

International Rock Gardener

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Summer flowers are flourishing in the north while winter blooms make their appearance in the south – July is an interesting month. Many lovers of alpine plants have enjoyed trips to see plants in habitat and are even now making plans for their next adventure. For botanist/plant hunters like John and Anita Watson, such expeditions can lead to the discovery of new species – the exact status of which can sometimes take time to unravel! Panayoti Kelaidis, that indefatigable power house of the Denver Botanic Garden, revisited [Tibet](#) and China in June – following on from his 2018 trip from where he shares with us some of the plants he encountered. For those who, for whatever reason, are armchair travellers amongst us, such articles are a charm. For those wishing to travel themselves to see plants in their homelands, such reports are also helpful. To conclude this month the IRG Team remembers Ron Beeston, a dear friend, recently lost to us.

Cover photo: *Veronica piroliformis* in Yunnan – photo Panayoti Kelaidis.



Left to right: Larry Vickerman, Mike Kintgen, Panayoti Kelaidis, Dan Johnson and Michael Bone at Denver Botanic Gardens, at a book-signing for the book: [Steppes: The Plants and Ecology of the World's Semi-Arid Regions](#).

“Some days you just want to go on forever...in a paradise of *Primula sikkimensis*, *P. secundiflora* and *Rheum alexandrae* at Lake Tianchi in the mountains of Yunnan” –Panayoti Kelaidis, June 2019



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---Plant Description---

Follow the yellow quick flow. Another new species of *Viola* sect. *Andinium* from Argentina, this one from the country's mountainous northwest.

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An irrelevant opening aside

John's tortuous punning attempt above to modify the title of the much-loved song from 'The Wizard of Oz' [fig.1] has a sentimental connotation for him in that Judy Garland, who played its young heroine Dorothy, was his first boyhood love. He fell head-over-heels for her on seeing the film when its 1949 re-release opened at his local cinema. Its pertinence to the title here will become apparent in the course of the account below.



fig.1: Follow the yellow brick road. Roger Ferryman was our 'wizard'.

Now down to serious business

Regular IRG readers who are forbearing enough to continue to plough gamely through our endless offerings may perhaps recall the topic of our contribution to IRG 107 (Watson & Flores 2018b). It detailed our first fruitless attempt of two (2003 & early 2006) to re-encounter any of the *thirteen rosulate violas from the 750 km-long outlying Andes of the Argentinian provinces of La Rioja, Catamarca, Tucumán and Salta [fig.2] which were published by the great Wilhelm Becker during the

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1920s. In fact the total is now perhaps reduced to twelve, as Buenos Aires botanists have recently synonymised one, although for us their judgement is subject as yet to careful study and acceptance by ourselves. To offset that possibility, two new species collected by others in Catamarca have been published in the last decade (Watson & Flores 2009, Watson *et al.* 2019). This account describes part of our own 'third time more lucky' in 2007.

*Perhaps as an instinctive superstitious attempt to avoid potential misfortune, the number was precipitately made up to fourteen in IRG 107 by the inclusion of Becker's lone non-rosulate species from the sector!



fig.2: Physical map showing the 3 NW Argentina Andean outlying ranges explored in 2007 (the new species in lowest, marked pink), and the position of Los Andes, our home town.

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Section *Andinium* violas occur more or less continuously between the equator and southern Patagonia, an adjusted distance of approximately 5700 km. It might seem strange then that such a relatively restricted and isolated geographical sector in NW Argentina happens to be their second most important centre of distribution after the stretch down from the centre of that country and Chile to Bariloche. A speculative but convincing reason can be proposed, however. Based on observation and published data, it's reasonable to assume that these rosulate violas spread northwards along the young, uplifting Andes, eventually reaching the equator. Where climatic and ecologically related conditions have remained favourable for them at high elevations, they have thrived there, and continue to do so. But continuing uplift of the central Andes eventually blocked rainfall from the Pacific west, creating the extensive arid high Altiplano plateau of Bolivia with its average elevation of 3750 m, which extends down into northern Chile and Argentina [fig.3].



fig.3: The high Altiplano in Antofagasta Region, Chile, at the border with Argentina, an arid zone which is inimical to all but a very few Andean violas. (6 Jan 2006. ARF)

Rainfall is infrequent, averaging about 200-300 mm per annum, and although a very small handful of section *Andinium* species have evolved to adapt to the harsh environment, e.g. *Viola lullailacoensis* [fig.71], they are extremely few and far between in this vast, daunting landscape. Nevertheless, more favourable conditions exist for annual species [fig.4] below to the west along the Pacific coast, as explained in IRG 104 (Watson & Flores 2018a), and also to the east where these violas published by Becker occur. In this case weather originates from the Atlantic with regular heavy rainfall supporting lush, sometimes subtropical, conditions up to the foothills of the outlying Andes [figs.5, 6]. Enough precipitation remains to provide ideal conditions for a mountain flora, and Atlantic fronts only exhaust completely on reaching the Altiplano. Even so, occasionally they're powerful enough to create short-lived storms and floods there, the so-called Bolivian Winter. This relatively recent geoclimatic situation has therefore resulted in two favourable diversions which bypass the Altiplano on either side, with our perennials occupying the fertile eastern Andean outliers and finding them so much to their liking as to become one of the section's secondary centres of diversity.

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fig.4, left: The annual *Viola polypoda*, adapted to the Atacama Desert Pacific mist zone, one of the two 'bypass routes' for rosulate violas to avoid the hostile high Altiplano. (JMW)

fig.5, right: Just to show how lush is the undergrowth in the lowlands on the rainy Atlantic exposures of northern temperate Argentina. (8 Jan 2006. ARF)



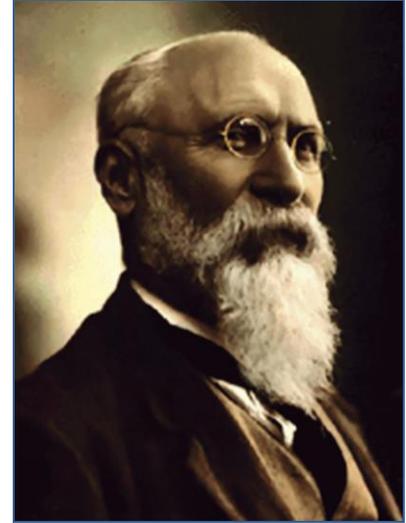
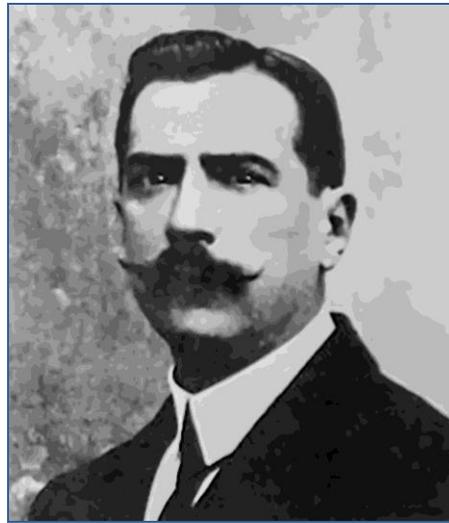
fig.67: So-called Chilean jasmine, *Mandevilla laxa*. Not the one in our garden this, but growing wild in the low greenery of NW Argentina. (8 Jan 2006. ARF)

The ranges concerned, the Sierra de Famatina, the Sierra de Aconquija and the Cumbres Calchaquies [fig.2] have not only been underexplored since the early 20th Century, but are unvisited by mountain plant-centred ecotours, which have concentrated exclusively on Patagonia and the central Andes of Argentina and Chile, and are now expanding into Peru and Ecuador. A probable reason for this is that tours require experienced guides capable of creating an itinerary and identifying finds. But the rich flora of these north-eastern outliers is apparently little known, even to local botanists and enthusiasts, with the result that no potential guides exist. Unlike for other parts of Argentina, there are no complete, relevant regional floras either. Certainly specialists in particular taxonomic groups know about anything in their spheres which occurs in these parts, but if any experts do in fact have an overall comprehensive grasp of the flora as a whole, they're hardly well publicised. We could

certainly fill the bill ... were we not now past our sell-by date!

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This negative situation resulted in one remarkable consequence. Scarcely any of Becker's thirteen species were seen from the time they were first known until the last decade or so of the present century. A total of nine historic collectors, five of them naturalized Germans, are known to have found violas in northwest Argentina: Bodenbender, Castillon, Hieronymus, Joergensen, Kurtz [fig.7], Lillo [fig.8], Niederlein, Rodriguez and Spegazzini [fig.9]. They were exploring these Andes from 1879 up to 1917, when the last specimen recorded by Becker was gathered. Between them they encountered six of his described species just once only, six others twice, and one three times. In the present period of renewed activity those two new species above have been published, while at least four of Becker's originals are now known in the wild. During the intervening 90 years, however, no more than three were collected so far as we know. Result: perhaps as many as nine of these species have still not been rediscovered. Anybody up for the challenge?



Left to right - fig.7: Federico Kurtz (1854-1921). A viola and a nototriche he discovered bear his name. fig.8: Miguel Lillo (1862-1931), Over 110 species carry his name, including *Viola lilloana*, which speaks for his ability. Tucumán contains the Lillo herbarium. fig.9: Carlos Spegazzini (1858-1926). He also explored extensively in Patagonia.

It has to be admitted though that many rosulate violas tend to be elusive ... to put it mildly, even to those with experience who study them, or try to study them. Ask us! As noted already in IRG issues 104, 107 and 110 (Watson & Flores 2018a, 2018b, 2019), Anita's friend and ex-colleague, the experienced Argentinian botanist Ricardo Rossow, contributed the genus *Viola* to Flora Patagonica. As a consequence he went on to share our interest in them, unbeknownst to us for a while. In fact it had rocked us back on our heels in 1993 to discover that he was intending to parallel our study of section *Andinium* in its entirety, equally unaware of our involvement. Cooperation was agreed between us, but how this possibly uneasy arrangement would have developed we shall never know, as, to the sad loss for botany, his family and friends, he died shortly afterwards, in 1995. But in 1994 he did spend a month at the right time scouring these very northern Argentinian mountains for Becker's aforementioned *Andinium* legacy of a baker's dozen species. Experienced fieldworker as he was, Ricardo found nary a one. We can hardly sneer either, given our own struggles to locate no more than a paltry few in 2007.

Preliminaries

Our first brief sortie into these mountains in 2003, part of the time with Robert Rolfe, was related in IRG 107 (Watson & Flores 2018b). Of particular relevance was the closure of the access road into the southern end of the Sierra de Famatina, where the new species is situated. An even quicker passage through the sector followed in early January 2006. It formed part of a long circuit in the company of David and Celia Haselgrove from where we live in central Chile to the high Altiplano of

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Antofagasta Region [fig.3], over into north-western Argentina, down to Mendoza Province, and back over the Los Libertadores Pass from Portillo at the top to our home in Los Andes. Although we encountered no violas on either of these forays, preliminary familiarity with the area, its topography, access possibilities and its flora as a whole were to prove invaluable during our subsequent major exploration.



fig.10: Thanks to Cactaceae like this in the Sierra de Famatina, their collector and authority, our friend Roger Ferryman, noticed the viola and informed us.
(6 Feb 2007. ARF)

fig.11:
Trichocereus huascha, one of the glories of the lower elevations of these La Rioja mountains.
(4 Jan 2007. ARF)





fig.12: F.& W.11354 *Trichocereus huascha*, here the red form, a good enough reason in itself for cactus fanatics like Roger to visit the Sierra de Famatina. (6 Feb 2007. ARF)

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A year or so after that first outing with Robert we were informed by another, our friend Roger Ferryman, of a rosulate viola he saw growing in the Famatina range [figs.13, 14, 20] at a location where the road up to the heights crosses a small river. Roger it was who in 1987 introduced Stephen Pern and John to Adriana Hoffmann when she was visiting Kew. She was researching cacti for her Chilean field guide in progress. Adriana's house became their home from home in Santiago during breaks in the 1987/88 exploration of Patagonia. Three years later John and his present wife and coauthor here, Anita, were introduced by Adriana, and towards the end of 1990s they also became involved with her field guide series. Thanks a million, Roger! As a much-travelled amateur plantsman and botanist, he knew Adriana due to a mutual intense enthusiasm for the Cactaceae, his speciality, which explains his presence at Famatina. There are enough in that family in Argentina, 225 species, to satisfy the most ardent of cactus freaks, and La Rioja Province, including the Famatina sector, has its fair share, 49 [figs.10-12], both totals taken from Kiesling (1999).

fig.13: The upper reaches of the Sierra de Famatina we were aiming for - at 3500-4000 m, La Rioja Province, Argentina. (7 Feb 2007. ARF)



fig.14: At first stormy weather as seen here existed for much of the time over our entire area of exploration in NW Argentina. It finally drove us off pro tem. (9 Mar 2007. ARF)

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Given that we now had a precise objective as the focus for an exploration of these three neighbouring Andean ranges, our impatience to see what we could find there grew until we decided to give it a serious go during the 2006-2007 season. In fact our planning stage survey of dates when Becker's violas were discovered revealed that the earliest had been collected on the 7th of January, the latest the 16 March, with eleven in January, six in February and three in March (Becker 1922, 1925, 1926a, 1926b, 1927). This decided New Year's Day 2007 as our date of departure, with an open end return, depending on which ran out first, the flowering season or our funds!

