

# Sichuan

## *Black Primulas & Prayer Flags*

1<sup>st</sup> – 18<sup>th</sup> July 2016

### *A Greentours Trip Report*

Led by Ian Green & Kurt Vickery

#### **Day 1      July 1<sup>st</sup>      Departure**

We took off on time from Heathrow and were soon heading towards the shortened night of an eastward flight...

#### **Day 2      July 2<sup>nd</sup>      Chengdu**

It must have been quite a time after dawn that I awoke from my slumber and watched the dry and high landscapes of northwestern China slip by as breakfast was served. There were no clouds, only an incredible brightness, and below the Taklamakan appeared as a beach, rippled and empty, after some minutes interrupted by the human scar of a road, as if drawn by a ruler. Way to the south snow-capped ranges could be seen. Moving eastwards our flight skirted the really high country, instead going east then south. The desert lands became more mountainous, the occasional valley or oasis showed signs of cultivation. We passed the huge lake of Koko Nor. Suddenly the mountains became higher and steeper, grassy on the southern slopes, forested on the northern, and with snow on the highest parts. Then we left the mountains for a circuit of the highly populated Red Basin before circling in to land at Chengdu's shiny modern airport. This was the model of relatively slow efficiency. Once the usual procedures had been completed we were outside and meeting Tsebho, Adong and Joey, our local (actually not local in Chengdu terms, ethnic Tibetans) drivers.

We headed for the hotel in the city centre – a big city too as more than ten million people live in Chengdu. The traffic was reasonable until we got close to the hotel when it slowed almost to a standstill. We were at the Zen Buddha Hotel by lunchtime, a lovely quiet little place with very nice rooms and set on a rather posh street, with shops selling expensive stuff, all in new buildings done in old-style Chinese architecture, a very pleasing scene.

After lunch we took to the giant carpark that is Chengdu's streets again and headed to the north side of the city where we spent a very pleasant two hours exploring the Giant Panda Centre. Here they study the Giant Pandas and have recently built up a very successful breeding programme, something that for many years seemed impossible as initially the Pandas seemed shy of such things. Now they are even exporting them as well as reintroducing Pandas to the wild. The enclosures are large and in a semi-natural setting and the pandas certainly look relaxed and accepting of the situation, though they weren't about to go and play outside as they had air-conditioning in their dens! The adults just slumbered or stretched. We visited the 'nursery' where

some tiny baby pandas were in incubators. A highlight were the groups of stunningly marked Red Pandas which are not related to Giant Pandas, the latter being true bears, and the Red Pandas more closely related to Bearcats and Civets. They are the prettiest of creatures and they made a great sight as their coats seemed to light up in the sun. The vegetation was a mix of introduced and native species. The birds however were very much native and we found it to be very lively. There were Chinese Bulbuls and White-browed Laughingthrushes everywhere and we encountered a small flock of Japanese White-eyes too. We saw a couple of Vinous-throated Parrotbills, a couple of Grey-capped Greenfinches, and had amazing views of Red-billed Leiothrixes. There were a number of butterflies about, Common Mormon, Great Mormon and Common Bluebottle the pick.

Then it was back to the hotel to relax, or wander and take in the sights of a summer's day in Chengdu. The streets were busy with people many on bicycles, motorbikes or the increasingly popular little electric bikes which are somewhere between the two. Many of these had two seats in a line, a nice design! Then it was to the excellent restaurant across the road from the hotel where we enjoyed a very nice spread. In fact this was a monastery restaurant and we were served by monks! It was chance to get to know the various tastes, the chili of course, but more importantly the Sichuan pepper which is both spicy and numbing at the same time, an odd sensation, but a great flavour. The dishes varied greatly in terms of their hotness (more than half had no chili or Sichuan pepper) and it was easy to adjust your meal to your own level of spiciness.

### Day 3      June 28<sup>th</sup>      Wolong

Bright and sunny and already very warm by breakfast time in the centre of Chengdu. We enjoyed a varied breakfast and then packed up and were off just after eight forty-five. To start with though it was slow going, nonetheless it was pleasant to watch the bee-hive of activity that was Chengdu in the morning and see the elegantly dressed women along the main shopping streets. It took us two hours to shed ourselves of the city, finally reaching open agricultural areas. These were very intensively cultivated with trees grown for the city's gardens, as well as citrus groves. The crops under the trees were varied, many crops have three harvests a year in this area. As we entered the mountains things began to change, though still the roads were amazing, tunnels driven straight through mountains for kilometres emerging briefly into daylight before plunging into to the rock again – awesome stuff! We followed a river uphill, all the way to Wolong without stopping. We settled into our hotel and then took lunch there, excellent local fare as usual.

Soon after we set out for the afternoon trip. This was to the Yinlong Valley where we took a track up the gorge. The vegetation was lush with all sorts of trees and shrubs, the holly *Ilex pernyi* with its triangular leaves was distinctive and we had our first encounter with *Deutzia longifolia* in flower. Strawberries, from the yellow-flowered *Duchesnea indica* were common, more in fruit than flower. We saw the fine pink *Gentiana rubicunda* and our first lousewort, the tall yellow *Pedicularis dunniana*. Ferns were abundant, we saw *Cheilanthes argentea*, *Gymnocarpium remotipinnatum* and various *Polystichums* including *Polystichum stimulans*. *Saxifraga fortunei* with one white petal much longer than the others was our first cliff-dweller but we soon found more, a lovely little pink, white-centred *Primula* (OK, only the leaders saw this one!) and the newly described *Corydalis madida*, a fine plant with glaucous leaves, red-orange stems and yellow-green flowers. We found

the delicate orchid *Amitostigma basilifolium?* on a steep bank where *Alectris glabra* and *Tofieldia thibetica* were both in flower. Trees included the Wingnut and both *Acer davidii* and *Acer forestii*. I found some *Asarum* with the flowers just over and also some fine plants of *Paris polyphylla*, *Lilium duchartrei* was just about to open its red-speckled blooms. We noted a dead Goral lying at the foot of the cliff. Overhead Fork-tailed Swifts were everywhere and there were a few Nepal House Martins.

A surprise just as we were about to leave was a yellow-green clambering plant whose flowers looked like a wolfsbane but on closer examination it was nothing of the sort – I haven't been able to untangle this mystery!

We moved uphill a few miles and stopped for two new louseworts, the large and odd-looking *Pedicularis rex*, and the orchid-like *Pedicularis davidii* with its elegant spikes of white and pink flowers, the galea with a rakish sideways twist! Here was the rhododendron-like *Salix magnifica*. *Deutzias*, *Viburnums* and *Hydrangea heteromallis* flowered profusely. Amongst the *Larix potaninii* we spotted a red-purple flowered *Lonicera*. Leaf Warblers were everywhere here and we found both Buff-barred Warbler and Chinese Leaf Warbler among them. Then it was back to base. The evening meal was so much enjoyed (or were we just hungry?) that seconds of spare ribs and the fried cabbage were necessary!

#### **Day 4      July 4<sup>th</sup>      The lower slopes of the Balang Shan**

We were very pleased to see good weather as we drove up the beautiful valley above Wolong. It took us a little over half an hour to reach the start of a trail.

We soon started to find new plants. *Pedicularis setzschuanica* and *Semiaquilegia ecalcarata* were being photographed before we even entered the trail and just a few minutes in was the day's first *Oreorchis patens*. The deep purple *Phlomis atropurpurea* was frequent and on a bank we found our second *Pedicularis* of the day, the lovely pink *Pedicularis macrosiphon* with an extremely long flower tube raising the rest of the plant right off the ground. By a rushing stream we saw the impressive *Arisaema elephas* eventually finding one in flower and there was a collection of nice plants including a new blue *Corydalis* here, the flowers a richer darker blue than the *flexuosa* seen yesterday and the plant altogether more robust, this *Corydalis elata*. Above we found all *Polygonatum verticillastrum* not quite yet in flower, and *Trollius yunnanense*, and the yellow *Mimulus szechuanensis*. Up a bank the fine orchid *Calanthe tricarinata* was in good flower. En route to lunch we photographed several really tiny orchids found in deep mossy forest. There was the fine little twayblade, *Neottia smithii*, with a dark green line down the centre of the lip, and the lovely wide green flowered *Neottia puberula*. Then there was the really tiny flowered saprophytic (no leaves at all) *Neottia acuminata*. Various fungi were found including *Russulas*, *Boletus* species, a Grisette and a fabulous orange horn of plenty – there were even Chanterelles. Some watched a Grey-headed Bullfinch as I went ahead to check on the whereabouts of our lunch, in so doing I happened across the jay-sized Giant Laughingthrush.

