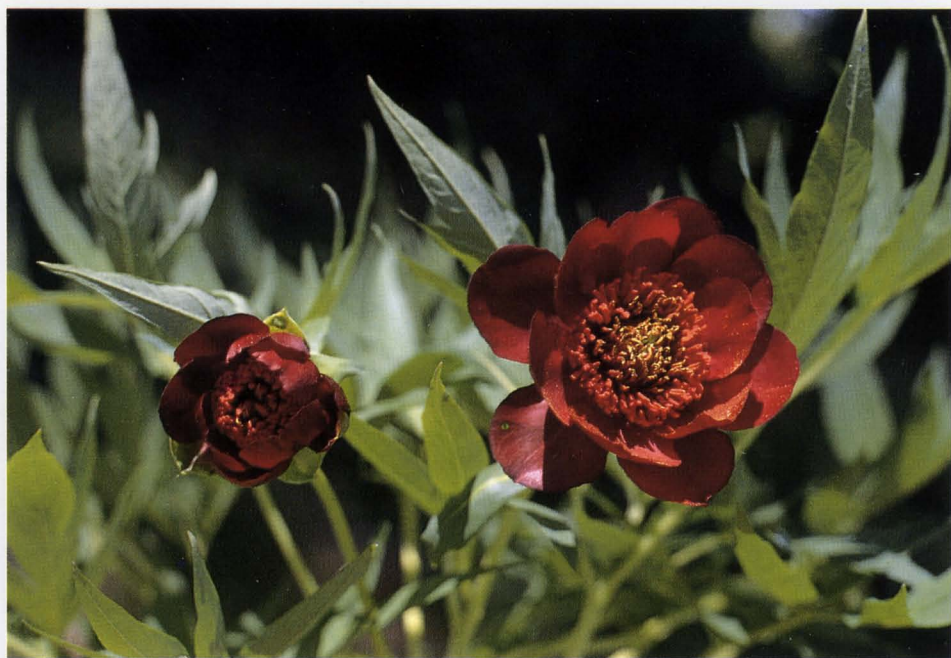


66. Left, *Rhododendron adenogynum*.  
(Tony Schilling) (p 63)

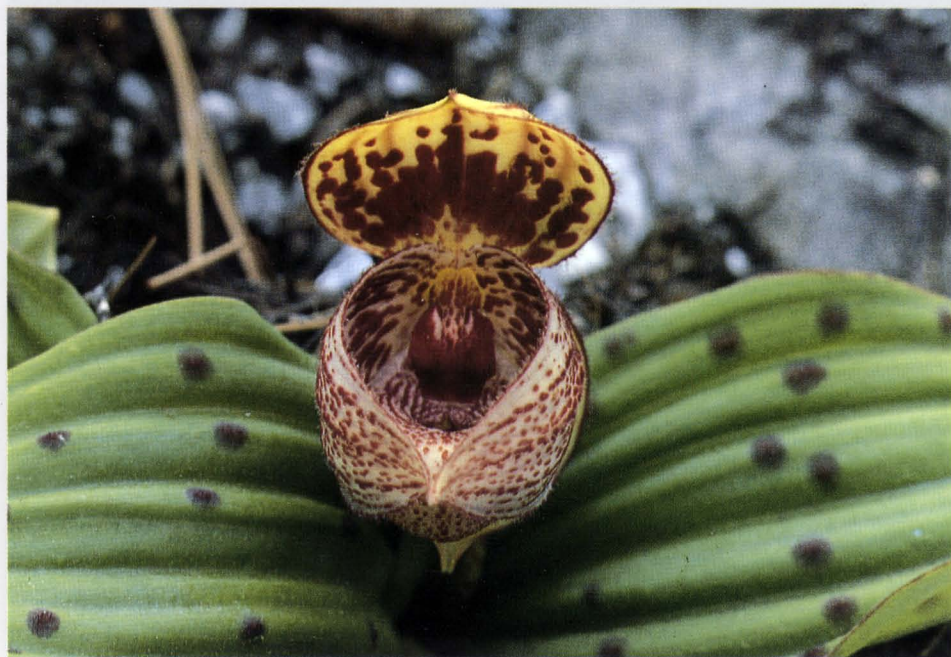
67. *Abies delavayi*. (Tony Schilling)  
(p 63)