But where would those latter come from for such a relatively distant major fieldwork project, which might last two to three months? True we could expect to get some sort of return from seed sales at the end. But we'd already shut that direct business down due to growing hostility and legislation from the conservation lobby, including here in Chile. Instead we were sending what we could back to the [Archibalds](#), receiving a return of half the proceeds much later of whatever they'd managed to sell. So that aspect was virtually irrelevant to our needs. Nor did we or do we ourselves have any spare resources remotely approaching that level of expenditure. An inheritance of £5000 which a favourite aunt and uncle of John's left him in their will a few years earlier had already been used up in fieldwork. So we applied for an Alpine Garden Society Travel Award - with a positive result, for which we're eternally grateful. As noted below, we've described the first part of the subsequent exploration in AGS literature (Watson 2009). Any further publication covering it, such as this - and no matter where, is a continuing token of our indebtedness; a justification of their trust in our abilities; and an added indication of the fruitfulness of that Travel Award investment. As a wider context, it was also one of four such financial supports between 2001 and 2014 from the AGS specifically provided for our study of these South American violas. No other institution or scientific funding source has contributed to that apart from the Scottish Rock Garden Club, with great generosity, in 2013-14. The rest has been, and remains, a labour of self-financed love!



fig.15: Mud and rock slides from the storms blocked roads until cleared through like this. Life was made miserable for one particular donkey. (10 Jan 2007. ARF)

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fig.16: A closer view of that poor, wretched, half-dead, drenched donkey. (10 Jan 2007. ARF)

A stuttering start

But seeking Becker's legacy in 2007 was not a path strewn with roses - or rather violas - all the way. Our first attempt to explore north-western Argentina right at the very beginning of the year was washed out by storms and floods which had blocked off the access to the Sierra de Famatina for a second time. It put paid to any immediate possibility at least of searching for violas there. In other places earth and rock slides in the mountains held us up for hours in queues of waiting vehicles [figs.14-18]. Under the circumstances more

field work anywhere there was out of the question. What we did manage to achieve up to then is described in an article entitled 'Riding the storm' in the Bulletin of the Alpine Garden Society (Watson 2009). So after less than a fortnight of our intended two to three month project we were forced to return home to Los Andes and wait until the weather calmed, hoping we wouldn't miss the 'flowering bus' meanwhile. At times on the way back we were up to our axles in wide sheets of water along with the rest of the traffic on the main road, crossing fingers we were still on the tarmac!



fig.17: Patience - erosion in action! Clearing our largest mud avalanche, nearly finished after a half-an-hour wait in a queue of delayed fellow travellers. (11 Jan 2007. JMW)

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fig.18: Even then we faced more major blockages such as this, also extensive floods, during our enforced return journey.
(11 Jan 2007. JMW)



There's gold in them thar hills

After what seemed an eternity settled weather again over in Argentina was eventually forecast. To encourage us when we resumed three weeks later on February 3rd, we'd at least managed to find just one small viola population during that first brief, ill-fated sortie. Its identity wasn't accurately resolved until recently [fig.19] (Watson 2009, pp.236-238). Never mind that it wasn't Roger's anticipated Famatina species.



fig.19: The F.& W.11345 *Viola* sp. from Tucumán, the only one we managed to locate in the first 12 days before storms and floods drove us home. (9 Jan 2007. ARF)

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Driving across the high Los Libertadores pass to Argentina from our nearby home in central Chile, we head northwards through the province of San Juan and along the eastern exposure of the Andes towards our destination. The first and most southerly of the three outlying Argentinian Andean ranges in question we come to is, conveniently, the Sierra de Famatina [fig.2], approached from its western side via the small town of Villa Unión, which we reached (at long last!) on 5th February. From Villa Unión the view of the southern end of the Sierra is uninterrupted, including the prolonged snowy summit of mighty Cerro Belgrano [fig.20]. At 6067 m it's the highest Andean peak of any of the outlying ranges, although Cerro El Plata of the more southerly Cordón del Plata is a close rival at 5968 m. For comparison, the highest mountain in the whole of the Andes, Cerro Aconcagua, which lies between the two, reaches 6960 m, not quite a further 1000 m of elevation even.



fig.20: Fine weather again over the southern Sierra de Famatina as seen from Villa Unión to the east, with the mighty snowclad Cerro General Belgrano seen on the left. (5 Feb 2007. ARF)

Awareness of the presence of gold in the Sierra de Famatina arose early on in the era of the Spanish conquest, and its exploitation began almost immediately. After all, that's what the conquistadores came all the way to South America for in the first place! Doubtless the native peoples had been extracting it in a limited way previously. The Spaniards, and after them the Argentinians, developed mining techniques steadily, and by the late 19th century these mountains had become an important source of other minerals, but still principally gold. The chief mine was Mina La Mejicana at 4600 m and near Cerro Belgrano, with well-constructed mule tracks leading up from the town of Chilecito, 1080 m, which lies due east. The main exploitation began after the construction of a load transporter cable in 1905 and continued until the mine became exhausted for the then existing technology in 1926 (Wikipedia 2018c).

The Mina La Mejicana mule track was converted to a narrow, unadopted motorised transport road when the internal combustion engine became available early in the 20th century, which may be considered both a blessing and a curse. A curse because of actual and potential damage to the natural environment, and a blessing for allowing ease of access to an area with a rich flora, not least by ourselves.

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The historic botanical background

Thus it was that four of our nine collectors named above were stimulated to take first the mule track and then the road to collect in the heights on either side, finding new violas as they went. The partnership of Hieronymus and Niederlein in 1879 was the first. They discovered *V. evae*, *V. hieronymi* and *V. niederleinii*. Kurtz, in 1906, was the most prolific, with the type collection of *V. mesadensis* as well as additional records of *V. evae* and *V. hieronymi*. *V. argentina* had been described previously, but from an unknown location. Kurtz collected it here in the Sierra de Famatina, where he also found and thus expanded the range of *V. triflabellata* [fig.59]. Finally Bodenbender closed the book in 1911 with a second location for *V. niederleinii* (Becker 1922, 1927). Remarkably, these six rosulate viola species they made known grew between 3000-4000 m in a limited area no more than about 15-17 km long and 5-6 km wide. The route that took them through these habitats rose from just over 2000m to around 4000 m, and it was also the only one we explored along in this range, following in their and Roger Ferryman's footsteps [fig.63].

The Swedish botanist and baron, Benkt Sparre (1918-1986), became known indirectly to us due to having spent time in Chile earlier with our great colleague and mentor of 1971/72, Carlos Muñoz of the Santiago Natural History Museum. Martyn Cheese and John, with their warped senses of humour, were always amused that the name Sparre is pronounced the way cockneys say 'sparrow'. He was an interesting individual who volunteered to fight for the Finns during their Winter War against the Soviet Union and was quite badly wounded (Wikipedia 2018a). When curiosity took him to study the South American flora later, he became interested in its violas and wrote a monograph of one of the non-rosulate sections. His original intention was to study the rosulates too, and many specimen sheets of them in Chilean and Argentinian herbaria include his identifications. But the genus *Tropaeolum*, which he monographed, and which was published posthumously (Sparre & Andersson 1991), caught his attention later and claimed priority. In addition he went on to make significant contributions to knowledge of the flora of Ecuador. During his 'Viola Period' though Sparre explored these north-western Argentinian Andes in the 1950s, and we found a number of his herbarium specimens in the Lillo herbarium there. Among them was one of *Viola evae* from the Sierra de Famatina. So far as we know, that was the only other collection of the rosulates from there until we came on the scene in 2007.



fig. 21: Arrowed - the river crossing between Chilecito and the Mina La Mejicana where Roger Ferryman told us he'd seen a rosulate viola. (8 Feb 2007. ARF)

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'Where flowers bloom so does hope'

(Lady Bird Johnson)

That's how things stood as we set out on the first of our four day trips up the mine road, this one on the fine, sunny early afternoon of the 7th of February, having driven round and over the low, cactus-clad south end of the Sierra during the morning. No more than a few occasional passing clouds marred the blue sky. With relatively little daylight remaining we closed our eyes to the attractive flora at the base of the foothills and headed straight for Roger's river crossing [figs.21, 38]. It was impossible to miss.

At that stage we hadn't the foggiest idea what Roger's species might be, let alone that it would prove new to science. But his was our only known exact viola location apart from the one we'd already pinned down earlier [fig.19] and a fairly inaccessible third we would negotiate on horseback later [fig.57]. Roger's was significantly nearer to our base in Chilecito than the upper reaches near the goldmine too, where most of Becker's species had been found. So we decided to head straight for those without stopping while the weather was favourable, and leave his for the morrow.

On the way up we passed a geological formation which took our breath away and rivalled the flowers for colour; a most delightful and unexpected surprise [fig.22]. Its highly appropriate local name was revealed to us later - La Falda de Gitana, The Gypsy's Skirt. As we drove higher, attractive Andean flowers began to appear that we hadn't already seen lower down. Among the first of these was *Oenothera versicolor* [fig.23], a recumbent Argentinian endemic which occurs above 2000 m in the five north-westernmost Andean provinces. It's singularly distinctive as being one of the few which breaks the near-monopoly of yellow flowers in the genus.



fig.22: This delightful rockscape on the upper Chilecito to Mina La Mejicana road rejoices under the highly appropriate name of 'The Gypsy's Skirt'. (6 Feb 2007. ARF)

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fig.23: Something a bit different in the evening primrose line. F.& W. sin num. *Oenothera versicolor* at Andean levels. (7 Feb 2007. ARF)



fig.24: Cerro Belgrano, at 6097 m, the highest peak of the Sierra de Famatina, La Rioja Province, and well visible from the top of the mine road here. (7 Feb 2007. ARF)



fig.25: F.& W.11357 *Pachylaena atriplicifolia* in rock detritus by the roadside. An appropriately coloured form in the proximity of a gold mine! (6 Feb 2007. ARF)

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With enough daylight still remaining, we soon reached the open heights [fig.24] and began our search, appetites already having been whetted further by a wayside colony a little lower down of a superb golden colour form of *Pachylaena atriplicifolia* [fig.25]. The species has a lengthy distribution in both Argentina and Chile from northern Patagonia up to here in the Atacama sector. We first met it in 1972 at Lagunillas in the Cordillera de Santiago, where it may be seen in a range of subtle, restrained pinkish, salmon and pale maroon shades. Elsewhere though the tendency is for monochromatic colonies such as here at Famatina, with pure white, deep reddish orange and bright pink also noted.



fig.26: In the wild on the Sierra de Famatina, but familiar in cultivation, F.& W. sin num. *Geranium sessiliflorum*. (7 Feb 2007. ARF)

Geranium sessiliflorum [fig.26], here at the upper elevations around 4000 m, is well known in cultivation, of course. John first met it as a schoolboy on Robinsons Nursery in Kent. But its remarkable spread in the Southern Hemisphere might come as surprise. Perhaps best known from throughout New Zealand, usually at low elevations (Mark & Adams 1973), it also occurs in Tasmania and SE Australia (Costin *et al.* 1979, Moore 1983), and extends from Tierra del Fuego (Moore 1983) to the high tropical Andes of northern Peru at over 4500 m (Taylor & Schmidt 1993)! Scarcely less remarkable is that it remains essentially uniform morphologically throughout. Nearby, among occasional clumps of a tough little grass, grew pretty, refined *Oxalis famatinae* subsp. *famatinae* [fig.27], another Argentinian endemic, which we would soon meet again in finer fettle on the Infernillo Pass further north. The red diffuse halo in the throat is its special attraction. *Calandrinia acaulis* [fig.28] formed part of this small upper Andean community, and despite being nothing outstanding from an aesthetic point of view was particularly welcome because its small section, the *Acaules*, happens to be one focus of our particular areas of study.

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fig.27: F.& W. sin num. *Oxalis famatinae* subsp. *famatinae* would not disgrace any collection of mountain flowers. (7 Feb 2007. ARF)



Right, above - fig.28: F.& W. sin num. *Calandrinia acaulis*, a representative of a group we study, was a welcome encounter. (7 Feb 2007. ARF)

fig.29: Even less spectacular Nototriche species such as F.& W.11516 *N. kurtzii* here rank among the choicest of the world's mountain flora. (12 Mar 2007. ARF)



But all these faded into insignificance beside the last two we encountered rather higher up still on rounded ridges among the almost bare stones and rocks - the upper limit of flowering plants

[fig.31]. Although the first we saw was no more than a rosette out of flower, we identified it immediately and jumped for joy - a nototriche! This magnificent and numerous high Andean genus shares top spot for us as a desideratum together with the violas, followed not far behind by the best of the gentianellas. In fact when in 1970 we first contemplated exploring the Andes, our potential destination was a very close toss-up between Chile for the violas and Peru for the other two. Chile only 'won' because we considered plants from there more likely to adapt to cultivation. But by way of

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compensation we did come across three nototriches, one in Chile, also a second in Bolivia and the third in Peru itself while on our way home. We've steadily increased the count since then, and here were two more to add. To encounter the less eye-catching of them, white *Nototriche kurtzii* [fig.29], in flower we had in fact to wait until our final visit in March. As can be seen from our photo though, the other, *N. niederleinii* [fig.30], is quite something else altogether. The extraordinary coloration of the large stemless flower suggests some transparent greenish glass goblet with the dregs of a recently drunk cream chocolate liqueur still running down and staining the interior. The almost identical *N. pulverulenta* is found further north as well as across the border there in Chile. The two here exist nowhere else but in this immediate sector of La Rioja Province.



fig.30: Several nototriches have almost unbelievable coloration, like F.& W.11358 *Nototriche niederleinii*, high up here in the Famatina range. It made our day. (7 Feb 2007. ARF)



fig.31: Nototriche terrain on Cerro Famatina, a minor peak to the south of dominant Cerro Belgrano, Chilecito Department, La Rioja Province, NW Argentina. (7 Feb. ARF)

Light began to fade on our return down to Chilecito, which was providential as, like others of its genus, white *Nicotiana paa* [fig.32], which stopped us low down, only opens from evening to early morning. Its long-tubed white flowers with their powerful scent are evolved to attract night-flying lepidoptera, in particular hawkmoths. And to pun its curious three letter epithet, this particular tobacco is certainly well above par!

For all the exciting and promising flora we came across during that first day - no damned elusive violas once again - so no surprise there either!



fig.32: You either have to be an early or late bird, as we were here on the way back to Chilecito, to catch F.& W.11359 *Nicotiana glauca* in flower. (7 Feb 2007. ARF)



fig.33: Near Chilecito - a landscape of the eastern exposures of the low Sierra de Famatina foothills under cloudy skies at the start of our second day. (8 Feb 2007. ARF)

Not open all hours

We set out the following morning under overcast skies, but with no apparent immediate threat of rain [fig.33]. Our ultimate objective for the day was Roger's river crossing. This time though we gave full attention on the way there to the various showy climbers, herbs and shrubs which decorate the lower bosky matorral wayside and stony, seasonally dry floodwater courses alongside.

The small-flowered but prolific dainty white *Clematis montevidensis* [fig.34] - as also featured in IRG 107 (Watson & Flores 2018b) - has been a quite familiar sight from time to time in the lower woodlands and scrub during our travels in northern Argentina, and here it was again. Another old friend, which is frequent in open lowland and subandean sectors hereabouts, is the colourful *Zinnia peruviana* [fig.35]. In fact it also occasionally reaches 3000 m and is recorded from no fewer than eleven Argentinian provinces from Mendoza northwards (Sáenz 1999)! It was the first species of the genus to be introduced, ranges from Mexico down to this southern limit, and is an important genetic contributor to our garden hybrids. But the journey along the mine road was the first time and place we'd run across *Gomphrena pulchella*, which can be a wiry-stemmed herb or subshrub, here as its subspecies *albisericea* [fig.36]. The delicate starburst beauty of its globular heads of pink tubes with tiny contrasting orange petals at the tips bowled Anita over. It took us a while to work out what it was, but occasional familiarity with other far more ordinary members of the genus eventually got us there, and the identification below genus level followed when we got back home. The rare, endemic small shrub *Justicia riojana* [fig.37] rounded off the selection of lowlanders we recorded before reaching the one-and-only river crossing [fig.38]. It's only known from this and an adjacent province (Ezcurra 2019) and belongs in the Acanthaceae family. The genus contains several attractive smallish woody species with labiate flowers, of which we've also seen the outstanding red-flowered *Justicia xylosteoides* in the next Andean outlying range to the north.