We enjoyed a lunch of fried rice down by the river in an incredible moss-forest setting, the *Cephalotaxus*, *Acer* and *Betula* trees draped in mosses and lichens, the river rushing over mossy boulders. It was an idyllic scene made all the more so by the flowers all round us. *Pedicularis macrosiphon* was everywhere forming carpets. The tiny wine-centred white *Oxalis griffithii* was a

pleasing find and other fine plants around the lunch spot included a *Leontopodium*, *Gentianopsis paludosa*, *Pyrola calliantha*, and top of a giant boulder *Rhododendron galactinum* still in flower.

We were already at 2500m or so but now it was time to head up the first stages of the pass. We left the low moss—laden forest and headed into a shrub zone. Patches of grassland started to appear and we stopped to explore an area of mixed scrub and meadow. This was rich indeed, In an acre of meadow we found all sorts. There was a fine show of yellow *Primula sikkimensis* and with it was both the blackish *Veratrum nigrum* and white *Veratrum macrophyllum*. In shadey spots we found the pink flowered *Polygonatum curvistylum*. We admired some fine fresh *Iris bulleyana*. There were orchids too, *Gymnadenia crassinervis* varying from rich pink to almost green, one or two *Gymnadenia conopsea*, and a nice population of *Ponerorchis chusea*. Above the road a fine meadow had all sorts – this was a very rich spot indeed! Here was our first Lady's Slipper, *Cypripedium tibeticum* with a fantastic big purple-pink pouch. Nearby we found *Galearis wardi* and *Malaxis monophyllis*, typically in this area with two leaves! Under dwarf oaks we saw a fine clump of *Primula polyneura*. I found a big patch of *Calanthe tricarinata* and most of the group saw fine specimens of *Paeonia veitchii*. The flowers meant we had little time to look at the birds but there were a few, Olive-backed Pipit, Jungle Crow and Chestnut Thrush. Two White-eared Pheasants disappeared before anyone but Ian saw them, and a Spotted Laughingthrush was similarly elusive.

After dinner and checklists a group of intrepid night-owls set forth to explore the Yinlong Valley at night. We had barely left the car when eyeshine announced the presence of a Long-tailed Goral. We had great prolonged views of this animal and were able to photograph it. Hardly further and there was more eyeshine. This time it was two Forest Musk Deer, not close enough to photograph but a great site nonetheless. It was only a surprise that we failed to find anything after that!

## Day 5      July 5<sup>th</sup>      The Balang Shan

Breakfast done, we packed and said goodbye to the very amenable people at our hotel. Unfortunately it had been raining for a while and there looked to be no let-up and indeed this proved to be the case with rain all day. Amazingly we still managed pretty much a full day in the field so a big thankyou to everyone for persevering, we got wet and maybe a little cold, but we saw loads of great things

We headed up the Pitao Valley soon starting the climb up the Balang Shan. This is a big pass, rising to 4400m, particularly impressive as it is the first pass we reach from the lowlands. We passed yesterday's meadows, spending the day between 3650m and the top of the pass. To start with we made several forays into the slopes above the road which were covered in a fantastic show of amazing plants. Most obvious were the *Meconopsis*, and here we had the full gamut of colours on our very first encounter with them. Yellow *Meconopsis integrifolia*, tall and with many large flowers, many ten cm or more across, were mostly going a little over. Then there was the wonderful Red Poppywort, *Meconopsis punicea*, whose large red petals coiled downwards out from the hairy bud and look like no other flower on the planet. These are large flowered quite tall plants and the combination was unbelievable. The blue *Meconopsis quintuplinervia*, its little bowls hanging pendant, was only seen from the vehicle.

And of course there was so much more. There were *Primulas*, the common *Primula sikkimensis*, the similarly pale yellow, but otherwise quite different *Primula orbicularis*, and especially at later stops, an abundance of *Primula nutans*. There was even a tiny purple *Primula* that had not yet opened its buds. We found a few nice *Cypripedium tibeticum* as well as the tiny green *Androcorys obtusata*. There was also white *Lloydia serotina* and the lovely hanging bells of *Lilium lophophorum*. *Pedicularis kansuensis* (white *albiflora* form) was new and so too the pale yellow twin-flowered honeysuckle *Lonicera involucrata*. There were more louseworts in the shape of the rich red pentadon variety of *Pedicularis davidii* as well as a white species. We found *Fritillaria unibracteata*, a little *Alectris*, and two blue *Corydalis*, the large *barbisepala* and the small *pachycentra*. The yellow and orange *Corydalis pseudocristata* was impressive. The strange artichoke-like thistle *Dolomeia soulei* was found and the tiny *Campanula aristata*. A true flower heaven. There were so many plants – *Rheum palmatum* would have needed an axe to fell it! There were at least three *Ligularias*, an *Aconitum* with deep purple flowers now still closed, and little *Rubus nelumbifolium*.

The continuous rain meant little chance to see birds today – a Water Pipit's nest was found with three eggs and otherwise all we managed were a few Blue-fronted Redstarts and a Kessler's Thrush.

Higher up towards the pass and *Meconopsis*s were to the fore, with even better shows of Red Poppywort and this time the *Meconopsis integrifolia* was in great condition. Here was another *Meconopsis*, another blue one, this time a prickly species, the prickles with the purple base characteristic of *Meconopsis rudis*. There was another blue one here too, but a different one, this the lovely small *Meconopsis lancifolia*. A shaley outcrop close to the road had the squat *Rhododendron russicum* covered in lilac-purple blooms, the *Rhododendron phaeochrysum* was already over. There were *Primulas* too. Here we found lots of the fine large nivalid *Primula melanops* with tall flowering stems topped with a head of large mauve flowers, each slightly darker in the centre. On the rocks was the lovely *Primula gemmifera*. There were also plenty of saxifrages, little clumps of yellow-orange *Saxifraga unguicularis*, taller but similarly coloured *Saxifraga pseudohirculus*, and the fine white, with orange spots and black centre, *Saxifraga melanops*. *Saxifraga nigriglandulifera* lived up to its name and there was *Saxifraga brachypoda* forming little clumps too. We learnt the difference between *Cardamine macrophylla* and *Megacarpa delavayi*, both large and beautiful brassicas, the latter having a fine scent. As we neared the pass we saw the large heads of brilliant blue *Corydalis panda* growing in tight knit clumps, wow! No time to stop though!

We stopped just after the 4400m pass. Here the landscape changed, it was much less lush and not far above the road the vegetation disappeared altogether. However there were some fabulous alpine plants in this zone. Just above the road, indeed everywhere around the roads, was magnificent *Corydalis melanocentra*, perhaps plant of the day, the ice-blue blooms tipped with black. Growing with it was lots of *Ranunculus membranaceus*, and above in the rocks we found the lovely pink *Primula dryadifolia* and pale yellow *Rhododendron primuliflorum*. Nearby grew a drift of *Primula amethystina* and scattered here and there were the elegant purple heads of *Primula woodwardii*.

We had to make tracks as the road going into the town would close at 5pm for roadworks.

## Day 6      July 6<sup>th</sup>      Rilong area and then to Danba

Our first stop today was to take a look at *Incarvillea argutum* which lined the roadsides, above us was a mystery Primula and billowing purple and yellow *Thalictrum delavayi*.

We headed up hill to the Jiajing Shan Pass which we attained in the rain. Nonetheless we were keen to get out and verify Adong's claim of a black *Meconopsis*. He was totally correct. There were many of them and they looked fantastic in the rain even if photographing them wasn't so easy in the weather. It was difficult to tell whether they were really black, but certainly they were close to, maybe a dark wine purple – though it was such a dark shade of this that it approached black. These would appear to *Meconopsis balangensis* var *atrata* - what a beautiful and unusual *Meconopsis*! There was so much else here too. The gravelly slopes by the road held a stunning pink *Corydalis* which in places formed mats next to a sky-blue veronica. There were plenty of alpine buttercups and saxifrages and also the gorgeous blue *Aconitum pulchellum*. Moving along the slope Adong took us to a rocky promontory fifty metres away and this held some gorgeous plants of *Paraquilegia microphylla* and these surrounded by a halo of *Primula blini* of the 'florida' persuasion whose pink blooms were occasionally replaced by bright red ones! *Primula amethystina* formed drifts next to *Rhododendron primulaeflora* which was still covered in blooms (*Rhododendron phaeochrysum* a few hundred metres down the road also still had blooms). In the rhododendron there was bright blue *Corydalis pachycentra* and yellow *Corydalis linarioides*. Fabulous *Corydalis panda* and much smaller *Corydalis barbisepala*, both brilliant blues, completed the corydalis fest. There was also *Meconopsis lancifolia* and driving back down we could see *Meconopsis integrifolia* and *Meconopsis punicea*.