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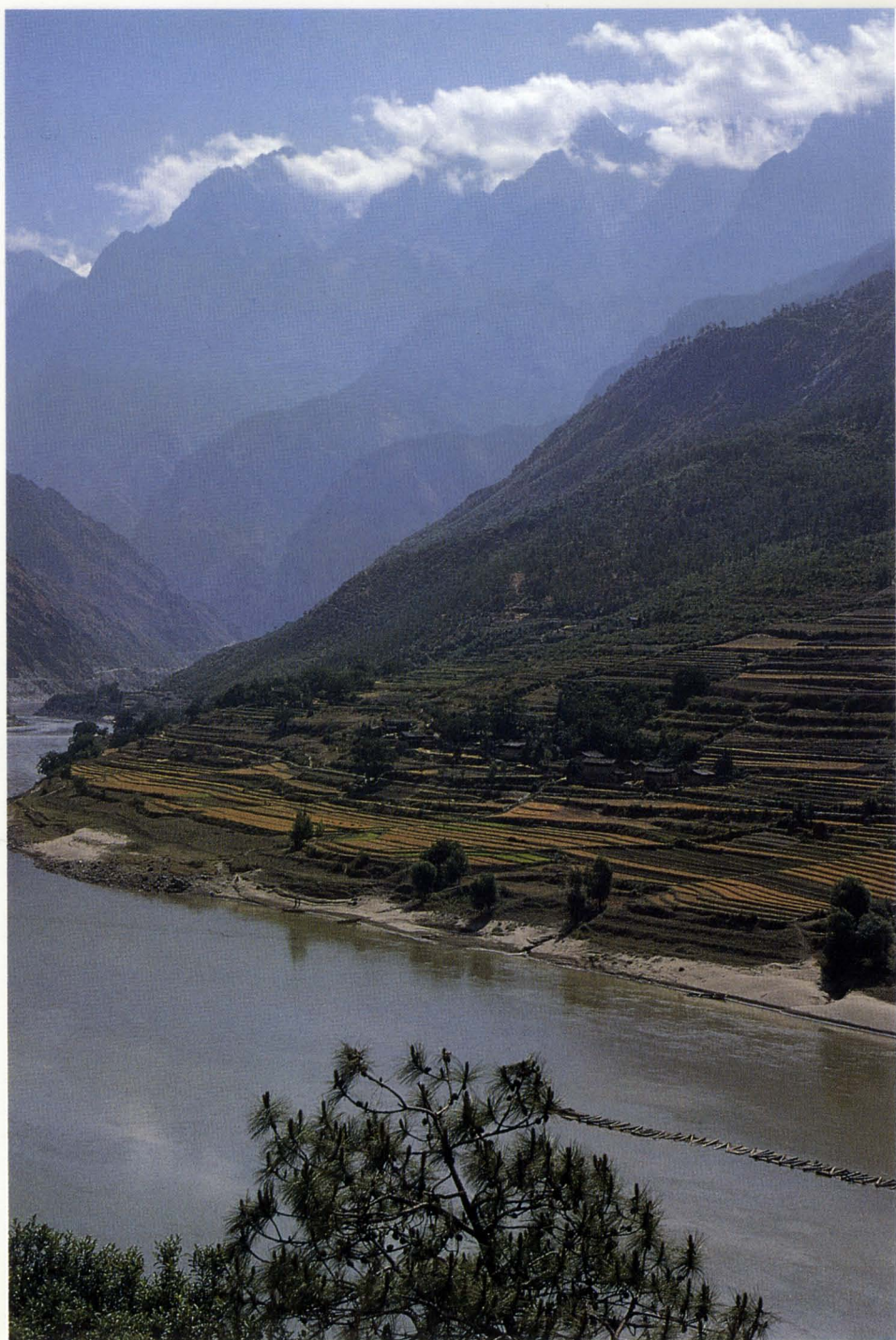
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70. *Paeonia delavayi*. (Tony Schilling) (p 63)

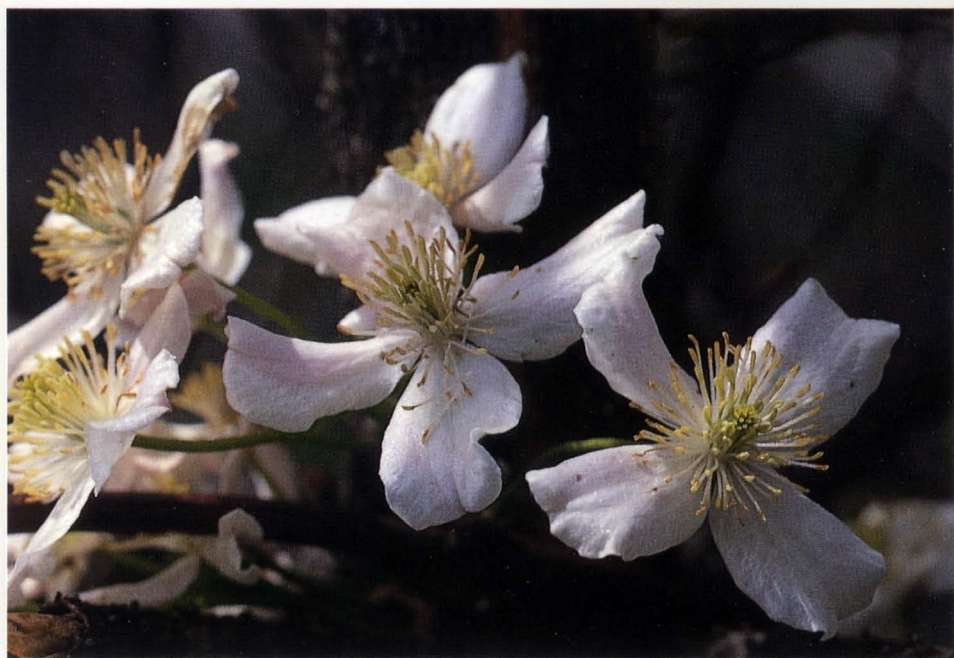


71. *Cypripedium margaritaceum*. (Tony Schilling) (p 63)



72. *NW flank of the Yulong Shan and Yangtze.* (Tony Schilling) (p 63)





68. *Clematis montana*. (Tony Schilling) (p 63)



69. *Rhododendron telmateium*. (Tony Schilling) (p 63)



65. *Alpine flora of Yulong Shan (at 4000m), with Rhododendron adenogynum.* (Tony Schilling) (p 63)