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fig.34: F.& W. sin num. *Clematis montevicensis* is one of several climbers which grace the matorral of lower Sierra de Famatina. (8 Feb 2007. ARF)



fig.35: F.& W. sin num. *Zinnia peruviana*. This, one parent of the garden favourite, can often be seen in colourful numbers in these NW Argentinian mountains. (8 Feb 2007. ARF)



Left - fig.36: Gomphrena was a name that had never excited us until we met F.& W. sin num. *G. pulchella* subsp. *albisericea* a bit beyond Chilecito. (8 Feb 2007. ARF) Right - fig.37: F.& W. sin num. *Justicia riojana* on the lower mine road pretending to be a lobelia. (8 Feb 2007. ARF)

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fig.38: The 'Roger Ferryman ford' between Chilecito and Mina La Mejicana where he told us the viola is. This time we searched and searched. (8 Feb 2007. ARF)

We two separated, searched likely potential habitats on the north side of the crossing in vain for a good while, John higher up, Anita down by the ford, and were about to give up and continue to look on the other side of the water, when Anita let out a

triumphant cry. She'd spotted the first few in the detritus gravels near the river, no mean task, as they were very effectively camouflaged [fig.39]. Once we'd 'got our eye in' though, it didn't take long to locate more, and on both sides of the ford. All was not plain and straightforward though. They were in bloom alright with one or a few white flowers per mature rosette, but these were shut tightly like a book [fig.40]. Due to our dawdling and lurching leisurely along the way it was now well into the afternoon. We realised it happened to be one of the section *Andinium* species which - like the shops - has set opening and closing times! It meant an earlier return the following day. Unwilling to give up though without an exhaustive search, before turning back we continued along the farther south side, heading west and slightly up until no more violas were present, a point signalled by a fetchingly pock-marked, pale, pyramidal rock [fig.41].



fig.39: F.& W.11362, the new inconspicuous viola, as first spotted by eagle-eyed Anita. (8 Feb 2007. ARF) See how many you can spot and check the illustration on the final page of this article.

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fig.40:
F.& W.11362, the
new viola tells us,
"You're too late.
We're closed.
Come back
tomorrow." (8 Feb
2007. ARF)



fig.41: Another of the appealing
geological phenomena along the way,
this one marking the highest point up the
road of the new viola type site.
(9 Feb 2007. ARF)



Gotcha good and proper!

So off we went on our third try [fig.42]. Again the day dawned dull but thankfully dry, and remained so with occasional bright moments. Although we set out early to be sure to catch our quarry in full floral spread this time, we still couldn't resist a couple more tempting lowlanders we'd somehow missed previously. It's always a bit special to come across something in the wild which also decorates our garden, in this instance *Maurandya antirrhiniflora* [fig.43]. We have both the violet-blue form, as here and the pink. It must be admitted that it seeds so freely with us it's something of a pretty nuisance, and although it hurts, we continuously have to yank out quite a lot. We'd give a lot to walk out of our door at home and be hit

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in the eye as well by the other climber we added to our photographic records that morning, *Philibertia gilliesii* of the Apocynaceae [figs.44, 45]. That's right, the periwinkle family, believe it or not! (Although of course that also contains those fantastic stapelias and the like.) So far as we know the philibertia isn't in cultivation though. We'd seen its subtle, elegant lampshades four years previously, but as a small plant spread out flat on bare ground, when the interior of the flowers was hidden. Here large plants clambered up above us through sparse, twiggy supports, showing off their ornate blooms to best advantage.

fig.42: Our faithful jeep in view. Off we go again for the third day's sortie into the Sierra de Famatina - and under cloudy skies again. (9 Feb 2007. ARF)



fig.43: F.& W.11363 *Maurandya antirrhiniflora*, known by its generic synonym of *Asarina* when acquired for our garden years ago. (8 Feb 2007. ARF)



fig.44: Few plants have surprised and delighted us more in NW Argentina than the ornate F.& W.11360, *Philibertia gilliesii*. (8 Feb 2007. ARF)

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fig.45: A closer shot of F.& W.11360 *Philibertia gilliesii*, this against the light illuminating the interior of the flowers. (8 Feb 2007. ARF)

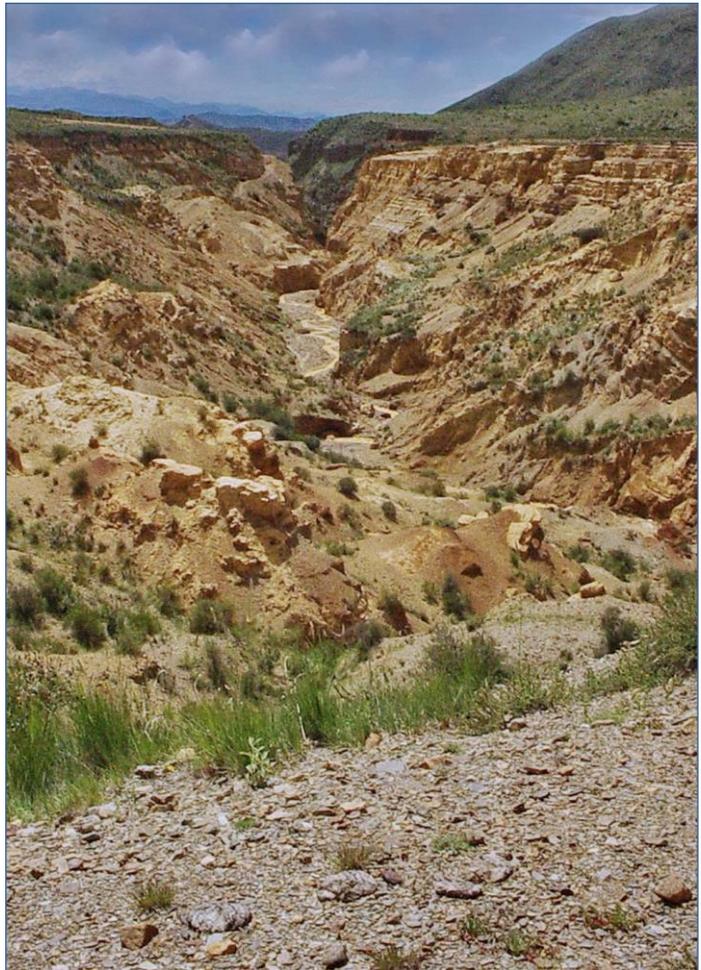


fig.46: Once again we reached the dramatic yellow canyon by the river crossing, this time with the object of nailing our viola with open flowers. (12 Mar 2007. ARF)

Below - fig.47: A double rosette specimen of the F.& W.11362 *Viola* sp. nov. type population - with flowers open now, thank goodness. (9 Feb 2007. ARF)



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Despite this pair of distractions we reached the riverside location [fig.46] in good time to find 'Roger's viola' wide awake now and flaunting up to four or five violet-shaped white flowers per mature plant, though usually fewer [fig.47]. The low number is due to their opening in succession over a considerable period of time. To our surprise it unquestionably belongs in the *V. volcanica* alliance of section *Andinium*, only represented hitherto in these mountains of NW Argentina by the markedly different *V. evae*. As a matter of significance, that species is also restricted to this Famatina range. The most closely related physically are *V. roigii* [fig.75] and *V. flos-idae* [figs.72, 73], both known from neighbouring San Juan Province to the south. The former has a restricted distribution in a different outlying Andean range some 250 km to the south, while the nearest recorded population of the latter lies about 170 km due west. The next big question: Was it one of those two or not? The answer to that also had to wait until we were back at home and able to consult our data files and literature.

And so on to the second half of our third day:

Then all the way to the end again

With the herbarium collection and photography soon in the bag, there was still plenty of time left to explore. We decided to continue on upwards towards the mine in the footsteps of our first sortie [fig.48].



fig.48: After completing our viola collections and photos we carry on following the river course up towards the higher flora nearer the La Mejicana mine again. (9 Feb 2007. ARF)

The Mina La Mejicana road happens to be of singular relevance to alpine gardening. Hieronymus (1881) discovered well-known *Sisyrinchium macrocarpum* along the way, which he published as a new species. In general desirable Andean plants have proved difficult, intractable, or downright impossible to grow, as the present authors know only too well. No more than about a score or so have established themselves securely and permanently with us in cultivation over time, and *S. macrocarpum* happens to be one of them. Of course, considerably more may be found in small numbers or singeltons in the *TLC of skilled amateur enthusiasts and botanical gardens, especially in recent times as a result of the wave of collectors and seed providers which began towards the end of the last century. But such rarities have no more than a foothold in general horticulture at best. Even for those which last for more

than a year or two - take away the devoted attention which sustains them and hey presto ... "EC", extinct in cultivation!
*Tender loving care.



fig.49: F.& W.11368 *Mutisia kurtzii* var. *anomala*. We illustrated the type variety with green, narrow leaves in IRG 107. (9 Feb 2007. ARF)

Well on our way up we noticed another we'd met before in these parts, also described in IRG 107, albeit as a different variety. This was the shrubby, unusual *Mutisia kurtzii* var. *anomala* [fig.49] with oval, leathery, glaucous-backed leaves - narrow and all-green in the type variety (Watson & Flores 2018b) - and scaly, cigar-shaped heads, orange yellow at the end shading back to dull, dark reddish at the base and with a tubular thrust of long yellow stamens. In fact the route was strewn with familiars from hereabouts, the next being pink *Oxalis argentina* [fig.50], gracefully elegant, refined

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and 'knowing its place', unlike a certain other pink oxalis we wot of! Yet again, it's endemic to these north-western Andean provinces of Argentina. Then followed a real beaut that would grace any choice bulb collection, *Hieronymiella marginata* [fig.51], first introduced in our AGS article under its synonym of *H. argentina* (Watson 2009), then described again in our aforementioned recent IRG coverage (Watson & Flores 2018b). As can be seen from the illustration, like the chuquiraga and so many plants in South America, this amaryllid is a hummingbird symbiont. The classic (but by no means unique) formula for that is tubular flowers in some shade of red, usually pendant as in this case, or horizontal. Although a previous acquaintance on several occasions, the irid *Mastigostyla spathacea* [fig.52] here proved a tougher nut to identify due to its considerably shorter stature than any we'd seen previously. However, no similar species are known from these provinces, and the flower itself was identical, so we've marked it down as a winsome dwarf form. In the damp ground beside a small upper stream [fig.53] and best known of all for us was stemless *Erythranthe* (syn. *Mimulus*) *depressa* [fig.54]. Unfortunately we've never been able to revisit any of its habitats when it was in seed, as it would surely adapt to cultivation just like other species of the genus from down here. As can be seen, with its prostrate carpeting habit and big rich yellow flowers, red blotched in the throat, it would certainly be a winner alongside our pink *E. naiandina*.



fig.50: The buds of refined F.& W.11364 *Oxalis argentina* have the pendent elegance of a dodecatheon. (9 Feb 2007. ARF)

Below - fig.51: If you'd like to see the spectacular little red-tailed comet hummingbird, F.& W.11365 *Hieronymiella marginata* is a likely nectar provider. (9 Feb 2007. ARF)

fig.52: F.& W.11366 *Mastigostyla spathacea*. It goes without saying that this genus is the Andean equivalent of moraeas and irises. (9 Feb 2007. ARF)



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fig.53: A small side-stream at high elevation near where we found *Erythranthe depressa* flourishing in the dampness of its overspill. (9 Feb 2007. ARF)

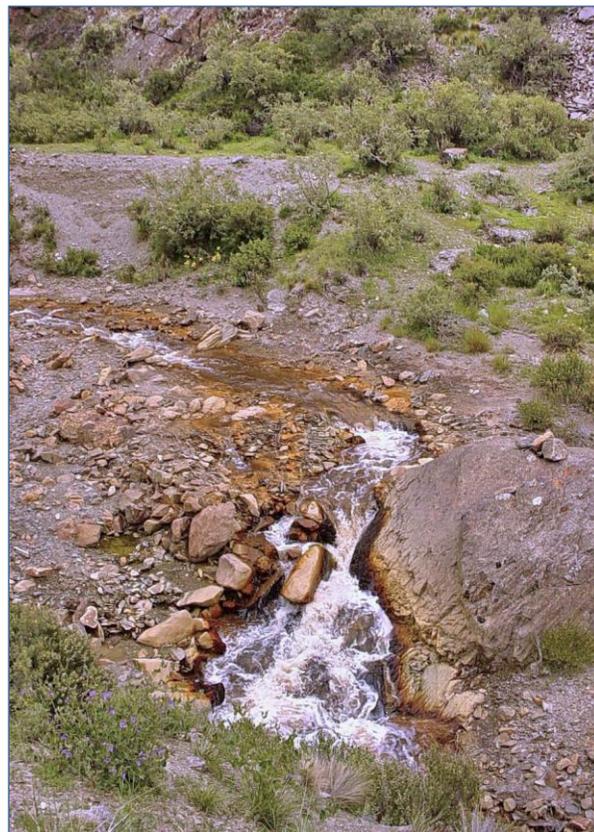


fig.54: F.& W.11367 *Erythranthe* (syn. *Mimulus*) *depressa*, a species which first impressed John when he encountered it in north-central Chile in 1971. (9 Feb 2007. ARF)

The last find at those higher elevations was at least something quite new for us. *Gentianella multicaulis*, photographed in a damp wayside lawn [fig.55], may not be a spectacular red species like some of the Peruvians in its genus, but it's quietly attractive in its way with a neat, short habit and starry flowers of palest clear blue.

That was it for the three day visit apart from one last fond farewell on the way down. Morning glories are essentially vigorous climbers, but *Ipomoea plummerae* [fig.56] is the exception that proves the rule. It spreads no more than a short distance over the ground and overwhelms its discreet foliage with great flaring convolvulus trumpets of a rich, luminous electric-violet shot through with a pinky sheen.



fig.55: Pretty enough little F.& W.11518 *Gentianella multicaulis*, albeit not one of the showiest of Andeans in the genus. (13 Mar 2007. ARF)



fig.56: Neat, prostrate F.& W.11206 *Ipomoea plummerae* cries out to be introduced. But the days of seed collection seem to be killed off by legislation. (9 Jan 2006. ARF)

Afterglow

On 12th March, four weeks and three days later, we returned on a double mission: to collect whatever worthwhile seed we could, and to have one last look for the only Becker viola at Famatina with a completely unequivocal, precise locality as understood nowadays. The heights in question are situated to the south of the mine road, about seven and three-quarter kilometres further 'up the lane' from the new viola's type site towards the top, itself about sixteen and a half kilometres from said viola [fig.63]. They form a flattish, very slightly undulating plateau called Cerro Mesada, which translates rather enigmatically as 'The Worktop Mountain' [fig.57]. It's reached after a rugged climb of some 800 m over a distance of about two kilometres. To achieve that on foot, followed by an extensive search for our quarry, and then return down to the jeep, all in one day, realistically wasn't on the cards. The first two days were spent gathering seeds and taking in the few plants still in late flower, but we also made extensive inquiries as to whether someone, anyone, could help us reach the 3500 m upper level of Mesada. As luck would have it, on the second of those sorties we'd stopped and spoken to a local who knew of a herdsman who might act as guide for a horseback trek. We contacted him, he was willing, available, and was contracted for the following day, the 14th.