Downhill we stopped in the forest where lots of *Primula palmata* graced the mossy forest floor and the roadside verge, both places that also held the even more beautiful capitate blue-purple *Primula deflexa*. Male and female White-throated Redstart were seen here. Further down we found *Maianthemum atropurpureum* and what I thought was a *Disporum* but which turned out to be *Liriope kansuensis*.

We stopped in a village for some lunch – another excellent meal, perhaps the best yet! In the afternoon we continued, the valleys were full of endless interest. The large square houses, typically painted creamy-white with red decorations, these include the eight Buddhist auspicious symbols. Tsebho told us the conch shell was one and another the swastika, the latter meaning stability hence its frequent appearance on buildings! Walnut groves, orchards, vineyards, vegetable and maize plots, and all the time, a great turbulent river, whose ferocity made us understand how it is possible to delve such deep steep sided valleys. We made a brief stop to visit a particularly tall and well-built, Tibetan Watch Tower.

Some cliffside *Corallodiscus* prompted a roadside stop. We also found much *Lilium davidii* on the slopes above us. The birding at this spot proved very good with rosefinches the main stars. The beautiful Sharpe's Rosefinch with two white wingbars and a frosted face was much appreciated and also in the maize was a pair of Blandford's Rosefinches, the male posing well for a long time. Russet Sparrow, Tree Sparrow, Blue Rock Thrush and Godlewski's Bunting also joined the action along with several female Black Redstarts. Kurt saw a Daurian Redstart as we moved along and there were of course the usual White-capped and Plumbeous Water Redstarts. Oriental Turtle Doves too

The last stop was close to our destination. Here we looked at a low roadside cliff that held a fine population of the gesnerid *Corallodiscus lanuginosus*, some with the blue flowers still in bloom. On the slopes were white wands of *Eremurus chinensis*. Orchids were in flower but out of reach and there was an *Arisaema* going into fruit. We found a *Pterocephalus* and the fine *Ceropegia mairei* with unusual trumpet-like flowers.

Then it was into Danba where we checked into our hotel. Evening dinner at the hotel was superb.

## Day 7      July 7<sup>th</sup>      to Luhou

We left Danba shortly after nine and headed west, the huge valley walls hemming us in and the slope were covered in verdant greenery, it felt almost subtropical. There were tantalising glimpses of all sorts of things and it didn't take long for us to stop, as we spotted the lovely white *Lilium duchartrei* growing on a slope too steep for us to reach. No need to worry though for a few kilometres on and there were lots growing where we could all get to them. We spent a happy half hour photographing them but not before Adong had found a snake. We 'cornered' it by a rock and though it was not perhaps appreciative of our efforts, coiling itself up into a 'I'll think about striking you if you come any closer but I'm not sure I can really be bothered' pose. Good job it was not that keen as it was a Jerdon's Pit-Viper (identified subsequently by David Thomas) ... *Protobothrops jerdonii*. It proved a good spot generally for fauna as Jane spotted little Kansu Pikas among the lilies – she would later spot some more at another stop. Then there were the butterflies - there were quite a few. Male and female sergeants posed well for the cameras, the male black and white, the female orange and black. There was a skipper, an *Everes* blue and also a fine large fritillary that came and landed on the lilies. *Pedicularis artselaeri* trailed across the turf and Jane found the first of several lovely pink and white *Spiranthes sinensis*. As we moved on the trees and shrubs were very varied, the latter including *Leycesteria formosana*, a *Berberis*, *Deutzias*, *Hydrangeas*, and the pea *Indogifera* (probably) *balfouriana*.

We continued up the valley, as usual wanting to stop at every turn, but we did manage a few miles before at around 3000m we stopped by some cliffs. The landscape here was really beautiful with a rushing river, large screes, big cliffs (above which sailed a Himalayan Griffon Vulture or two) and boulders and slopes cover in low mossy forest with the likes of *Hydrangea heteromalla* in flower. Large-billed Leaf Warblers, Blue Whistling Thrushes and Green-backed Tits were seen in the greenery. *Arisaema consanguineum* was in flower and on rocks, amongst abundant ferns and mosses was *Corydalis conspersa* and the little pink *Aorchis spathulata*. The striking orange flowers of *Primula cockburniana* were found and on a rock above them *Pleione limprichtii* leaves were noted though they had finished flowering. The beautiful flowers didn't stop there. What I initially took to be a *Roscoea* was flowering on the cliffs alongside two gesnerids, *Corallodiscus flabellatus* and another *Corallodiscus* species. It turned out this was an orchid – don't know which species though! We found a fine grape fern (*Botrychium matricarifolium*) under cover and there was even a gentian here, the pale blue-lilac *Comastoma pulmonarium*.

We got in the vehicles only to stop again two hundred metres later when a pretty pink *Primula* was found at the base of some bouldery rubble! Growing with this was another orchid *Galearis spathulata*. Further up the road a similar area of scree held the lovely *Meconopsis prattii* in fine flower, her with *Saxifraga sibirica* and *Corydalis* species. Jane spotted a large gentian in flower across the river and out of reach. It was all we could do to drag ourselves away, but we managed

it, passing the hot springs where much *Primula cockburniana* could be seen flecking the meadow with orange. We started noticing vultures in the sky and soon there many of them. We stopped to admire them, noting an adult Lammergeier too.

We stopped up in the Rhododendron scrub and had a lunch-time snack and tea. The boggy valley that reached the roadside here held an amazing variety of Primulas with no less than six species within fifty metres of the vehicles. There was the tiny pink *Primula rhodochroa* growing with *Parnassia pusilla* and a tiny *Gentiana* in the boggiest bits, then in the only slightly boggy parts *Primula sikkimensis* flowered with at least three other Primulas. Drier spots under trees etc had *Primula cockburniana* and the capitate-headed pale violet *Primula watsonii*. *Pedicularis longiflora* var *tubiformis* had yellow blooms glowing almost as strongly as the lovely *Caltha scaposa* which was common here. A tiny burnet *Sanguisorba filiformis* showered the wet areas with little heads of white and the beautiful prostrate purple heads of *Ajuga ovalifolia* nestled in the eponymous leaves. There were some great views of Pink-rumped Rosefinch here and in the shrubbery was Giant Laughingthrush. A Black-eared Kite flew over. Other plants noted were *Pedicularis pseudomyriophylla*, *Primula involucrata*, *Primula obconica* and *Trollius ranunculinus*.

The top of the pass was a short distance away but we again stopped just short as the impressive blooms of *Incarvillea mairei* lit up the scene. Then it was down into the montane steppe of Baimei for lunch passing Yaks and Dzhos grazing the open grasslands as we descended.

In the afternoon we had a bit of a long journey on to Luhou, however, the countryside was stunning, especially the Tibetan villages with their beautiful houses, all made from huge timbers and faced with stones, then decorated in traditional colours. We were now really on the plateau and wide open vistas were evident in all directions, what looked like mere hills were 4000m high and the rivers were huge too. Prayer flags and chortens (stupas) became common place. The prayer flags were set in triangular patterns in this region. We passed so many flowery and indeed birdy areas but had no time to stop.

## **Day 8      July 8<sup>th</sup>      Luhou to Ganze via the pass with no name!**

After a very good breakfast of stuffed dumplings in a nearby restaurant we packed up and said farewell to the hotel at nine. We headed northeast out of Luhou driving straight to the top of the pass and a little beyond, initially through beautiful valleys cloaked in open forest and meadows, then up into wide open grasslands that stretched as far as the eye could see, the hilltops visible for huge distances in each direction. These were studded with the jet black outlines of yaks and in every sheltered spot with a little flat ground and a stream up here were the black tents of nomadic herders. Our first stop was just before the pass where we photographed a glorious display of *Salvia evansiana*, a sage so over the top it should have been in Mexico! There were some fine *Incarvillea mairei* and we also spotted the unusual *Nardistachys grandiflora* a little pink thing that didn't at all look like the *Valeriana* it was supposed to be related too. An important medical plant it has strong protection here. Godlewski's Buntings were very tame. *Lancea tibetana* was below the road.