When we met up with our guide by the road at the start of the trek, conditions were far from promising. The upper levels of the mountains above us were swathed in dense clouds, which, when we were among them, translated for John into what he'd been accustomed to as dense, clammy, white winter fog during his childhood on the outskirts of London. But our mounts at least got us up there without incident. We had no compasses or whistles though. It meant we dared not venture out of sight of one another for fear of getting lost. However, Anita immediately set off to the limit of vision, scouring all clearings between the rocks and wiry grasses as she went, but drew a blank. John,

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meanwhile, decided to assiduously quarter the ground close to where the horses were browsing [fig.57]. A rocky outcrop yielded a plant of a very neat, mat-forming, white daisy-flowered little Andean composite, *Xenophyllum incisum*, which raised our hopes, but nothing of note followed.



fig.57: A foggy day at the office! Our mounts grazing on cloud-wreathed Cerro Mesada, Sierra de Famatina, Chilecito Dept., La Rioja Province, NW Argentina. (14 Mar 2007. ARF)

Now you see it ... now you don't

All seemed hopeless, and in downcast mood we were preparing to give up, with John wandering forlornly about over a quite barish patch of ground covered in pale lichens like stranded, bleached seaweed. A tiny green starry rosette caught his eye. Its particular appearance immediately rang bells for him - a rosulate viola! Closer examination revealed a small whitish flower close to the heart of the rosette [fig.58], and we immediately recognised it as one we'd already registered well to the north on the border between Tucumán and Salta provinces. Notwithstanding that it wasn't different, we were jubilant and filled with relief. A fine toothcomb search revealed a small handful of others at the same spot. Anita prepared for the return down while John photographed them. He told her when he'd finished, and she went over to photograph the best one - but couldn't find it, or most of the rest! So we hunted as best we could and came up with the idea of marking all we could discern with shiny yellow toffee papers to give an idea of the colony as a whole in a photo [fig.59]. As with much of the flora recorded from that project, identification had to wait until we were back in our 'office'. For a good while we supposed it to be an undescribed species. However, during a recent thorough revision of violas from northern Argentina, it turned out to be *Viola triflabellata*, one of the best known from there. To confirm our determination beyond doubt, Becker himself published details of one of the two collections by Kurtz from Cerro Mesada as that taxon (Becker 1927). Comically, we'd also erroneously identified specimens collected elsewhere as *V. triflabellata*, when they actually **are** without doubt a novelty. Watch this space.



fig.58: Diminutive F.& W.11525 *Viola triflabellata* sitting pretty among lichens on Cerro Mesada, Sierra de Famatina, where it was recorded by Becker. (14 Mar 2007. ARF)



fig.59: Shiny gold toffee wrappers indicate the highly elusive F.& W.11525 *Viola triflabellata* colony (arrowed) on Cerro Mesada of the Sierra de Famatina. (14 Mar 2007. ARF)

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We'd scarcely mounted and started the ride back when the heavens opened and those clouds unloaded, albeit briefly, but as enough of a downpour to almost soak us to the skin. As if that wasn't enough, John's beast of burden decided it had had enough and went on strike. It didn't just stop and stand stubbornly though, it doubled up its legs and rolled over, partly on top of him! Fortunately no damage was done, although he was obliged to walk the rest of the way down ... not altogether unwillingly!

As a last quite unexpected bonus we found another colony of our new viola while crossing a dry flood torrent bed quite close to the road and our jeep [figs.60, 63]. The plants there are all green-leaved, as opposed to the type population, which is mainly brownish [figs.47, 64, 76] and only rarely green [fig.40].



fig.60:
F.& W.11527, the new viola. An individual of the all-green rosetted second population further up the La Mejicana mine road. (14 Mar 2007. ARF)



fig.61: The provinces of Argentina, with La Rioja, the only location of *Viola xanthopotamica*, outlined in red.



fig.62: La Rioja Province, Argentina, with the general sector where *Viola xanthopotamica* was found indicated by a pink oval.

Fieldwork summary

So what was the balance after our four searches? Of six violas recorded by Becker in the area covered, we found just one, *V. triflabellata*, which, as noted, we'd already got under our belts from elsewhere. Ironically, it turned up on Mesada, the homonymous type site of *Viola mesadensis*, the species we'd actually gone up there to look for. That's rosulate violas for you. Needles in haystacks might be easier to find! On the positive side though we registered a new species at two locations lower down by the roadside, which somehow or other those historic botanists had walked or ridden past without noticing. It's described immediately below.

Taxonomy

Viola xanthopotamica J.M. Watson & A.R. Flores, sp. nov.

[figs.22, 23, 44, 60, 64-68, 74, 76]

Type: ARGENTINA. La Rioja Province, Chilecito Department, Sierra Famatina, both N and S sides of ford across river beside the road from Chilecito to Mina La Mejicana near Cerro Belgrano, 29°07'26"S 67°39'50"W, 1935-2020 m, 8 Feb 2007, leg. A.R. Flores & J.M. Watson, F.& W. 11362 (holotype CONC, isotypes SGO, herb. Flores & Watson).

Diagnosis: The two taxa immediately related to *V. xanthopotamica* are *Viola flos-idae* Hieron. and *Viola roigii* Rossow. It differs from the former by its eglandular lamina undersurface and entire, not trilobed, style crest: and mainly from the latter by marginal crenations of four per side, not two to three; by four, not three, lateral veins on either side of the central vein; and by the smaller corolla rarely equalling and never exceeding the lamina area.

Description: *Life form* perennial, rosulate evergreen hemicryptophyte. *Rootstock* axial, to ca. 8-10 cm long x ca. 1.5-5 mm dia. at junction with caudex, subligneous, with short branching fibrous feeder roots at tip. *Caudex* ca. 1.5 cm, usually simple or twin-branched, rarely more, exceptionally up to five, enveloped in vestiges of dead vegetation. *Plant* with solitary or few rosettes, a maximum of close-set five recorded. *Rosette* ca. 2.5-6 cm dia., adpressed to ground, Foliage arranged obscurely spirally, closely imbricate, cryptic olive-brown, dull light green or intermediate, slightly depressed towards centre of face. *Leaves* subspathulate, ca. 1-3 cm when mature: *stipules* 3.5 mm, basal, narrowly ovate to lanceolate, acute, hyaline, margins laciniate-fimbriate with divisions directed apically; *pseudopetioles* ca. 5-17 mm x 0.5-0.75 mm, plane, thin, with broad, glabrous, hyaline margins; *lamina* 5-13 x 2-6.5 mm, ovate, obovate, oblanceolate or subrhomboid, cuneate to pseudopetiole; face alveolate reticulate with 4 lateral veins per side; undersurface smooth, eglandular; margin with 4 obtuse crenations on either side, shortly ciliate towards base, or glabrescent to glabrous on same plant; apex acute. *Anthesis* successive, prolonged. *Flowers* ca. 5-6 mm high x 4-6 mm wide, axial, solitary, forming ring on face of rosette, with maximum of four open simultaneously as seen. *Peduncle* ca. 9-10.5 mm, shorter than surrounding leaves; *bracteoles* adnate with base of peduncle for 2-3 mm, free above for 3.5-4 mm, narrowly linear with acute apex, hyaline. *Calyx* 4 mm; *sepals* entire, acute, slightly scaly-spurred to rear, borders hyaline; *superior sepal* 2.5 x 0.7 mm; *lateral sepals* 2.5 x 1 mm: *inferior sepals* 3.7 x 1.5 mm. *Corolla* white, sometimes very faintly flushed pinkish or bluish, strongly and closely veined dark violet-blue on basal half of inferior petal, and as central vein to midway on lateral and superior petals; inferior petal with pronounced pale yellow tongue-shaped throat marking; reverse of all petals either all-white or white with faint, broken longitudinal median line; *superior petals* 5.3 x 1.5 mm, obovate, cuneate to base, apex rounded; *lateral petals* 5.2-6.3 x 2 mm, irregularly obovate, cuneate to base, upper margin straight, horizontal; lower margin downcurved; apex subtruncate with rounded edges; face with short, stout, translucent white clavate hairs as tuft at centre of basal half and sparsely along top margin, where suberect; *inferior petal* 7-7.2 x 5 mm, obcordate, margins upcurved towards base; apex shallowly emarginate with small mucron in sinus; 2 small, opposite circular patches of dense, short

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pollen-trap hairs basally at mouth of spur; *spur* 2-2.5 mm × 2 mm, stout, cylindrical. *Androecium* and *gynoecium* concealed within throat; *anthers* 1.5 mm, inferior pair with 1.2 mm tapering, curved nectar spurs; connectives shorter than anthers, 0.8-1 mm, dull, dark orange-brown; *style* short, geniculate, clavate; *stigma* at front of style head as porrect beak; *style crest* apical, curved-flabellate, entire. *Fruit* 4-6 mm, orbicular, tri-valved capsule; *seeds* 1.5 mm, lacrimiform, mottled black and brown.

Field note: Open area of the flatter, lower valley of a west-to-east flowing small mountain river passing through a shallow gorge of local yellow sedimentary strata. It is distributed as small groups or scattered individuals among stones and rock fragments forming level beds close beside the river, and in pockets of low outcrops near and somewhat above the river, the immediate habitat otherwise almost bare, with an occasional few sparse Poaceae, but devoid of any other evident petaloid flora.

Other material examined: ARGENTINA. La Rioja Province, Chilecito Department, Sierra Famatina, S side of ford across river beside the road from Chilecito to Mina La Mejicana near Cerro Belgrano, 29°07'26"S 67°39'50"W, 1935-2020 m, 13 Mar 2007, leg. A.R. Flores & J.M. Watson, F.& W. 11523 (paratypes CONC, SGO, herb. Flores & Watson). ARGENTINA. La Rioja Province, Chilecito Department, Sierra Famatina, road from Chilecito to Mina La Mejicana near Cerro Belgrano, N base of Cerro La Mesada, 29°05'06"S 67°43'05"W, 14 Mar 2007, 2770 m, leg. A.R. Flores & J.M. Watson, F.& W. 11527 (paratypes CONC, herb. Flores & Watson).

Distribution: *Viola xanthopotamica* is an endemic of Argentina and La Rioja Province. It is only known from one scattered and fairly sizeable population, the type, and a considerably smaller colony, both in the same mountain valley to the west of Chilecito. The distance between the two is approximately 7.75 km [fig.63].

Overall environment and habitats: Both populations are situated in the valley of a small river running down from the upper elevations of an eastern outlying Andean range. Due to the Atlantic exposure, the area receives ample precipitation, resulting in a diverse flora of dense, shrubby matorral lower down and a biodiverse Andean flora above. The new species grows in locally bare levels of rock fragments and among low outcrops at the base of the valley. The higher situated population of the two is on the southern side in the steep-flanked mountainous sector, exposed to sun and light from the north. The main type population is spread across an open area of the wider, more level basin of the river below the main peaks where it passes through the surrounding hilly matorral.

Phenology: The new species blooms successively over a considerable period, opening just one or a few flowers at a time. It was seen in early February, already well into anthesis. One month later it was still producing flowers, as well as ripe seed from earlier floration. It is therefore presumed to flower between mid-January to the middle or end of March, with seed dispersal following approximately one month after each flower.

Etymology: *xanthopotamica* is a combination of the Greek substantives *xanthos* - yellow, and *potamos* - river. The epithet connects the viola with the immediate surroundings of its type locality, where the narrow river it is situated beside passes through a dramatic yellow, mineral-stained, stratified rockscape which forms the immediate valley sides, and the water itself is the same conspicuous colour [figs.21, 38, 46, 69].

Proposed conservation status: Both known populations grow alongside - or in very close proximity to - the road into the Sierra de Famatina leading up to the main currently inactive mine. Strong interest by a major international corporation exists to exploit the gold and other minerals by means of modern technology (see below). At present an agreement with the Argentinian government has been suspended, but only suspended. If it is renewed and the existing road is developed for

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access, part or all of the new species' colonies could be destroyed by a combination of widening, construction of a bridge over the river, extraction of materials for undersurfacing, and wayside dumping of excavated ground. Taking this realistically potential situation into account, we consider that the species is more than simply vulnerable, and should undoubtedly be given the International Union for Conservation of Nature classification of EN, endangered (IUCN 2012).

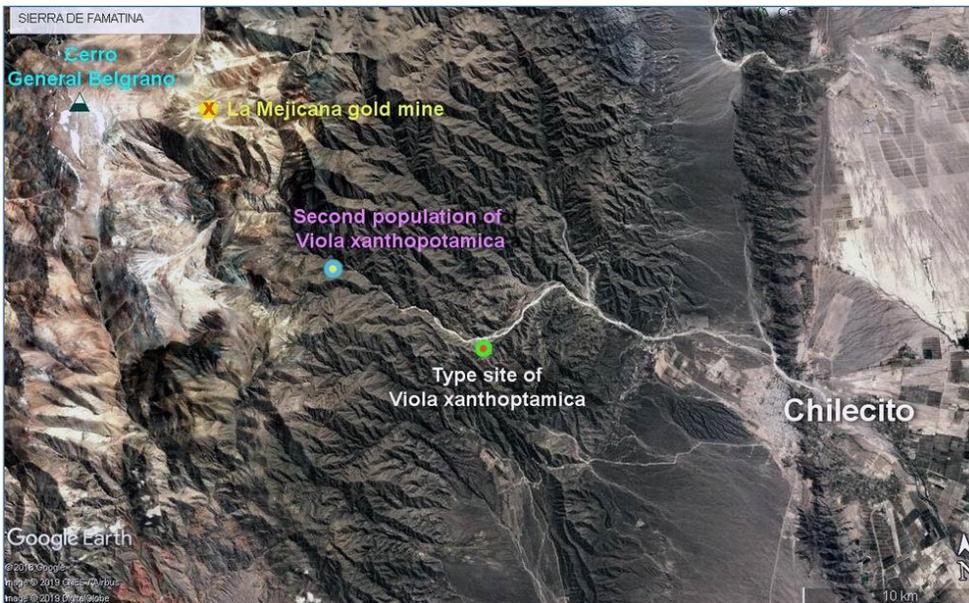


fig.63: The mountain route from Chilecito to Mina La Mejicana and the two known locations of *Viola xanthopotamica*. (Courtesy of Google Earth)



fig.64: A fine type population individual of F.& W.11362 *Viola xanthopotamica*. Chilecito to Mina La Mejicana, Chilecito Dept., La Rioja Prov., Argentina. (8 Feb 2007. JMW)



fig.65: F.& W.11362 *Viola xanthopotamica* type specimen, showing axial root and rosette undersurface. (8 Feb 2007 ARF)



fig.66: F.& W.11362 *Viola xanthoptamica* type specimen with twin rosettes and branched caudex. (8 Feb 2007. ARF)



fig.68: F.& W.11362 *Viola xanthoptamica* flower with upper petals and one lateral removed to reveal the entire (white) style crest. (9 Feb 2007. ARF)

fig.67: Flower of F.& W.11362 *Viola xanthoptamica*. The tufts of translucent capitate indumentum on the lateral petals are well in evidence. (6 Feb 2007. ARF)