The rest of the morning was spent a little down the pass where open scrub laced the slopes at around 4000m. It was very flowery here. Once again *Meconopsis* made the initial impact. Here was the lovely Prayer Flag Poppy in abundance and with no wind photography was blissfully



easy. There were the pure yellow goblets of *Meconopsis integrifolia*, and lots of the prickly *Meconopsis pratii* with sky-blue blooms centred with a large boss of yellow anthers. There was a fourth species too, the rather more delicate *Meconopsis lancifolia*, a lovely plant with up to three violet-blue blooms on each stem. Two yellow *Corydalis* species graced this show, the one with narrow leaves and orange on the lip was *Corydalis linarioides*. The green flowered *Parnassia lanceolata* was rather unusual and there was lots of *Trollius ranunculoides* as well as a curious little *Trollius* with bronze backed petals, this *Trollius farreri*. There was a little *Androsace* in the turf and the most fantastic *Pedicularis decorissima*. Hardly can a plant have been better named. The extraordinary flowers, pink with a deep purple galea that coiled round in front of the lip sat atop a 12cm long tube, each flower nestled amongst its neighbours – superb! *Rhododendron russicum* was in flower and there were three anemones here. A nice surprise was the yellow *Fritillaria przewalskii*. Birds were numerous with both Rosy Pipits and a Rufous-breasted Accentor common. Pink-rumped Rosefinch sang from bushes and Cuckoos called from above. Blue-fronted Redstart was seen briefly and a pair of Severtzov's Trt-Warblers posed for our cameras.

We took lunch just down the road. The sun was now out and so Himalayan Griffons sailed back and forth and a Lammergeier too. A pair of Hodgson's Redstarts gave good views and so too did strikingly red Red-fronted Rosefinch. Large-billed Leaf Warblers sang almost constantly and Elliot's Laughingthrush called all the while showing itself occasionally. The bank above the picnic held a marvellous display of *Primula secundiflora*, *Primula sikkimensis* and *Caltha scaposa*. What looked like a Violet Copper perched on the latter. On the grassier bank was a wonderful flora including *Adenophoras* and three gentians, *Gentianopsis* cf *grandis*, *Halenia elliptica* and a little *Gentiana*. There were five louseworts including *polyodonta*, *lachnoglossa* and *deqensis*. There was the black pea, *Thermopsis barbata*, abundant pink drumsticks of *Androsace spinulifera*, and *Iris polysticha*.

We drove back over the pass and stopped to photograph the scene, the yaks, the encampments and even some of the locals who, smilingly, joined in. We descended into the valleys stopping where we saw lots of *Aconitum* on the roadside. Above was lots of *Codonopsis convolvulacea*, a pretty pale blue species with quite open flowers. *Clematis tibetica* and *Clematis rehderiana* flowered in the field margins, and we found *Dracocephalum forestii* and *Primula hoi*. A strange bicoloured *Delphinium* was found and we noted lovely *Androsace integra* and the elegant *Androsace septentrionalis*.

The rest of the journey was completed through increasingly grand scenery. We reached a lake where we saw Ruddy Shelduck and Eastern Spot-billed Duck as well as a group of Eastern Cattle Egrets attending the scattered grazing Dzos. There were a number of Great Crested Grebes out on the water. We rose quickly into green grassy hills before descending again – we stopped by a bridge where we watched the antics of Hume's Groundpeckers. Then it was down the hill and into Ganze, a town stunningly decorated! The background was pretty good too with the snowy pinnacles of the Chola Shan rising to the south.

## Day 9      July 9<sup>th</sup>      Dzo Dala

It looked a touch rainy outside this morning though by the end of breakfast it had brightened considerably and the mountains were appearing through now shredding clouds. We drove southwards towards a band of high mountains, part of the Chola Shan, that separates Ganze

from the Yangtze Valley and beyond, Tibet. Soon after leaving town we were following a pretty valley up into these mountains, the snowy peaks already visible ahead.

It turned out to be a marvellous day with just some short periods of rain and throughout the flora, fauna and scenery was magnificent. Rather than describe the events through the day by place, I'll merely mention that we stopped first quite low down in the valley for a while, then a little higher where slopes by the road held very fine flowers. During the middle part of the day we were considerably higher, almost on the pass itself, and here we took lunch. After a rain hiatus we spent the early afternoon on the pass itself which was a heady 4800m above sea level, and then, for some of us, we had a late afternoon session up a stunning side valley at about 4600m. So by the end of the day we had a pretty good picture of what was to be seen in this wonderful mountainous area though given a few weeks we could have seen so much more!

Starting with the mammals, we were very lucky to see around ten Blue Sheep, feeding on a grassy slope well above the road. We were able to watch these elusive creatures through the 'scope for some considerable time. Later in the day we saw many Himalayan Marmots including some entertaining animals at the lunch spot just below the pass.

The birds. Himalayan Griffon and Lammergeiers were seen regularly, and at one stage we had three of the latter together in the air. I saw some fabulous Red-fronted Rosefinches. These large rosefinches are stunning, the male shimmering red on the face and chest. Three species of Accentor were seen, both Robin and Alpine Accentors were seen only once or twice, however there were several sightings of Rufous-breasted Accentor. Redstarts were even more varied with Blue-fronted, Black, White-capped Water and Plumbeous all seen. There were Rosy Pipits and Kessler's Thrushes. A covey of Tibetan Snowcocks hurtled down a valley close to us but out of sight. Twice during the day we saw family groups of the lovely Severtzov's Tit-Warblers and I enjoyed close up views of the unusual White-browed Tit too.

But could the plants compete with is excellent haul off birds? The answer was an emphatic yes. The streamsides as we drove up were lit by a yellow veil of *Primula sikkimensis* with the purple bells of *Primula secundiflora* adding to the show. *Primulas* were as usual varied with the pale lilac *Primula conspersa* common on screes and the violet *Primula limbata*(?) growing on screes too! A dwarf *Rhododendron* offered its pink or mauve flowers throughout the upper parts whilst a little lower it was yellow *Potentilla fruticosa* and white *Potentilla glabra* that dominated. *Meconopsis* of course were at the forefront with yellow *integrifolia* again prominent and this time they were joined by the prickly *racemosa* with lovely racemes of blue flowers. Lowest was the conical hanging lilac blue bells of *Meconopsis quintuplinervia* whilst only a little higher the purple with a hint of blue flowers of *Meconopsis henricii* started, these going right to the pass top at 4800m where they and *Meconopsis racemosa* were dwarfed and made stunning portrait shots against the snowy pinnacles beyond. Up in this area we found some fantastic alpine. There were cushions of saxifrages and *Androsaces*, little *Saxifraga pseudohirculus*, *Anemone yulongshanicus* and on screes the delightful *Corydalis scaberula*. Growing with this was the plant of the day, the Dalek of the plant world, the curious upside down cone of silvery hairs that is *Saussurea medusa*, the hairs almost completely concealing the leaves. Above the lunch spot the *Corydalis scaberula* was joined by a lot of fine yellow blue-tipped *Corydalis hamata*, the large yellow flowered *Corydalis dasyptera*, and the delicate brilliant blue *Corydalis pachycentra*. Other fine plants included *Primula tangutica*, some large blue *Paraquilegia microphylla* forming cushions on rocks, and lots of the striking blue *Salvia evansiana*. There was a single-flowered Delphinium of great beauty, yellow, purple or reddish

*Anemone coelestis*, white *Anemone rivularis* and so many more species too.

And all day long stunning scenery, hardly a soul about, and a great little picnic too. A really very good day!

## Day 10      July 10<sup>th</sup>      to Maniganga

After breakfast there were various things that needed doing in town so it was a while later before we started following the river valley westwards. Not far out of town we stopped and searched a slope above the road. *Herminium alashanicum* and *Herminium monorchis* were both common at this spot and we found a third *Herminium* species too. *Stellera chamaejasme* was in fine form and there were two *Dracocephalums*, the narrow leaved *forestii* and the rather less showy *calophyllum*. *Allium macranthum* flowered in a gully. *Dianthus superbus* described itself well and there were also *Clematis tibetica*, *Vincetoxicum forrestii* and a strange *scabious* with pink flowers and black anthers to enjoy. As usual *Pedicularis* were very varied – here *Pedicularis longiflora* subspecies *longiflora* smothered the roadside whilst the flat area held lots of yellow *Pedicularis duclouxii*. Further up the slope the slim red *Pedicularis kaliensis* was found. Butterflies were numerous and Oriental Skylarks sang above us. A Grey-headed Woodpecker flew in and made loads of noise along the roadside poplars. A strange stinkhorn had *clathrus*-like markings at its tip.