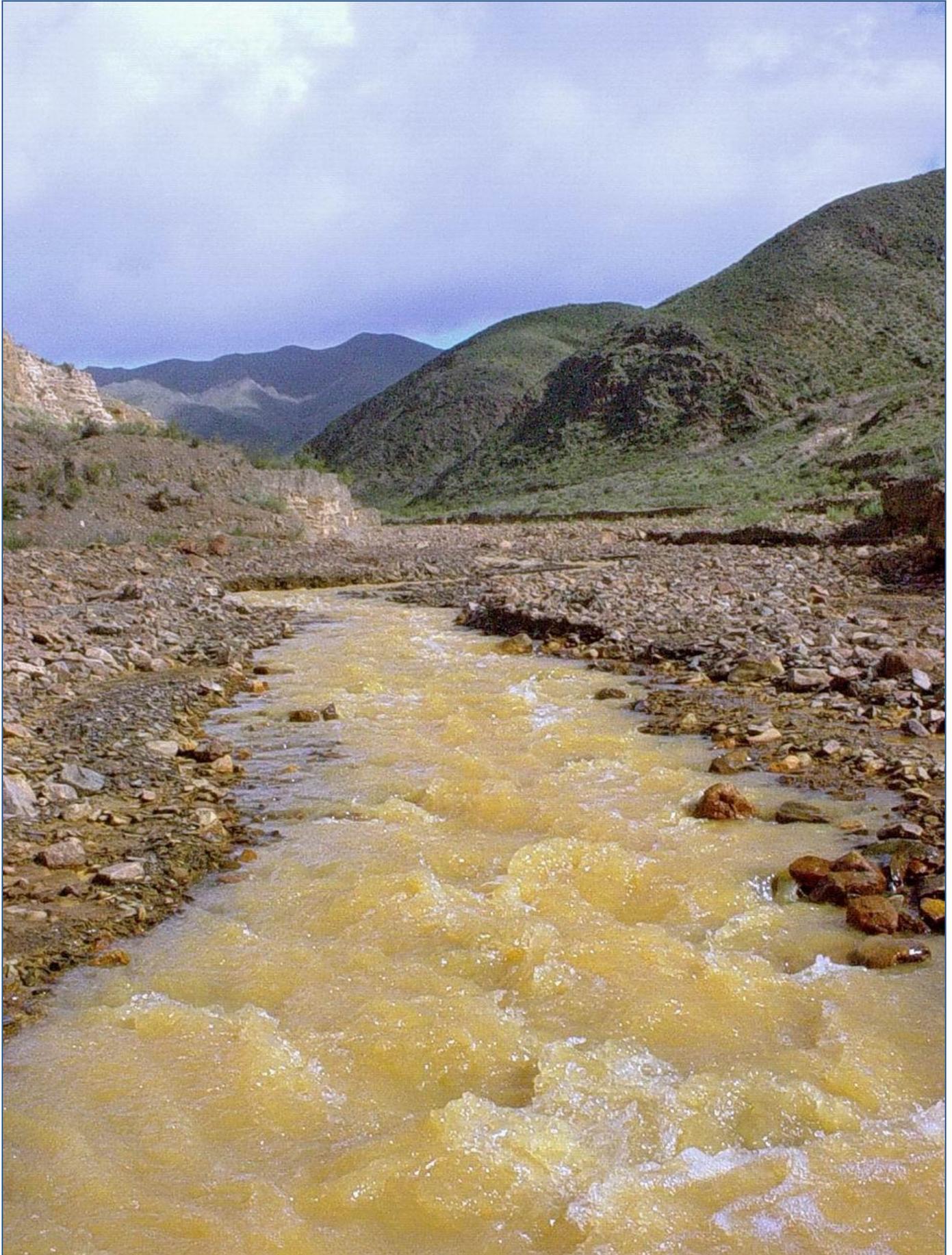


fig.69: Type site of *Viola xanthopotamica* and the yellow river it's named for. [Readers may perhaps notice similarity to the fictional yellow brick road!] (8 Feb 2007. ARF)



fig.70: F.& W.10657 *Viola volcanica*, Paso Cordoba, Neuquén Province, Argentinian Patagonia.
(29 Dec 2002. JMW)



fig.71: *Viola lullailacoensis* (Photo anon, ex Internet)



Fig.72: *Viola flos-idae*. (28 Jan 2013. Courtesy of Instituto Darwinion, Buenos Aires)



fig.73: Undersurface of *Viola flos-idae* leaves showing conspicuous dark linear glands. (28 Jan 2013. Courtesy of Instituto Darwinion, Buenos Aires)

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fig.74: Eglandular undersurface of F.& W. *Viola xanthopotamica* leaves. (8 Feb 2007. ARF)



fig.75: *Viola roigii*, showing its larger flowers and smoother-surfaced leaves with three lateral veins and three crenations per side. (Roberto Kiesling)



fig.76: F.& W.11362 *Viola xanthopotamica* type population. Note small flowers and strongly reticulated leaf with 4 lateral veins and crenations per side. (9 Feb 2007. ARF)

Viola* and its section *Andinium

Cosmopolitan *Viola* contains some *615-660 known species in 16 sections, (Wahlert *et al.* 2014, Watson & Flores ined.). When as yet unpublished but accepted species are included, the **largest is section *Andinium*. It is also one of the most ancestral, if not the most ancestral, as it separated very early from the rest of *Viola* in southern South America, where the genus evolved (Clausen 1929, Ballard *et al.* 1999, Marcussen *et al.* 2012, Marcussen *et al.* 2015), and has remained there, from the equator southwards. Its species, known colloquially as rosulate violas, have adapted exclusively to the uplift and volcanism of the Andes, together with attendant more recent desertic and mediterranean geoclimatic conditions. These circumstances explain why most of its taxa are so uniquely unlike the rest of *Viola* (Watson & Flores 2012, 2013a, 2013c).

***Note 1:** Updated figures as also based on our latest personal research.

** **Note 2:** 105-106 published taxa as listed in IPNI (2019) are currently recognised here, as well as the present species, and at least a further 36 wait to be described or collected.

An informal division at infrasectional level results in a number of alliances, most of them very distinctive. Two are considerably more numerous than the rest, the largest being what we call the broad *Viola volcanica* alliance, which itself splits naturally into smaller divisions. The basic alliance is circumscribed by flexible, non-linear leaves, these neither succulent or rigid; and taxa which also possess some combination of crenate and ciliate margins to the leaves, lamina faces more or less reticulate, apical style crests and dark glands on the undersurface (Watson & Flores ined.). It is to this taxonomic grouping that *V. xanthopotamica* belongs.

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Key to differentiate broad leaved, crenate-margined *Viola volcanica* alliance species of *Viola* sect. *Andinium* with alveolate-reticulate lamina faces, ciliate margins, and apical style crests.

Species: *Viola aurantiaca* Leyb., *Viola chillanensis* Phil., *Viola congesta* Gillies ex Hook. & Arn., *Viola exilis* Phil., *Viola evae* Hieron. ex W. Becker, *Viola farkasiana* J.M. Watson & A.R. Flores, *Viola flos-idae* Hieron. [figs.72, 73], *Viola llullaillacoensis* W. Becker [fig.71], *Viola mesadensis* W. Becker, *Viola philippii* Leyb., *Viola roigii* Rossow [fig.75], *Viola volcanica* Gillies ex Hook. & Arn. [fig.70], *Viola xanthopotamica* J.M. Watson & A.R. Flores.

1. Face of lamina shortly pilose ... 2.
 - Face of lamina glabrous ... 3.
2. Flowers orange-yellow. (Endemic of central Chile) ... *Viola aurantiaca*
 - Flowers pale whitish pink. (Endemic of Altiplano of northern Chile) ... *Viola llullaillacoensis*
3. Style crest absent. (Central Chile and adjacent Argentina) ... *Viola philippii*
 - Style crest present ... 4.
4. Style crest trilobed ... 5.
 - Style crest entire ... 11.
5. Lamina with sinus glands at base of marginal crenations ... 6.
 - Lamina without sinus glands at base of marginal crenations ... 8.
6. Undersurface of lamina eglandular. (Endemic of central southern Chile) ... *Viola chillanensis*
 - Undersurface of lamina with glands ... 7.
7. Lamina upper surface alveolate reticulate, apex obtuse. (Central Argentina, central and central southern Chile) ... *Viola congesta*
 - Lamina upper surface smooth, apex acute. (Central southern Chile and Argentinian northern Patagonia) ... *Viola farkasiana*
8. Undersurface of lamina with glands ... 9.
 - Undersurface of lamina eglandular ... 10.
9. Plant annual. Flower with spur included, 5-6 mm long. (Endemic of NW Argentina) ... *Viola mesadensis*
 - Plant perennial. Flower with spur included, 6.5-9 mm long. (Central to NW Argentina and Altiplano of northern Chile) ... *Viola flos-idae*
10. Marginal crenations of lamina weak, shallow, obscure; or lamina alternatively entire. (Endemic of NW Argentina) ... *Viola evae*
 - Marginal crenations of lamina incised, evident. (Endemic of central Chile) ... *Viola exilis*
11. Flower glabrous. Undersurface of lamina with glands. (W Central to northern Patagonian Argentina and central southern Chile) ... *Viola volcanica*
 - Flower bearded with clavate hairs. Undersurface of lamina eglandular ... 12
12. Lamina with 2-3 marginal crenations on each side. Lateral leaf veins 3. Flower size exceeding mature lamina. (Endemic of San Juan Province, Argentina) ... *Viola roigii*
 - Lamina with 4 marginal crenations on each side. Lateral leaf veins 4. Flower size equal to or smaller than mature lamina. (Endemic of La Rioja Province, Argentina) ... *Viola xanthopotamica*



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Table of total *V. roigii* vs. *V. xanthopotamica* differing morphology

CHARACTER	<i>V. ROIGII</i>	<i>V. XANTHOPOTAMICA</i>
Stipules 2-2.5 mm, entire	+	
Stipules 3-3.5 mm, lacinate		+
Pseudopetioles usually ciliate	+	
Pseudopetioles always glabrous		+
Lamina face with three lateral veins each side	+	
Lamina face with four lateral veins each side		+
Lamina margin usually with three crenate lobes each side	+	
Lamina margin usually with four crenate lobes each side		+
Sepals 3.5-5.5 x 1.2-1.6 mm	+	
Sepals 2.5-3.7 x 0.7-1.5 mm		+
Superior petals 6-7.5 x 2-2.6 mm	+	
Superior petals 5.3 x 1.5 mm		+
Lateral petals 6.5-8 x 2.3-3 mm	+	
Lateral petals 5.2-6.3 x 2 mm		+
Inferior petal 7.5-8 x 5.2-6.7 mm	+	
Inferior petal 7.2 x 5 mm		+

Conclusion

Viola xanthopotamica is clearly related very closely to *V. roigii*. In fact it's reasonable to assume that the former probably arose from vectored seed of the latter, most likely transported by birds (Ballard *et al.* 2000). Nevertheless, to begin with they're significantly allopatric, with no intermediate populations; the distance between them about 250 km of flat semi-desert and rugged mountainous countryside. Added to that, the majority of the morphological differences tabled above are entirely discontinuous, the others still largely so. Finally, the two look distinct from one another, as our adjacent illustrations show [figs.75a, 76a]. For these reasons we confidently propose *V. xanthopotamica* as a distinct species in the context of *Viola* section *Andinium* taxonomy.

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figs.75a and 76a : comparison of *Viola roigii* and *V. xanthoptamica*

Tailpiece: not in our backyard

In 2011 the Canadian Osisko Corporation and a local state company signed an agreement to develop gold extraction in the Sierra de Famatina over a total area of 40 square kilometres. However, provincial laws banning open-cast mining and the use of noxious, contaminating chemicals in processing were already considered for repealing in 2008, a move supported by the local political governor (Wikipedia 2018c).

Widely reported protests began at the time of the signing, at first in the affected Chilecito district, after which they soon spread nationwide. Appeals were made in vain to the highest level of the then Kirschner government. Attempts were made to repress legal demonstrations by force, which only increased general indignation. Such was the strength of the growing, continuous public demand for cancellation and the consequent negative effect that less than six months after the agreement was signed Osisko announced it would suspend its activities (Wikipedia 2018b). There has been no further development to date.

Demonstrations by residents were said to have begun in August 2011 (Wikipedia 2018b, 2018c). But we can vouch for just such a small organised protest meeting four and a half years earlier by ecologically minded inhabitants at Chilecito during our viola hunt in the sector. We were invited to participate [fig.78]. This indicates without doubt that the intended project was already common knowledge there at the time.

Acknowledgements

At a personal level, above all we're indebted to Roger Ferryman for drawing our attention to the new species and pinpointing it for us. Without the extreme generosity of the AGS Travel Award, little or nothing of significance could have been achieved. Our total awareness of that and limitless appreciation are covered in more detail above. Nor should we forget the friendly family we lodged with at Chilecito, who made us feel so much at home. Grateful thanks are due our guide at Cerro Mesada. His presence and knowledge of the terrain were priceless during our final March visit. The two preliminary journeys to the area - with Robert Rolfe in 2003 and the Haselgroves in 2006 - greatly facilitated our planning as well.

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fig.77: A view north-eastwards across the La Rioja plain from the Sierra de Famatina towards our next 2007 destination, the Sierra de Aconquija. (6 Jan 2007. ARF)



fig.78: A barbecue in Chilecito as the focus of a protest meeting against the intention of renewed mining operations there. Note TV video camera. (11 Mar 2007. ARF)

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Bibliography

- Ballard, H.E., jr., Systma, K.J. & Kowal, R.R. (1999) Shrinking the violets: Phylogenetic relationships of infrageneric groups in *Viola* (Violaceae) based on internal transcribed spacer DNA sequences. *Syst. Bot* 23: 439-458.
- Ballard, H.E., jr. & Systma, K.J. (2000) Evolution and biogeography of the woody Hawaiian violets (*Viola*, Violaceae): Arctic origins, herbaceous ancestry and bird dispersal. *Evolution* 54(5): 1521-1532.
- Becker, W. (1922) *Violae novae Americae meridionalis*. *Repert. Spec. Nov. Regni Veg.* 18: 182, 184, 185.
- Becker, W. (1925) Beiträge zur Kenntnis der südamerikanischen *Violae*. *Repert. Spec. Nov. Regni Veg.* 21: 351, 352, 357, 358.
- Becker, W. (1926a) Beiträge zur Violenflora Argentiniens. *Repert. Spec. Nov. Regni Veg.* 22: 350-354.
- Becker, W. (1926b) Beiträge zur Violenflora Argentiniens und Chiles. *Repert. Spec. Nov. Regni Veg.* 23: 225-227.
- Becker, W. (1928) Ein Beitrag zur Violenflora Argentiniens und Chiles. *Repert. Spec. Nov. Regni Veg.* 24: 363-365.
- Clausen, J. (1929) Chromosome numbers and relationships of some North American species of *Viola*. *Ann. Bot.* 63: 741-764.
- Costin, A.B., Gray, M., Totterdell, C.J., Wimbush, D.J. (1979) *Koskiusko alpine flora*: 188. CSIRO, Melbourne & William Collins Pty., Ltd., Sydney, Australia.
- Ezcurra, C. (2019). *Justicia*. In: Catálogo de las plantas vasculares del Conosur. Published on the Internet. www.darwin.edu.ar/proyectos/floraargentina/fa.htm (accessed 20 June 2019).
- Hieronymus, J. (1881). *Sisyrinchium macrocarpum*. *Bol. Acad. Nac. Ci. Republ. Argent.* 4(1): 71-73.
- IPNI (2019) The International Plant Names Index. Published on the Internet. <http://www.ipni.org> (accessed 2 March 2019).
- IUCN (2012) International Union for Conservation of Nature red list categories and criteria: Version 3.1. Second edition.
- Kiesling, R. (1999) Cactaceae. In: Zuloaga, F.O. & Morrone, O. (Eds.) Catálogo de las plantas vasculares de la República Argentina 2. Monographs in Systematic Botany from the Missouri Botanical Garden 74: 423-489. St. Louis, Missouri, U.S.A.
- Marcussen, T., Heier, L., Brysting, A.K., Oxelman, B. & Jakobsen, K.S. (2015) From gene trees to a dated allopolyploidy network: insights from the angiosperm genus *Viola* (Violaceae). *Syst. Biol.* 64: 84-101.
- Marcussen, T., Jakobsen, K.S., Danihelka, J., Ballard, H.E., jr., Blaxland, K., Brysting, A.K. & Oxelman, B. (2012) Inferring species networks from gene trees in high polyploid North American and Hawaiian violets (*Viola*, Violaceae). *Syst. Biol.* 61: 107-126.
- Mark, A.F. & Adams, N.M. (1973) *New Zealand alpine plants*: 56. A.H. & A.W. Reed, Ltd., Wellington, N.Z., Sydney, Australia & London, U.K.

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- Moore, D.M. (1983) Flora of Tierra del Fuego: 167. Anthony Nelson, Oswestry, Shropshire, U.K. & Missouri Botanical Garden, U.S.A.
- Sáenz, A.A. (1999). *Zinnia*. In: Zuloaga, F.O. & Morrone, O. (Eds.) Catálogo de las plantas vasculares de la República Argentina 2. Monographs in Systematic Botany from the Missouri Botanical Garden 74: 353. St. Louis, Missouri, U.S.A.
- Sparre, B. & Andersson, L. (1991) A taxonomic revision of the Tropaeolaceae. Opera Bot. 108: 1-139.
- Taylor, M.S. & Schmidt, H. (1993) *Geranium*. In: Brako, L. & Zarucchi, J.L. (Eds.) Catalogue of the flowering plants and gymnosperms of Peru. Monographs in Systematic Botany from the Missouri Botanical Garden 45: 548. St. Louis, Missouri, U.S.A.
- Wahlert, G.A., Marcussen, T., de Paula-Souza, J., Feng, M. & Ballard, H.E. jr. (2014) A phylogeny of the Violaceae (Malpighiales) inferred from plastid DNA sequences: implications for generic diversity and intrafamilial taxonomy. Syst. Bot. 39: 239-252.
- Watson, J.M. (2009) Riding the storm. The Alpine Gardener; Bull. Alp. Gard. Soc. 77(2): 227-238.
- Watson, J.M. & Flores, A.R. (2009) A new and rare rosulate species of *Viola* from Argentina. Phytotaxa 2: 17-23.
- Watson, J.M. & Flores, A.R. (2012) Fire and ice: rosulate viola evolution. Part one—the stage is set. Rock Gard. Quart.; Bull. N. Am. Rock Gard. Soc. 70(4): 360-366.
- Watson, J.M. & Flores, A.R. (2013a) Fire and ice: rosulate viola evolution. Part two—the drama unfolds. Rock Gard. Quart.; Bull. N. Am. Rock Gard. Soc. 71(1): 42-53.
- Watson, J.M. & Flores, A.R. (2013b) Fire and ice: rosulate viola evolution. Part three—a merry life and a short one. Rock Gard. Quart.; Bull. N. Am. Rock Gard. Soc. 71(2): 118-141.
- Watson, J.M. & Flores, A.R. (2018a) Two new rosulate annual species of *Viola* (*Violaceae*) from the initial and upper Andean foothills of Atacama Region, Chile. IRG 104: 1-47.
- Watson, J.M. & Flores, A.R. (2018b) Seek and Ye Shall Find ... something else. IRG 107: 2-33.
- Watson, J.M. & Flores, A.R. (2019) The expanding kingdom of an Incredible Shrinking Violet (give or take a mm): a new diminutive-flowered rosulate *Viola* (section *Andinium*) from Argentina. IRG 110: 2-42.
- Watson J.M., Flores A.R. & Arroyo-Leuenberger S. (2019) A new *Viola* (*Violaceae*) from the Argentinian Andes. Willdenowia 49(1); 35-41.
- Wikipedia (2018a) 'Benkt Sparre': Wikipedia: The Free Encyclopaedia, 2 Jun 2018. Published on the Internet: es.wikipedia.org/wiki/Benkt_Sparre (accessed 9 May 2019).
- Wikipedia (2018b) 'Famatina'. Wikipedia: The Free Encyclopaedia, 20 Jun 2018. Published on the Internet: en.wikipedia.org/wiki/Famatina (accessed 22 May 2019).
- Wikipedia (2018c) 'Proyecto Famatina'. Wikipedia: The Free Encyclopaedia, 27 Nov 2018. Published on the Internet: es.wikipedia.org/wiki/Proyecto_Famatina (accessed 22 May 2019).

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Footnote: All but four of the photos here taken on our travels in NW Argentina are from Anita's original Mavica camera with its relative low psi count. John didn't get his Nikon until later in 2007, and Anita's Canon followed five years after that. John's few, figs. 17, 18, 64 & 70, plus fig. 4, are scans from his Kodak colour slides of the time.

Earlier, in fig.39 we set readers this puzzle, to see how many of the naturally well-camouflaged violas you can see....

You can find out how well you did by checking the last illustration below.....

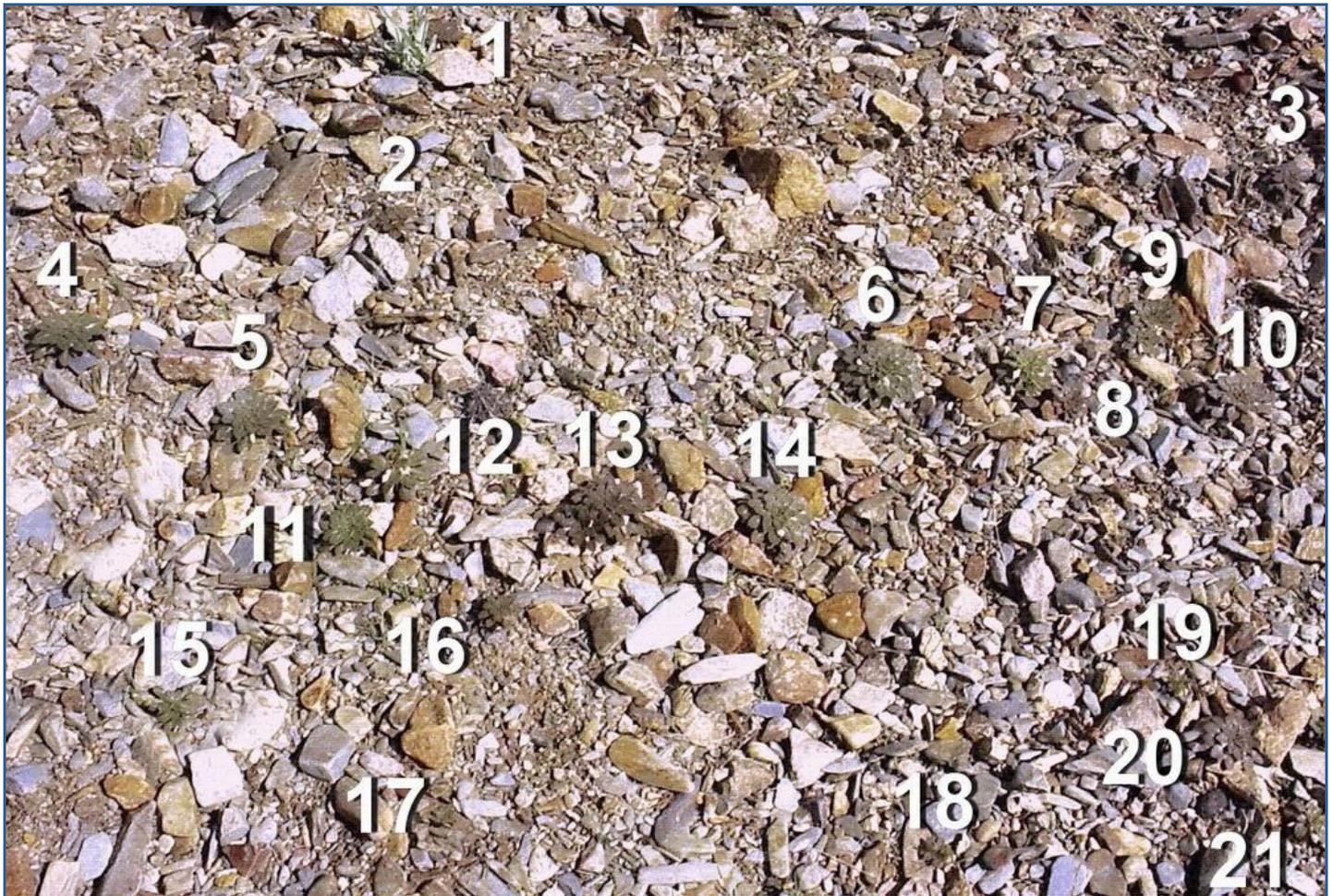


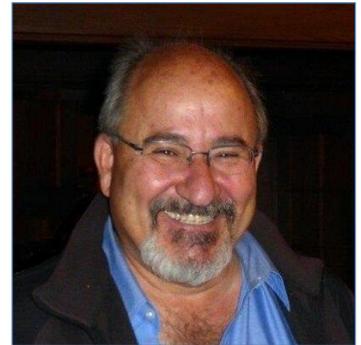
fig.39a: Location and number of the violas in illustration 39. We wonder what score readers managed! (8 Feb 2007. ARF)

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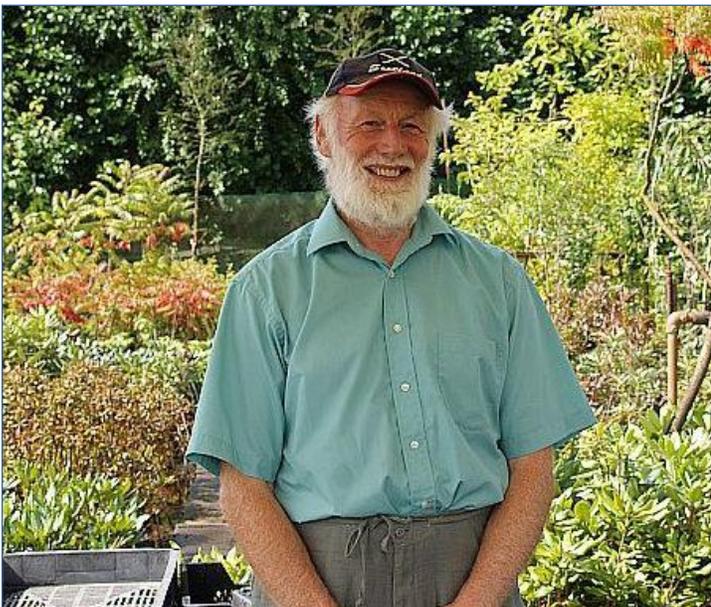
---Plants in the wild ---

Yunnan 2018 - In the Footsteps of Giants by Panayoti Kelaidis

What rock gardener worth their salt hasn't at some point or another bought or checked out a book by [Frank Kingdon Ward](#), read articles about or by [George Forrest](#), [E.H. Wilson](#) or Reginald Farrer's classic [On the Eaves of the World](#)....The Golden Age of plant exploration in China may have taken place a century ago, but the players back then were few, and the challenges they faced were enormous.



Flash forward to the "opening up of China" in the late decades of the 20th Century: the infrastructure was primitive, but incomparably better than in the days of the earlier explorers. A whole new crop of explorers fanned out across much of Western China over these decades, Philip Cribb and Chris Grey-Wilson (their [Flowers of Western China](#) is a monument to this era) as well as numerous botanists and horticulturists from RBG Edinburgh (often led by Ron McBeath), Gothenburg and a spate of Universities and Botanic Gardens in Europe and North America. One of these explorers I am personally beholden to is [Harry Jans](#), who poked, prodded and lured the North American Rock Garden Society to follow in his footsteps! The volume of plants that has flooded our gardens from this second Golden Age unquestionably has dwarfed the achievements of the Edwardian era.



Plantsman and explorer, Ron McBeath – photo Gerd Knoche.



Plantsman and explorer, Harry Jans.

Meanwhile, China - recovering from the devastation of the Cultural Revolution - has experienced double digit economic growth for decades. The squalid inns described by the travelers 100 years ago have been replaced by luxury hotels that exceed European and American standards. Silky smooth highways snake their way through the mountains and travel that once took months and years can be done in days and weeks. You no longer have to be an athletic Scotsman like George Forrest or Ron McBeath to scale the heights: you can drive pretty darned high in a comfortable bus and step out onto flowery meadows filled with *Meconopsis*, *Primula* and *Rheum alexandrae*.

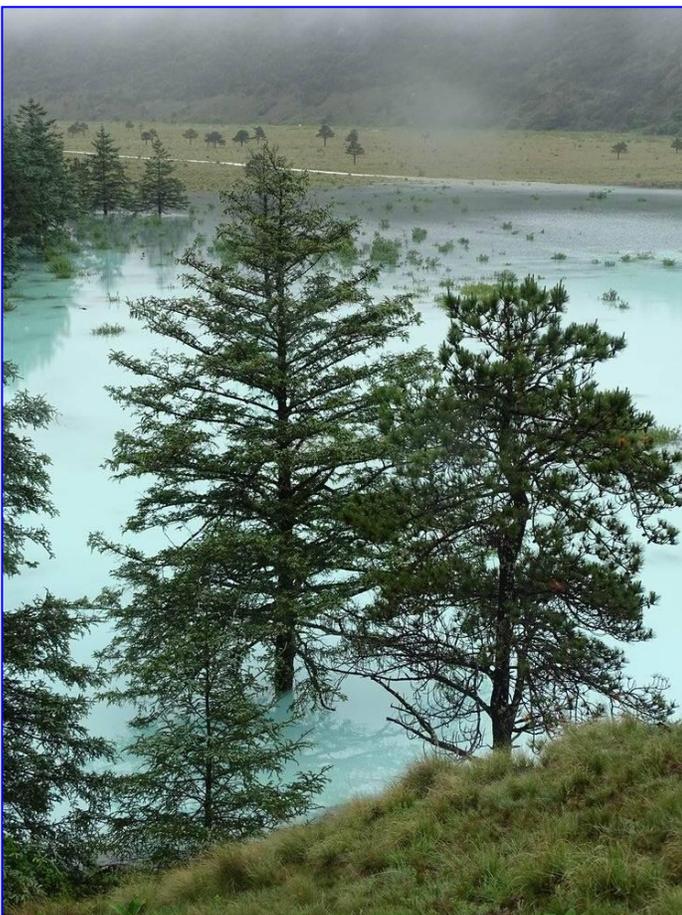
I travelled across a wide swath of China twice twenty years ago with only a few days in the mountains of Yunnan at that time: Like other tourists, I was struck by the flotillas of bicycle commuters in the cities and the prevalence of blue, uniform like dress on pedestrians. The architecture was mostly functional and dull - although one had a sense that things were changing rapidly. Two decades later, the country was utterly transformed! Bicycles are rather rare now -although you do see motorized

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bikes and lots of motorcycles - but cars rule the roads. I passed through four airports on my 2018 trip - each one more outlandishly modern than the next.