We continued along the road west stopping at Rumbanga, one of a number of similarly built local villages. Tsebho guided us around, taking us through the tracks and paths that wound through the houses. He showed us where they housed the prayer wheel and we walked round it clockwise admiring the paintings on it and the walls. Several local children, very well behaved, joined us and enjoyed posing for photographs. We passed a big chorten and then wound our way back round the village, taking photographs of the houses, their decorated exteriors and the whole scene with high mountains in the background. The pink *Hypocoum leptocarpum* was noted and Red-rumped Swallows and Tibetan Wagtails too. We next passed a power site. This was where a small river disappeared under a big rock only to reappear the other side. There were abundant prayer flags these billowing in the strong breeze.

Our lunch spot was a beautiful place with flower-filled slopes below us reaching a rushing river below. Behind us lay a great mountain scene. Butterflies were abundant in the warm morning sunshine. Particularly so the 'black-veined white', *Aporia hippia*, with just a hint of yellow on the underwing. There were several fritillaries, clouded yellows, a blue or two, a couple of coppers, one of which had brilliant fiery orange uppers, and a strange nymphalid that looked like a cross between an emperor and sailor. The yellow *hypericum*-like spikes of *Spenceria ramelana* were prominent and amongst the bushes of *Myrica rosea* we found *Geranium poylzewianum* and *Geranium pratense*. In a boggy area the delicate little deep pink *Primula rhodocroa* flowered with the edelweiss *Leontopodium calocephalum*. White-browed Tits were seen and a Lammergeier was deemed too far away to be bothered about! Across the river was tall *Pedicularis trichocymbra* and the smelly *Cimifuga foetida*.

Then it was on towards Maniganga however we couldn't resist another stop or two. First was a group of Hume's Groundpeckers doing their thing – they are entertaining birds. Up a wooded slope I saw our second and third Grey-headed Woodpeckers of the day as well as a number of Songar Tits and a Grey-crested Tit. Down by the road David was trying to photograph a

recalcitrant Black Kite and Jane and Michael had spotted Hodgson's Redstarts. *Paeonia veitchii* was in good bloom.

We entered a kind of tableland where the turf showed signs of permafrosting and here Black-eared Pikas were very very common. We watched spellbound as these cute little rabbit-relatives scampered this way and that over the turf. We soon came to realise that they had company. There were a number of groups of Hume's Groundpeckers doing strange things as they are wont too! A pair or two of Rufous-necked Snowfinches were seen and there were any number of the White-rumped Snowfinches too. All three of these birds live commensally with the pikas! We also spotted a Himalayan Marmot across the road. Moving further along the road we stopped when a large raptor was spotted on a telegraph post - an Upland Buzzard

After noodle soup courtesy of a local restaurant run by an Islamic minority from the arid northwest of China (very good!) some of us went out on a night drive for a couple of hours. This was partially successful in that we found a Red Fox and two Tufted Deer, but it was more a case of the two that got away!

## Day 11      July 11<sup>th</sup>      Cho La – a giant of a pass!

Breakfast was across the road from the hotel and featured noodle soup. The open front of the restaurant meant we could watch the crazy comings and goings of the wild west sort of town.

We spent the entire day covering the journey to Dege, just a few miles short of the Tibetan border. However the journey time itself was not long, maybe three hours, so the large part of the day was spent in the field and much of it near the top of a mighty pass. Our GPSs were giving 4900m at the top, that's 15,900 feet in old money! Our gradual process of acclimatization had been particularly successful and we all felt that we were very happy at this altitude! However back to the approach. As we started to rise into a picturesque valley we noticed the rocks were all carved, so many great granite boulders had giant writing on them, all carved into the stone, a most impressive sight, especially when we stopped to take photographs of a stunning lake hemmed in by mountains and with these stones in the foreground.

We moved up towards the top of the pass stopping a couple of times at around 4750m. Our main prize here caused us to gasp in admiration - our first *Chionocharis hookeri*. We wandered the slopes finding more. The other cushions common here were the rather less showy *Arenaria polytrichoides*. There were lots of very fine squat yellow and russet blooms of *Pedicularis oederi* to enjoy and the pale ferny-leaved *Pedicularis cheiranthifolia* was found too. There were Potentillas, lots of Saxifrages and even the lovely little buttercup *Ranunculus glabricaulis* with flabellate leaves and purple-edged sepals. A striking grey, black and white butterfly of the *Metaporia* persuasion was seen. Morag spotted something between boulders – the rare *Primula crocifolia* with yellow flowers. Small groups of Plain Mountain Finches pattered about the slopes and Alpine Chough were common. A superb Lammergeier cruised low overhead.

Now we reached the pass. In some respects a desolate place, but at 4900m it had every right to be. Prayer flags draped a stupa and the iron ore truck drivers and occasional other vehicles stopped and threw prayer papers to the winds chanting or shouting their wishes as they did so. Either side of the pass the land rose to ridges of shattered rock from which great scree descended, take

your pick, fine mobile scree to giant boulder scree and everything in between. There was not much up here for plants. Several of us took on the scree slopes above the pass hoping to find something special. In the rocks at the foot were several Large-eared Pikas. The red-flowered *Rhodiola crenulata* was common and we found a pretty *Corydalis* with green, yellow and white flowers. The strange and beautiful *Soroseris rosularis* flowered on the first scree, its 15cm rosette of leaves flat to the substrate and topped by creamy flowers – an extraordinary looking plant. There was a lovely large-flowered *Aconitum* and also the *Delphinium* with single large hairy blooms, this *Delphinium beesianum*. Tibetan Snowcocks called and there was a White-winged Redstart on the rocks too. Meanwhile Jane and some of the others had been wandering down the road the other side of the pass and had found what we were looking for – an amazing silvery dalek. Just a couple of mature plants – and just above the road too! Standing about 15cm tall and columnar all that was visible was the long silvery hairs that covered the plant. Looking very closely one could see pinnate leaves inside. This was *Saussurea simpsoniana* (or was it *leucoma*??) a species that is known to occur as high as virtually any flowering plant in the Himalayas, going up to around 6000m and not occurring much lower than we found it today, at 4975m.

We descended a little for lunch enjoying the amazing scenery in warm sunshine, the lines of shattered peaks occasionally interrupted by a hanging glacier. Golden Eagle was spotted in the distance

We moved back uphill to spend quality time with a magnificent display of *Chionocharis hookeri* with many large plants totally smothered in blue blooms. Most were just ten centimetres across, but some approached twenty cm. Here we also found the electric blue *Corydalis pachycentra*, yellow *Soroseris gillii*, and yellow *Corydalis dasyptera*. Further round, as *Erebias* and Fritillaries flew past, I found the highly scented *Primula limbata*? (David had already found some late morning), the lovely buttercup *Ranunculus glabricaulis* and *Doronicum briquetii*. In the morning I'd seen what looked like a Chinese Sparrowhawk fly through and this afternoon it appeared again, this time carrying prey – what was it doing at this altitude?!

The rest of the afternoon was spent descending to what seemed the subtropical valleys of Dege. We stopped to photograph the view and spotted 49 Blue Sheep on the slopes above.

## **Day 12      July 12<sup>th</sup>      Dege and journey to Ganze**

There had been rain in the night and in the morning there were wispy clouds hanging in the deep gorge in which Dege sits, though the rain had stopped at breakfast. We were packed up and off by nine or so, though we had hardly five minutes to drive to the famous Parkhang Printing Press. The impressive red building is considered one of the three most important sites for Tibetan Buddhists. It contains something like seventy per cent of Tibetan literature all in hand printed books. These books are printed on long sheets of paper that are then made into books with long-handled wooden covers. These works are then loaned out to monasteries and to local communities throughout the Tibetan region. The importance of the place could be gauged by the large number of people doing the clockwise prayer walking round the building. These provided quite a good opportunity for photography!

Tsebo took us on a guided walk through the place. Entering the main door we found ourselves in a brightly decorated long courtyard before we entered the King's room where a large number of

Buddhist statues were housed, a monk was chanting as Tsebho told us about some of the statues. Then we went upstairs to the main printing place. Here about a dozen teams of two were working hell for leather at printing the pages. They do 3000 per team of two before finishing for the day and so the quicker they do it ... They all worked with great precision and at high speed. Pages were being produced at an incredible rate! The sheets of hand-made paper are apparently made from the root of *Stellera chamaejasme*! Then it was into the library itself where the wooden covered books were stored much as any library books would be, but of course to us they all looked the same, except for the most recent ones which had paler wood! Then it was into an area where we could watch two guys printing pictures that were meant for general consumption and here people are able to buy some pieces of printed paper. We spent a while on the top of the building admiring the setting and the houses and joining in with a number of selfies. Tsebho pointed out that you could tell the age and authenticity of the building by the layers of charred (or black painted?) twigs of *Potentilla fruticosa* traditionally used in the structures of these old buildings.

Things had been going swimmingly up to this point but now the rain came back and not only was one of our landcruisers blocked in but the road below the printing press was blocked by a large lorry that had somehow become wedged between buildings. With no other way out we were stuck. Various methods were used to try and move the lorry but to no avail so eventually a crane was called in. We meanwhile had waited, chatted, looked at photographs, or napped, or had a look at the fascinating shops below the printing press. We decided to take an early lunch as the crane trundled up the hill. The crane made short work of the problem and soon the lorry was on its way, and so too was our lunch, a delicious soup of stuffed pasta – truly excellent.

Then it was up the long valley to the Cho La Pass, several hours later than planned, so stops would necessarily be few. We passed a large painting of the Avalokiteshvara, the Buddha of Compassion, produced in vibrant colours on a rock face. We made a plant stop for some fine *Incarvillea delavayi* which was in bloom on a cliff where we also noted a lovely blue *Allium* and a fine Clematis. We also made a bird stop where we encountered Pink-rumped Rosefinches, these giving great views, as well as Hodgson's Redstarts, Songar Tits and a White-winged Grosbeak. White-throated Needletail flew into its nest in a cliff above us. Kurt's team had brief but good views of a Wallcreeper as we drove on up.

A sudden 'I've just seen something with horns' from Morag had us stopping swiftly and sure enough there was a Blue Sheep very close to the road looking at us and wondering whether to saunter or run uphill. It chose to saunter and as we watched it was joined by another and then we became aware of some more up on the rocks above. As we enjoyed these there was a sudden commotion as three more suddenly appeared out of a roadside culvert right next to us!

Then it was up to the top of the pass where we stopped for a while to go and look at some *Primula limbata* that David had found the day before. They were largely over but one or two had decent flowers still and there was also much of the lovely yellow and white *Corydalis* here as well as three other species of *Corydalis* – *hamata*, *pachycentra* and *dasyptera*. A male White-winged Redstart was nearby and Kurt suddenly announced the presence of a Grandala. This was flying along behind a Himalayan Buzzard but soon landed on the slope opposite where we had distant but good views of this stunningly electric blue bird. The Chinese Sparrowhawk also flew through and we'd seen another Wallcreeper on the approach. Jane spotted what looked like Coral Fungus growing on a log by the road and we had good views of a Large-eared Pika in the rocks.

It was time to move on as we had a long journey still to Ganze. We made a brief stop to take on some tea and here saw more of the Pink-rumped Rosefinches, some Blandford's Mountain Finches and lots of Kessler's Thrushes. Further along we could see many Black-lipped Pikas and a few Himalayan Marmots as well as Hume's Groundpeckers as we passed Maniganga.

We arrived into Ganze at around seven in the evening and settled into the now familiar Yong Fang before going out for another very good evening meal.

### Day 13      July 13<sup>th</sup>      Along the Yulong River and then to Litang

We woke to a grey and murky morning with cloud hanging low over the landscape. We soon found ourselves following the course of the Yulong River southwards through these great mountains. This is a mighty river, one of the main tributaries of the Yangtze and during the nearly four hours spent by its waters it never seemed to have a calm moment. Indeed for such a large river it travelled with a ferocity that was surprising. It was also an amazing reddish colour! The landscape we descended through was spectacular, dropping from the high grasslands around Ganze through steep sided forested lands and into gorges interrupted by areas of more serene landscapes where man had managed to settle. The villages, and indeed individual farm houses, were striking. They were huge. Each was three stories high and clearly contained many and large rooms. They looked like they could withstand pretty much anything so well-built were they. Apparently three generations would live in them at the same time (floor each?) though they still spoke of wealth and security. We passed piles of mani stones, stones that have prayers carved into them, as well as many stupas and temples. We hardly had time to stop as we needed to get many miles under our belts this morning, merely contenting ourselves with a comfort stop and a brief stop to look at some mani stones.

We stopped for lunch in the county town – and what a great lunch it was, so many lovely dishes. We continued along the Yulong before turning on to the route up to Litang. Swallowtails, mostly if not all Asian Swallowtail *Papilio Xuthus*, and various satyrids and hairstreaks fluttered about and White-capped Water Redstarts were as ever noisy near the river, not as noisy as the cicadas though! We stopped to take a look at some *Clematis delavayi* and chanced upon a population of *Incarvillea sinensis*. Further along was a delicate little long-tubed *Pedicularis* close to *croizitiana* but having 5 lobes to the calyx, not three. Also growing here was a little yellow *Viola* and the lovely *Daphne rosmarifolia* with narrow orange-yellow flowers. Then it was up into the hills, though we were still hardly below 3000m. The road wound its way up gradually passing the neat village of Junba and thence into slopes sparsely covered in conifers. We reached around 4000m and took a look at a fantastic little flowery place. We passed massed displays of *Primula sikkimensis*, and could have stopped anywhere for this was a very flowery pass, but we were limited by time and had to put all our eggs into one basket so to speak – so our last stop was in the alpine meadows just below the pass and what a spot it was. We followed a shallow stream valley uphill into a flower wonderland. The stream was lined with the aforementioned *Primula sikkimensis* and *Primula nutans*. Brilliant *Incarvillea mariei* subspecies *grandifloras* (and my, they were *grandifloras*!) smothered a bank where *Ligularias* smothered all else in yellow. We found *Adenophora jasionifolia*, a fine large *Trollius*, and fabulous stand of both *Ajuga lupulina* and another purple *Ajuga*, but these couldn't compete with the spired lanterns of *Rheum alexandrae*, the palest lime green inflated bracts covering the flowering spikes up to a height of a metre or so. There were just one or two to

start with but as we rounded a corner in the stream there were hundreds, lighting up the moorland landscape for us. *Corydalis hamata* bloomed along the stream. A Tibetan Partridge sauntered past me whilst above two adult Lammergeiers played, touching wings and almost grappling talons, and something rare for Lammergeiers, calling querulously to each other.

Once over the 4400m pass we soon started passing nomadic herders and their number rapidly increased as we travelled along a serene looking valley. Indeed tents, yaks and herders hardly seemed to diminish for the next twenty kilometres before we descended into Litang. Hardly the right word really for Litang is at 4000m above sea level and is the highest town in Sichuan. Our hosts gave us a warm welcome and after a hot shower we were ready for the evening meal which was excellent.

## Day 14      July 14<sup>th</sup>      to Yajlang

We started the morning at the Litang Monastery. Like many of the region's monasteries this was rebuilt after the cultural revolution and what a spectacle it was especially rising from the rather one-horse-town surroundings of Litang. A fire in 2014 had burnt down the main temple and the kitchen and so rebuilding work was underway though so much had already been done. Tsebho started with a little background about the monastery and its importance – it was the birthplace of the sixth Dalai Lama. He entertained us greatly with tales of the renowned Litang lack of reverence for authority. In particular the tales of the troubles at Litang's famous horse festival kept us enraptured. Then we moved inside a temple where a large statue of the founder of the Galumpha School of Buddhism in Tibet dominated an impressively decorated shrine. As he talked we started to hear chanting and Alice suggested it might be nicer to go and see the monks so Tsebho enquired and so we were allowed to enter the building where around a hundred monks were sitting in full habit, many with rather spectacular orange or yellow headgear. They regarded us mostly with interest as we walked rather sheepishly through them to the alter where pictures of the Dalai Lama and Panchen Lama lay. As Tsebho told us more about Buddhism suddenly the monks started chanting again. We moved through to another shrine where we admired a huge statue of the Buddha and the remarkable artwork around. Then Tsebho showed us into a room where we learnt about the Taras. Lastly as we came back out Tsebho explained the wheel of life Mandala and as he did so cheering and what sounded remarkably like football chanting broke out for the monks!