Leaving politics aside, the biggest manifestation in the change (aside from the absence of bicycles) is in the clothes people wear. The grim costumes of the past are now replaced by incredibly elegant and fashionable clothes on everyone. Everyone, that is, except the traditionalists among Minorities, who wear even more flamboyant colors and clothing. Lijiang especially gave me pause: it was a much smaller, provincial town twenty years ago, recovering from a disastrous earthquake. The picturesque old town with narrow pathways, the gushing river bisecting it and real shops for real peasants was now transformed into a dazzling mecca of jewelry stores, herbal shops, shops specializing in rare local teas sold in “wheels”, clothing stores with elegant evening wear, sporting goods stores and coffee shops with cappuccino and espresso. Even more startling was to realize I was twice or perhaps three times the age of almost everyone streaming through the town, which at night had a festive, almost carnival atmosphere: the beauty of the quantities of young stylish women and dapper men mystified me until I was informed that Lijiang is considered the “City of Love” where young people from the steamy, hot lowlands flock for romance and to meet like-minded souls — rather as young Americans from the frigid north go to Fort Lauderdale in spring to warm up in every sense of the word.

Chinese “Tea Wheels” from Yunnan.



For plantsmen, however, Yunnan means mountains - and the southern and easternmost “snow” peaks of the Himalayas loom over Lijiang: the Jade Dragon Mountains (Yulongshan) rising to 5,596 m (18,360 ft) just north of town. We set out onto our first field trip on June 14, after an extremely wet spell - and we didn’t catch a glimpse of the peaks on this trip (I’d admired them sufficiently my last trip 20 years earlier, fortunately). We spent the better part of a day at Gangheba - a pass that has access to extremely rich hillsides where five or six species of *Cypripedium*, for instance, can be found if you’re lucky (and have time). It was sufficiently wet and we were restricted in time and only found three kinds on our trip, but we did find dozens of other choice plants and were startled to find the famous meadows of Gangheba submerged in a shallow, bright turquoise lake.

Most of my group had slathered on Deet, and escaped the leeches (which we eventually noticed

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wiggling anxiously from almost every blade of grass at ankle height). I was the dubious winner of the unofficial contest, finding 16 leeches still attached to me (and who knows how many had feasted and gone in the interim). Knowledgeable visitors (and even men) are known to wear nylon stockings which are an excellent preventative - and repellent is highly advisable. I am deeply relieved that we didn't encounter another leech on the rest of our wonderfully sunny and drier trip (which also rose to much higher elevations where the little blood suckers don't occur).

Leeches or not, I will gleefully return to the Yulongshan and Gangheba another time (better prepared of course): the profusion of anemones there especially, the variety of ferns of all kinds and all manner of choice wildflowers made this a high point of the trip for me.



Anemone trullifolia

A few of many plants we found on our brief visit there included *Anemone trullifolia*, which came in a wide spectrum of colors (my favorites were the dark blues). I remember seeing these on my previous visit twenty years ago, when they were blooming right on the ground - the stems had elongated by mid-June on this visit. *Arisaema ciliatum* - which resembles the much taller *A. consanguineum* more often seen in cultivation with its cartwheel of foliage, was growing everywhere - sun and shade, in shrubs and out in the open. The flower color varied from pure green to dark maroon with pronounced stripes. On one steep slope among decomposed limestone, a bright yellow draba was still blooming: I have never seen *Draba polyphylla* in cultivation: I think it would make a great garden plant!

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Seeing a familiar friend like *Thalictrum delavayi* always makes trips rewarding: the flowers on the wild specimens seemed larger than any I've seen in cultivation however, and some plants were extremely dwarf. Perhaps a function of stress? I was flummoxed for a while when I first found *Veronica piroliformis*. I thought it must be a mint of some kind? It was quite widespread and common in a variety of habitats - why have I never seen this in gardens? And finally, huge clumps of *Cypripedium tibeticum* and scattered plants of *C. flavum*: I had actually spotted these from a bus on my previous trip (elsewhere on the mountain) so I was expecting to find these - but my fellow travelers were not just surprised, but thrilled. Leeches be damned! The whole mountain is a treasure.



Arisaema ciliatum



Draba polyphylla

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Thalictrum delavayi



Veronica piroliformis

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Cypripedium tibeticum



Cypripedium flavum



Arisaema ciliatum

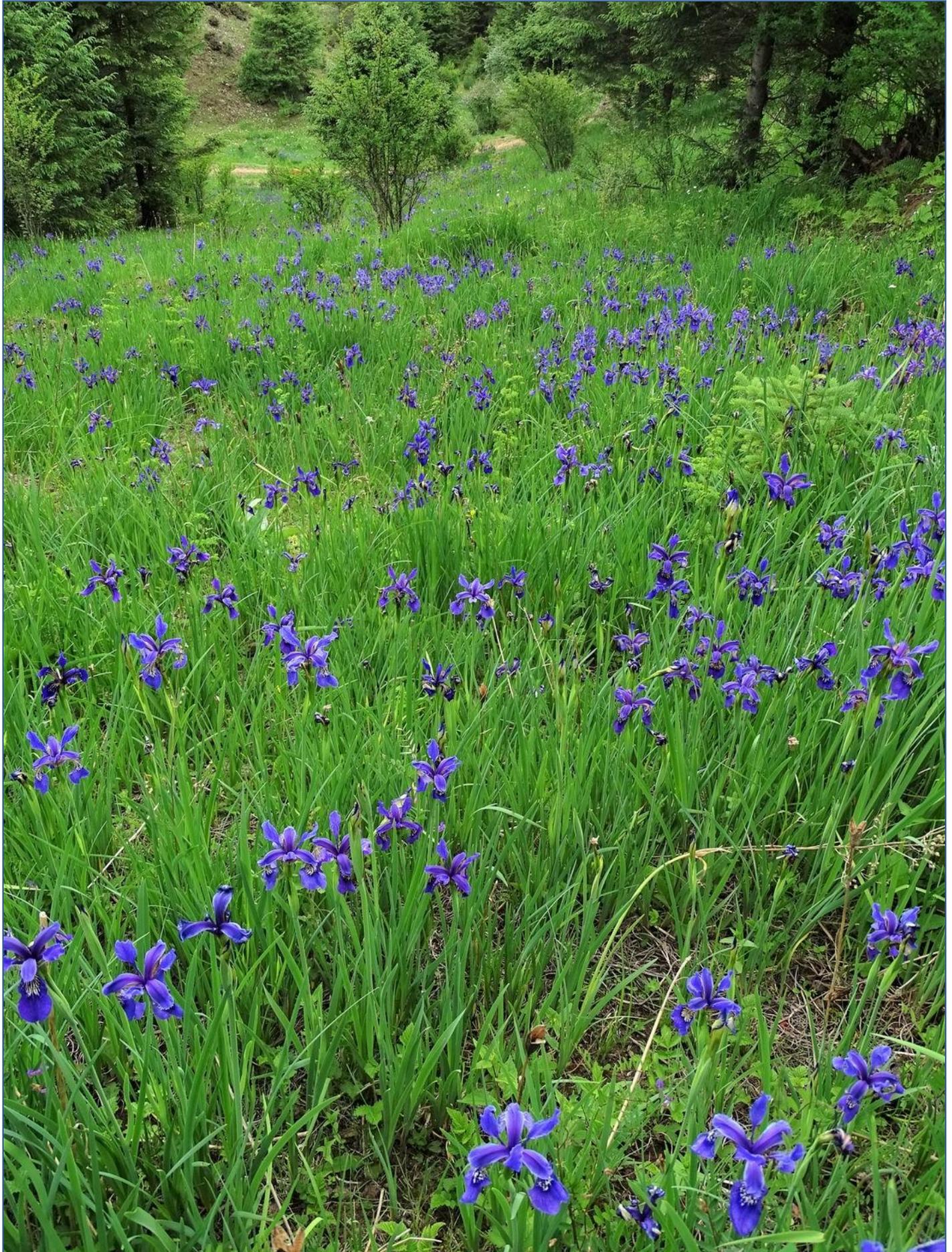
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In this article, however, I'd like to concentrate on two groups of plants that don't always leap to mind when Western China is mentioned. *Iris* is associated with much of the Northern Hemisphere - especially perhaps Western and Central Asia where the glamorous Aril, Reticulata and Juno sections are concentrated. All three of these groups do overlap onto the Chinese Tian Shan, but China is especially rich in *Iris* of the Limniris group: all species of the Siberian section are found here and the 40 chromosome group, with particularly glamorous flowers, is entirely restricted to Southwestern China.

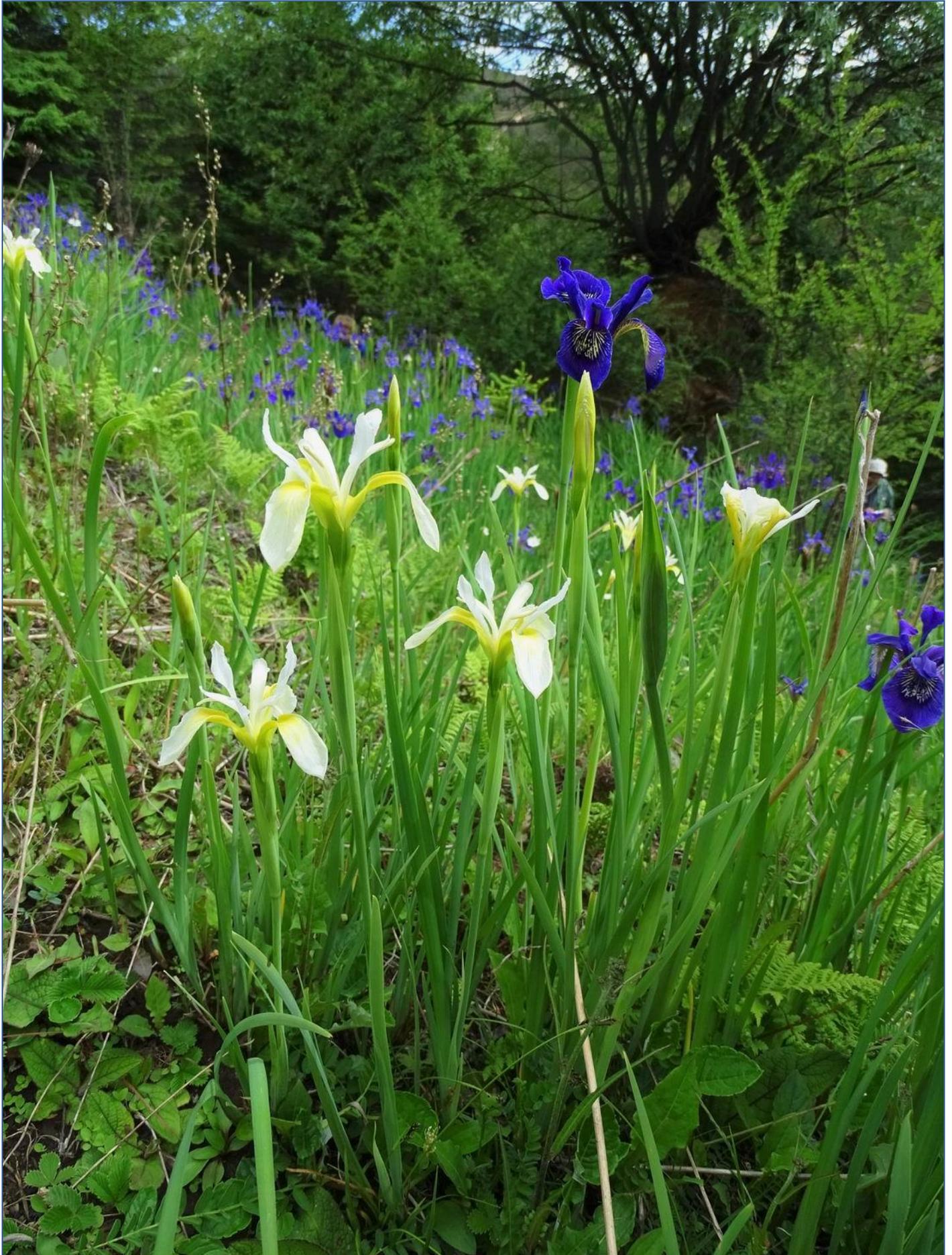
We were lucky to find two species in this group at the very peak of bloom. We found fields full of *Iris bulleyana* here and there all the way from near Zhongdian ("Shangrila") to Lake Tianchi far to the West of town. On one pass the steep south facing hill of a second growth subalpine forest was densely covered with thousands of clumps of this brilliant blue iris. Many clumps had dozens of flowers open simultaneously, and the spectacle they formed on the steep slope was unforgettable. There seemed to be little variation in the flower color or form, until we found a few clumps of albinos which made a stark contrast.



Iris bulleyana, Pass to Napahai, Yunnan



Iris bulleyana, Pass to Napahai, Yunnan



Iris bulleyana, Pass to Napahai, Yunnan

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Very similar in overall appearance to its 40 chromosome cousin, *Iris chrysographes* was just as abundant in the broad valleys in the Hong Shan valley area on the road to Sichuan to the north and east of Zhondian. Unlike *I. bulleyana*, however, the form and shape of blossoms, and the gorgeous golden penciling on the falls were amazingly variable: every flower seemed to have a slightly different shape and unique patterns. The color forms we saw of this species hereabouts were not as black as the form I once grew from seed from Jack Drake (advertised as “black as my hat”) but the velvety dark navy blue flowers are the perfect tint to complement the golden tracery on the falls.



Iris chrysographes, Hongshan, Yunnan





Iris chrysographes, Hongshan, Yunnan





Iris chrysographes, Hongshan, Yunnan

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We found two other miniature iris in the vicinity of Zhongdian. On a steep slope not far from Napahai, scattered among huge clumps of golden *Stellera chamajasma* and several kinds of Ladyslippers there were scattered fans of a miniature iris much the size of our native *Iris cristata*. The flowers were about the same size, but with very distinct lavender blue netting unlike any iris I've seen before. This is the local variant of *Iris ruthenica*, which I have seen growing abundantly in the subalpine meadows and woodlands of the Altai Mountains of Kazakhstan in a much darker, more uniformly blue form. I have also grown accessions of this from Europe which were much smaller in flower. This Yunnanese race of *Iris ruthenica* is surely one of the loveliest and most elegant of rock garden scale irises: I hope it will become available in cultivation before too long if it isn't already.



Iris ruthenica

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Growing nearby, we found *Iris dolichosiphon* - a perfect, miniature rock garden scale iris that we saw on many occasions throughout the trip. It makes a dense clump of compact foliage, with a succession of vivid blue-purple flowers on very short stems. It is reputedly an Arillate species, closely allied to *Iris barbulata* which has a toehold in cultivation. We saw this in many grassy meadows north and south of Zhongdian, and also on the road to Lake Tianchi, where a much paler variant occurred. This looks to be a superb potential plant for rock garden cultivation.



Iris dolichosiphon – and Matt Matthus getting down to the process of photographing it!



Iris dolichosiphon



---International Rock Gardener---

Many other species of iris are recorded for Yunnan: I had seen *Iris collettii* blooming prolifically on my last visit 20 years ago in May. I suspect it had finished blooming by the time we came almost a month later - it is also an exquisite miniature in another section of the genus.