Then it was onwards with our journey. We left the town heading upwards which is always impressive from 4000m! In fact during the entire day our road took us along a ridge keeping us between 4000m and 4500m until our final descent into Yajlang. The landscape was not so much spectacular as big with grassy steppe covered ridges of a similar height stretching off in all directions. Occasional glimpses of lower regions showed thick forests coming up to meet these grasslands in the sky. We explored a shallow slope that was covered not in grass but by a small *Isolepis* species or similar, for this was tundra, the ground almost permanently frozen, and even now in July it was hard underfoot and slippery to those of us in wellies! Further along the road we reached a low pass (so 4300m or so!) where we found an impressive display of *Rheum alexandrae*. This made for a memorable photographic spectacle. The tundra here exhibited a characteristic form of frost-heaving associated with shallow gradients, illustrated by the formation of hummocks in lines. Shorelarks gave good views and we found a few Tibetan



Snowfinches and Hume's Groundpeckers, and there were several Brandt's Mountain Finches. The slopes above the valley floor had a remarkable show of flowers. Chief amongst them were hundreds, no thousands, of *Incarvillea mairei*, these having the huge blooms of subspecies *grandiflora*. Equally colourful and abundant was the purple form of *Ajuga lupulina*. There were little clumps of the magical *Pedicularis latituba*. A Woolly Hare flushed down into the valley and then stayed put so that David could get some photographs.

We moved some way along the ridge stopping for lunch in a wide open expanse with great views all round. *Lagotis integra* was in the stream here and a surprise was *Platycodon grandiflorum*. As we neared the highest pass of the day, (4629m but our GPSs suggested 150m lower) we struggled to reach our main target due to weight of fine plants. First was a stream with a truly wonderful display of *Rheum alexandrae*, these accompanied by *Primula sikkimensis* in exceptional form and much *Salvia evansiana* and *Ligularias*. The *Lilium lophophorum* here was of a curious pinky-peach colour as well as the normal yellow form. There was a great view of Pink-rumped Rosefinch and Himalayan Rubythroat. Closer to the pass we found a bank covered in lavender and pink *Corydalis calcicola* and stopping to photograph these we found *Rhododendron phaeochrysum* still in bloom, a stunning red form of *Saxifraga melanocentra*, and the little orchid *Galearis diantha*.

Our major stop of the afternoon involved an exploration up a side valley just below the pass. The lower areas by the stream held little we didn't already know, however as we rose up through the *Rhododendron* scrub we soon started to find new things such as *Androsace limprichtii*, the lovely hanging bells of *Cremanthodium campanulatum*, and a small stand of the gorgeous slipper orchid *Cypripedium calcicola*. There were plenty of birds about. Rufous-breasted Accentor sang from a *rhododendron* top and Pink-rumped Rosefinch again appeared, so too did Blue-fronted Redstarts and Golden Bush Robin. However it was the fine scree that rose above the scrub which gave us much cause to celebrate. For here were some special plants, most of them *Corydalis*! First was the lovely *Corydalis melanocentra* with pale blue and white flowers with black centres, these accompanied by the pink-lavender *Corydalis calcicola*. Soon we found the cream of *Corydalis*es though with the extraordinary *benecincta* a beautiful species with large pinkish flowers and amazing scree-coloured leaves. There were little mats of *Silene davidii* and the very fine *Pedicularis decorissima* a long-tubed lousewort with raspberry ripple ice-cream blooms. We noted Blue Sheep dung but soon our attention was drawn back to the plants as we looked at the rocks above the scree. Here was the delicate *Primula blinii* as well as new *Pedicularis* species and the lovely *Paraquilegia microphylla*. It was all we could do to get down fifteen minutes late!

On the way down we spotted *Lilium bakerianum* hanging from a roadside cliff!

## Day 15      July 15<sup>th</sup>      Yajlang to Kangding

We awoke to a reasonable dawn, clouds still holding sway at higher levels and a few dropping into the valley bottoms, a quintessentially Chinese scene! We departed a little after nine continuing along the main road east. We climbed steadily up a valley with steep sides but occasional patches of cultivated land at the base. There were farm houses and hamlets all the way along, each substantial and well-made. We spotted some lilies along the roadside. There were many plants of *Lilium bakerianum* subspecies *aureum* on the banks and amongst the shrubs. Some were two metres tall, and some had up to eight flowers on a stem. The colour varied a lot, from

bright yellow through to a dingy orange-green-brown and the spotting too, some blooms had lots, others were nearly free of them. We also found the lovely little *Spiranthes chinensis* blooming here. A very pretty pink and greeny-white orchid flowered on the bank, the stems rising from a single orbicular dark green leaf. Also here was a large pink and cream *Pedicularis* and *Codonopsis subglobosa*, with a deadly nightshade bell of pale green edged plum and centred inside with black and orange! Giant Laughingthrushes called across the valley and near at hand was a Chestnut Thrush. On top of the bank amongst more lilies we found lots of *Dianthus superbus* and spectacular displays of *Thalictrum delavayi*. A *cynanchum* climbed up the lilies as did the *Codonopsis* and there were some quite stunning *Delphiniums*. A large fritillary posed for a photograph and there were *Colias* species, a large blue, Painted Lady and a Sailor species.

Further up the valley we found a rather stylish way of making a road go uphill, the highway looping back and over itself several times – it looked amazing. Here we stopped to have a look at the yellow *Primula flava*. Growing with this was a stunning lousewort with white long-tubed blooms with a dark red galea – truly gorgeous. The yellow flowered subspecies of *Pedicularis rex* was here amongst the spikiest of oaks and there was also *Lloydia serotina* and two white *Silenes*. Daurian Redstart perched on a roadside post and there was again fabulous views of Pink-rumped Rosefinch. Kurt found an elegant display of *Arisaema ciliatum* in the unlikeliest of spots – the very manicured centre of one of the road loops!

Heading onwards we passed many cyclists, in fact for the past two days we'd been seeing a regular trail of them, all heading from the lowlands into the high mountains, brave souls! We passed through a long tunnel and then followed valleys winding through more high country. We were still at 3500m! Occasionally we saw people on the roadside selling yak butter or cheese and the animals themselves wandered across the highway, just as they did on the tracks of the Tibetan Plateau. The houses along this stretch were beautiful, solid and large.

A roadblock caused us to go down to the river and enjoy our picnic. After we tried to go on up the road only to find that they would not let us pass. So we had to take a lengthy detour through the mountains on a road that took us past Kangding's unlikely airport – sitting at 4000m up on the side of a mountain. Some enforced stops due to Joey's vehicle overheating meant we enjoyed marvelous colourful displays of *Spenceria*, *Pedicularis lachnoglossa* (also in a white form here) and the little blue *Cynanchum incanus*.

We moved to the top of the pass and walked up the steps towards a pagoda, the touristy thing to do, however we moved just metres off the path and found a magical flora. There were mats of pink *Silene davidii* insinuating themselves amongst the steps. We soon started noticing gentians, many of them not quite yet out, but after a while we found two large species in flower – the lovely white-striped *Gentiana nubigena* and the taller, sometimes branched *Gentiana tetraphylla* with a slight turquoise hint to the blue. There was little *Comastoma falcatum* and also mats of a blue *Cynanchum*. Amongst a carpet of colourful flowers were masses of pink or sometimes white *Androsace cf minor* and with red-purple and yellow *Hedysarums* and *Astragalus*. Vibrant red *Pedicularis siphonantha*'s long-tubed flowers were a fine sight and we found many more of this amazing genus – yellow *Pedicularis oederi*, and two fantastic species with white flowers set off by red galeas, both with tight heads of flowers close to the ground, so similar, yet very different when one looked closely, and I still haven't worked out what they are! There were squat blue *Meconopsis lancifolia* scattered throughout, lots of yellow from *Ranunculuses* and in particular several small Saxifrages. One was not so small – the stoloniferous *Saxifraga stenophylla* was a great

find. Dark red mats of *Sibbaldia purpurea* mixed with luminous blue *Corydalis pseudoadoxa*. There were several other species of these lovely flowers too, two yellow species, and on the screes a fantastic purple and white species with large heads of flowers and best of all, the stunning purple, blue and amaranth *Corydalis lhorongensis*. There were little groups of *Primula soulei*. Rosy Pipits were about the only birds on view. Several Apollos drifted up and down the slopes and there were fritillaries and even what looked like a False Comma. The views from the top of the path were sublime, we could see so much high country.