Although Clarence Elliot was less than enthusiastic about growing iris in rock gardens in his classic **Rock Garden** book, I suspect he would be horrified to see my home gardens, where dozens of species in the genus romp and clump and revel! And so it was in Western China....one very good reason to visit!

One expects to see rhododendrons and primulas everywhere in China - but the genus that impressed all of us the most, perhaps, was **Corydalis**. We encountered several dozen species in a variety of habitats, although they seemed to be commoner the higher one went.



Corydalis pachycentra

One of the first we ran across was piercingly aquamarine *Corydalis pachycentra* scattered here and there on the alpine turf just beyond the last gondola stop on Shika Shan - a fantastic mountain not far from Zhongdian. We were not far from the summit here at 4,449.5 m (14,598 ft). The wind was whipping, but we did find a few tucked in the lee of the wind we could photograph. We later found this same species quite a few places, the dazzling blue flowers visible from a distance.

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Corydalis pachycentra





Corydalis cf. conspersa

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The next area where *Corydalis* seemed to abound was north and east of Zhongdian, towards the Sichuan border in the Hongshan area. Here we found *Corydalis pachycentra* once again (one could never have enough of this), but every time we turned around we seemed to find another yellow flowered corydalis. *Corydalis conspersa* and *C. hamata* were both especially common on the steep glacial moraines above the valley where “Bottomless Lake” lay. The latter often grew in the gravelly streambeds—so it may be challenging in the garden. We found a few more delicate blue species—often tucked among shrubs or grasses—very appealing, but where on earth will these be found except Gothenburg?



Corydalis sp.



Corydalis hamata at Bottomless Lake Road.

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Corydalis hamata



Two unknown *Corydalis* species



The most majestic species we found, however, grew at the highest elevations on steep screes. We practically drove over *Corydalis benecincta* on our way over Hongshan pass, where a large clump was growing by the side of the gravel road. The dark brown lobed leaves and gorgeous purple flowers were photographed greedily by every member of the trip!

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*Corydalis
benecincta*



*Corydalis
calcicola*

---International Rock Gardener---



Corydalis sp.



Corydalis cf. *kokiana*



Corydalis cf. *curviflora*

We hit the jackpot on the steep limestone scree on the east side of Beimashan Pass however: here we found masses of *Corydalis calcicola* on road cuts climbing along a road: the piercing blue flowers stained with purple and pink in various shades. *Corydalis melanochlora* grew nearby, and was just as stunning, only with wonderful soft baby blue flowers over the icy, intricate weave of foliage. Every plant looked a little different—I can't imagine how many pictures were taken of these!

But the Queen of the mountain in my book had to be *Corydalis hemicentra* - something I couldn't have imagined without seeing it! On the coarse talus slope, the thick, succulent foliage looked like nothing so much as a dark, brown foliaged hepatica. But instead of anemone-like flowers, the flowers were a gorgeous pure blue! Needless to say, everyone bowed in awe (and maybe to take closeup photographs too, come to think of it)...

---International Rock Gardener---

*Corydalis
melanochlora*



Corydalis hemicentra

Visiting Yunnan in June is worth it, if only just for seeing Corydalis...let's not even mention rhodos, primulas, androsaces, saxifrages etc. etc. What a place!

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Corydalis cf. eugeniae



Clematis chrysocoma



Acanthocalyx sp.

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Adiantum cf. *smithianum*



Anemone demissa



Roscoeia sp.

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Leptodermis sp.



Incarvillea mairei

---International Rock Gardener---



Fritillaria cf. cirrhosa



Ephedra likiangense



Gueldenstaedtia himalaica

All plant photos by Panayoti Kelaidis.

---International Rock Gardener---

---Remembering a Friend---

Ron F. Beeston passed away on June 26th 2019. He had lived alone since the death of his wife Joan in 2016. Two of the nicest people one could ever hope to meet, this couple were hugely popular and respected in the world of alpine plants and were always warmly received on their visits to SRGC events in Scotland. For many years they ran a small nursery in Worcester which brought their plants to a wide audience: many of their plants are remembered and are still grown in many collections, being propagated now by other nurseryfolk.



Diane Clement, Ron Beeston, Ian McEnery and Joan Beeston at Ashwood Nursery. Photo from SRGC Forum by Ian McEnery.



Ron and Joan at an SRGC Discussion Weekend.

After leaving school, Ron attended Agricultural College, studying Commercial Horticulture. Then came two years working at the Nottingham University School of Agriculture at Sutton Bonington before he went into the Forces. After that he went into banking. During this time he became aware of the Alpine Garden Society groups and shows and met the woman who was to become his wife, Joan, another plant lover. As they became more involved in alpines Ron also began exhibiting and gained a handful of Farrer Medals for 'best in show' plants. By the late 1970s Ron was beginning to think about taking on a new challenge, away from banking and in 1979 they moved house to Worcester - complete with a large alpine house (which lead, inevitably, to more of the same!) In 1982 they began offering plants, mostly wholesale, but this quite soon changed to a retail offering of "Choice Plants". Plants were propagated in their alpine house and kept at the nearby Bevere nursery of Owen Bros. – where their friend Tony Owens had offered them space.



Their relationship with the Bevere Nursery is recalled in the name of Ron's popular form of *Dionysia aretiodes* 'Bevere' – regularly seen on show benches. Photo from SRGC Forum by Kris De Raeymaeker.

Ron had always been fond of Daphnes (in fact he and Joan only ever grew and offered for sale plants for which they had a personal fondness – which probably made growing them that much easier and more fun!) and 4 *Daphne* were included in the first sales list of 166 plants. By 1989 there were 303 plants on the list – including 7 *Daphne*.

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Ron and Joan very much enjoyed taking seed shares in various expeditions and from seed collectors, to grow a wide range of plants from wild seed and Ron made great connections with the likes of the Czech growers and seedsmen. Wherever they went, the Beestons made friends. As well as exhibiting successfully at AGS shows, Ron and Joan always did their best for the society, as when Ron was involved in the creation of the Pershore garden and crevice, with Zdeněk Zvolánek, and others – detailed in the AGS article by Ron: AGS Bulletin 73/236.



Joan and Ron Beeston with Pam McEney on holiday in Switzerland - photo by Ian McEney from SRGC Forum.

Ron and Joan had minor regrets that running the nursery meant that they had to cut back on their regular trips to enjoy plants in the mountains but in retirement they began once more to visit plants in the wild, as in their holidays with Pam and Ian McEney.

Ron and Joan found an increased interest in saxifrages after a visit to Czech growers in 1988. In turn the Czechs still appreciate many of Ron's plants, including his most successful Sax cultivar, *Saxifraga* 'Cumulus' a plant which has been heaped with praise and also was given an RHS Award of Garden Merit and often appears on the show benches and in gardens in the UK. In the same way that Ron was not shy to seek advice in the early days of growing alpines, so he was generous in helping others – such as Tim Lever – the Aberconwy Nursery is one that has named plants to honour the Beestons, such as *Campanula* 'Joan Beeston'. There is also a *Primula* 'Ron Beeston' - the history of which is somewhat mysterious!



There were other plants raised by Ron – and as well as the several named in honour of Ron and Joan – SRGC members worldwide remember fine plants of *Hedeoma ciliolata*, *Narcissus cantabricus* var. *petunioides* and *Trillium grandiflorum roseum* from the Beeston "stable" that they are pleased to grow.

Campanula rainieri 'Joan Beeston' - named by the late Keith Lever of Aberconwy. Photo by Rob Potterton.

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Primula 'Ron Beeston' –the provenance of this plant was sought in the SRGC Forum but no firm conclusion was reached.



Hedeoma ciliolata- a bright Mexican plant grown by Cyril Lafong.

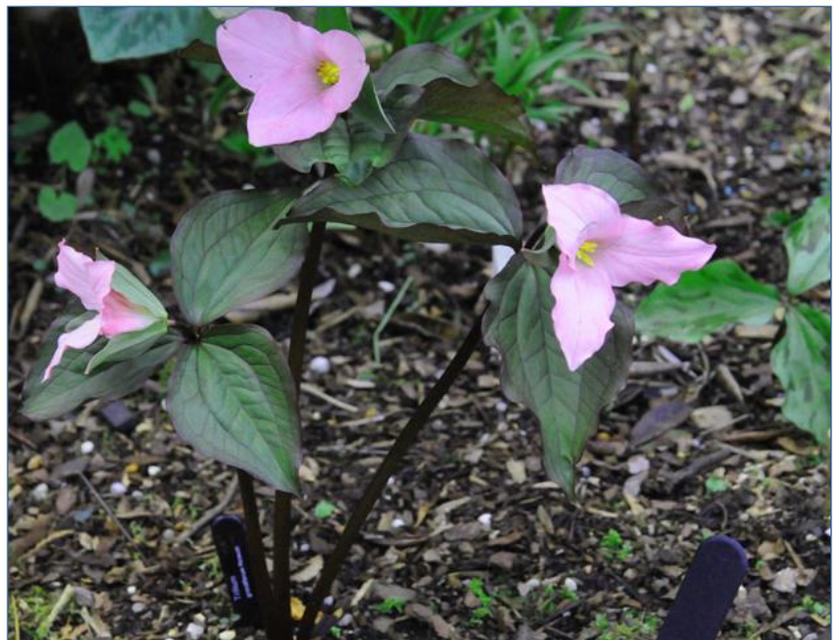


Around 20 years ago this fine form of *Narcissus cantabricus* var. *petunioides* made its way to Japan from Ron Beeston and is still grown there to a high standard. Photo by Tatsuo Yamanaka.

Trillium grandiflorum roseum – plant from Ron and Joan grown in Ian McEnery's garden.

Ian McEnery remembers Ron

"I first met Ron Beeston back in the mid 70's as a member of the local Birmingham AGS group where Ron was already a leading light and one of my earliest memories of him was visiting his and Joan's garden in a Birmingham suburb where I instantly was struck by Ron's attention to detail. His garden was immaculate and artistically presented as was the alpine house and frame area with not a pot out of place and where all



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of the plants were in superb condition. He even had a potful of *Pleione forrestii* in full flower a plant not easy to find then and still difficult to grow. That visit had a profound effect on me clearly indicating that I had much to learn.

One lovely memory was on a plant hunting trip to Wengen in 2009 when my wife, Pam and I set off with Ron and Joan to find the fabled *Cypripedium calceolus* below Kleine Scheidegg. These grow in the shadow of the Eiger, Monch and Jungfrau : not a bad backdrop. This was a long day and despite Ron's and Joan's age and health problems we managed to find the cyps and afterwards were able to sit amongst these beauties enjoying our packed lunch. The reward after the walk back was a delicious slice of homemade apricot tart with a beer at the Hotel Jungfrau at Wengernalp. He will be missed."



Ron and Joan Beeston with Pam McEnergy in Switzerland, photo by Ian McEnergy.

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RON BEESTON AND THE BOHEMIANS

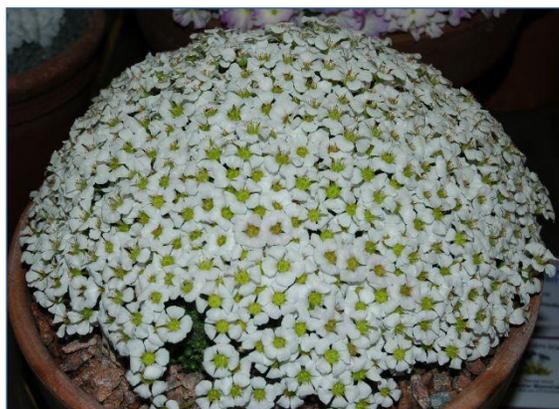
When you are a senior rock gardener all your stories older than 30 years are partly melting and sticking together uncomfortably. My clear picture is me in the Main Railway Station in Worcester and seeing Ron waiting for me at the platform; to see him for the first time as a cowboy-tall man with a charming smile. Another mental picture is of Ron Beeston and John Page roaming Czech rock gardens: they stayed with us in Prague and were happy packing hundreds of alpines to their suitcases: they knocked pots and part of soil away and wrapped plants tightly into a page of

newsletter so the weight was acceptable for an airplane. This was the time when Ron improved his great collection of the *Porophyllum saxifragas* (with help of Karel Lang) and later produced the outstanding cultivar *Saxifraga 'Cumulus'* a vigorous and beautiful white sax. (Ron also raised the pink *S. 'Nimbus'*)



Saxifraga cumulus – grown in Vienna and photographed by Franz Hadacek.

Saxifraga cumulus at Waterperry – photo by Maren Talbot.



Saxifraga cumulus as a Show Plant - photos from the SRGC Forum by George Young of plants grown by Tommy Anderson and Frank Hoyle.

Of course, smuggling alpines from Worcester to Prague was for a few times good exercise. Ron's nursery was full of valuable plants and he was in nature generous.

The Beeston's food was strongly improved from their fresh vegetables from their allotment; now I remember lovely broad beans and green *Phaseolus coccineus* with cut edges



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steaming and waiting for nice butter. Joan was a great host and their wines were never sour. We sometimes tried the old black and white pub in the closest village to get something special including fine beer. One action I recall with Ron was making his soft travertine (tufa) outcrop together with the late Joyce Carruthers. Ron was happy.



Ed.: “Black and White” or half-timbered buildings are a fine legacy from times gone by!

When I took our professional seed collector Josef Jurášek to England in 1988, his English was only around to 5 or 10 words. I was sober without playing with the Demon Alcohol so after one day trip (to Jim Broadhurst’s garden, I presume) I told Ron if he wished some better friendship with Josef, he should open a bottle of whisky. I went to bed and the two foreigners stayed into small, morning hours discussing alpinists with Latin names wetted with good whisky. Ron had for 25 years a perfect exchange of plants with Czech plantsman Vladimír Staněk (a top seed collector now). We Czech were crazy for his primrose hybrids and new Daphnes. One of his efforts in exchanges of Daphnes is his *Daphne blagayana* x *D. collina* hybrid, which is asking to be named after him ‘Ron Beeston’.

I enjoyed my cooperation with this true gentleman when Ron organized the construction of the AGS crevice garden in Pershore. He managed plants and helpers including myself, Alan Furness and John Page and I feel that this sandstone outcrop is his small memorial. Z.Z.



Pershore crevice garden, worked on by Ron Beeston – photo from SRGC Forum by Luit Van Delft.

---International Rock Gardener---

We are delighted here to join Zdeněk Zvolánek and Jiří Papoušek in their announcement that this fine daphne hybrid, raised by Ron and grown by Jiri in the tufa tunnel of his garden in Roztoky near Prague, will be named *Daphne* 'Ron Beeston'. This attractively large-flowered plant, a hybrid of *Daphne blagayana* and *D. collina*, will be treasured for its memory of a well-loved plantsman.

We can only hope that Ron and Joan are now reunited in a better place – for sure they will be making friends.

Jiří and Zdeněk are keen to name this plant for its raiser, and IRG is pleased to have the chance to publish that name.



Daphne blagayana x *Daphne collina* - now named ***Daphne* 'Ron Beeston'** – here seen thriving in the tufa tunnel of Jiří Papoušek.

Thank you, Ron and Joan, for so many happy memories!