Next we went downhill. This was the site for the Black Primula. We thought we might be a little late and this proved (almost!) true. We searched for a while finding just a few plants that were over. Then Morag spotted a group of three, one with the last flower still perfect. A most strange flower indeed. The umbels hold up to fifteen or so blooms, mostly facing down or sideways and these had petal lobes of an intense black, with a hint of purple. In all around fifteen plants were found. This is probably a very rare plant, much of its habitat destroyed or damaged by recent road building. It was only rediscovered in 2006, nearly ninety years after the original collection had been made way off to the west in Tibet.

Growing around it was an amazing variety of other species. There were four more *Primulas*, the widespread *sikkimensis* and *secundiflora*, the blue *Primula deflexa*, and a fine reddish-purple species with tight umbels of half a dozen flowers on shortish stems – *Primula rupicola*. There were several orchids including *Galearis spathulata*. *Pedicularis* included the raspberry ripple *Pedicularis decorissima* and *Pedicularis katingensis* with strange hairy flowers. There were several *Corydalis* species, the blue *pseudoadoxa* and some yellow ones. On the slopes were stands of *Veratrum stenophyllum* and in the shrubbery *Lilium lophophorum*. Wherever one looked there were fine flowers. In contrast birds were rather quiet, only Blue-throated Redstart being seen though I did find a White-winged Grosbeak's nest with three eggs, having accidentally flushed the female off the nest.

We moved on down but soon came to a halt when tall spikes of *Notholirion bulbosum* were spotted roadside, in superb condition. Then it was down into Kangding, somewhat later than expected. We settled into the excellent Gesar Hotel and then it was to dinner, another scrumptious Sichuan set of dishes.

## Day 16      July 16<sup>th</sup>      Luo Gou Haii

A rather relaxed start this morning saw us leaving some time after nine and heading up the valley into the mountains. Passing the new government blocks being built well up the valley we could see, briefly a huge snow-capped peak in the distance. This is one of eleven peaks over 5000m that culminate in the 7500m Gongga Shan, though sadly the latter is not easily visible from this area.

We continued up towards the lake. Now we were in *Rhododendron* country, with much slightly dwarfed *orbiculare* by the road, now past flowering. Under it was little in flower, just a rather fine little *Ligularia* species. We noted the deep violet-blue flowered *Primula violacea* here and banks of what seemed to be *Primula soulei*. Suddenly we found ourselves by a lake with large boulders studding the near shore, crowned with mosses, lichens, rhododendrons and assorted blooms, looking like something out of fairyland. Snow hung deep on peaks reaching over 5500m around

us and the blue sky shone bright, just one or two small white clouds reflected in the lake. At the end of the lake is a now unused sand extraction area, and we pulled up and started our walk. An idyllic spot.

We walked up the valley above the lake stupendous scenery all around us. Rufous-breasted Accentors and Blue-fronted Redstarts were noted every now and again. A Hairstreak was photographed and Apollos and Fritillaries drifted past not often settling. *Primula soulei* was everywhere and there was a strange yellow flowered plant with calyxes were covered in dark glandular hairs – *Saxifraga nigriglandifera*. *Ligularia pleurocaudus* was a nice plant and of course there were *Pedicularis*, here *rhinanthoides*, *decorissima* and both *kantingensis* and *lachnoglossa*. The purple-blue bowls of *Meconopsis lancifolia* were frequent and we enjoyed *Codonopsis nervosa*, the flower if not the smell! Kurt found what looked like *Primula humilis*. Continuing up the valley we found an obliging pair of Alpine Accentors. I continued up into the screes which were rather less interesting than screes had been of late (no *Corydalis* or *Saussurea* species!) however one or two nice things fell my way. There was a lovely lilac Delphinium with lots of flowers held just above the scree. *Cassiope pectinata* was in fine flower at the foot of a cliff where *Androsace brachystegia* showered the mossy turf with little bright blooms centred with yellow. The tiniest of anemones – the flower hardly 5mm across, bloomed on the cliffs too and a great find was the striking large-flowered purple *Primula russeola*. Another *Meconopsis* was found, this the very prickly (dark-based prickles) *horridula*, differing from *rudis*, the other species in this region with dark based prickles, in having many flowers on single scapes, as well as being VERY prickly! Kansu Pikas were noted in the rocks and Tickell's Leaf Warblers and a family of Wrens were seen too.

During lunch an exuberant yak was sand-bathing by the lake with plenty of happy grunts.... In fact the yaks here had provided us with very many great photo ops during our stay. Little did they know we had yak in our sandwiches! Overhead Himalayan Griffons had been more or less constant during the morning and as lunch finished a Lammergeier drifted past.

We stopped half an hour where we'd seen a group of Japanese botanists in the morning. Here we enjoyed the abundant *Iris chrysographes*. There were orchids here too, notably *Galearis roborowskii*. *Primula deflexa* bloomed under cover, *Primula sikkimensis* and *Primula secundiflora* out of it. There was a beautiful *Pedicularis petitmenginii* with lined pink-edged white flowers, the very large bloomed *Parnassias*, and the lovely large blue *Corydalis trifolia*. Moving down a few switchbacks we explored an idyllic little spot (would have been without the roadworks!) where we noted the delightful yellow lipped and purple beaked *Pedicularis torta* as well as the improbable orange *Primula cockburniana*. Add to this the pink Geraniums and the yellow *Ligularias* and it was a very colourful scene. We found another pinky-red primula here, and there were more of the *Primula deflexa*. A huge *Trollius* was impressive and we saw several of a strikingly-marked *Riodinid*. Lower down we stopped for a few moments waiting for a truck to be filled up and found ourselves next to a tall multi-tiered *Pleurospernum* resembled a wedding cake.

Then it was down to our hotel here had a good break before heading out to dinner and tonight it was Sichuan Hot Pot. The hot pot is a kind of soup that you have on a hot ring next to you on the table and into which you put various vegetables and meats provided on the lazy susan. The hot pot came in 'normal' and 'spicy' options, those that took the spicy found that it was indeed extremely spicy! There were various vegetables, mushrooms, delicious succulent meatballs, thin slices of ham and yak coated in chili seeds to add to the soups. The stuffed pasta starters were delectable. Very delicious, but as usual we couldn't eat it all!

## Day 17      July 17<sup>th</sup>      Kangding to Chengdu

The cliffs and steep hillsides as we descended from Kamgding were draped in thick vegetation bursting with species richness – we could have stopped anywhere though the road made this difficult. The river was an intense, large, violent mass of brown water plunging headlong down the valley at an improbably destructive velocity. Another quintessentially Chinese scene.

We spotted our first roadside lilies, these we thought to be *Lilium davidii* with orange turks-caps but we didn't stop as we'd seen these earlier on the tour. We continued, spying lilies in difficult situations before suddenly a mass of huge lilies appeared on a steep slope above us. This steep slope however had a beautifully constructed set of steps zig-zagging up it, and the lilies started only a few metres up, so we were soon amongst them. It was a spectacular show of *Lilium sargentiae*. Many of them approached two metres in height and had up to five giant twenty cm long funnel shaped blooms. These were white but edged with brown-purple marking outside and with a bloom of yellow from the pollen inside. There were also patches of the lilac form of *Ophiopogon bodinieri* and the blue-flowered shrub *Ceratostigma minus*. Russet Sparrows were common and there was a beautiful hairstreak.

Our route would normally have taken us through a tunnel at this point and either side of this we would have seen the large yellow funneliform *Lilium sulphureum* with scattered red dots on the tepals, *Lilium taliense* and *Dendrobium monolithoforme*! However today it was not to be as the tunnel was closed and instead we were faced with an extra two and half hours journey so there was nothing for it but to knuckle down and cover the kilometres. It was really the first and only time that road closures had effected this year's trip.

Lunch was at a fish restaurant by a lower river. This was excellent. One of the dishes was fresh catfish, fried out in the open which was necessary as the herbs and species added created a tremendously acrid smoke! This was then added to a kind of soup – delicious – as were the many other dishes. While we waited we looked at cryptic cicadas and a beautiful large nymphalid butterfly. A Chinese Peacock flew past.

After lunch we continued the long journey to Chengdu, the road following a valley gently now down to the lowlands and once there we entered the modern world again and passed through a toll booth onto a motorway to Chengdu, which took us the last 220km to our destination with hardly a vehicle in sight until we reached the city itself. We negotiated the city's traffic, not too awful at this time of evening, and were in the hotel shortly after seven. Tsebho and the team took us across the road to a rather excellent vegetarian restaurant there and treated us to a final night's Sichuanese Cuisine – a splendid meal.

## Day 18      July 18<sup>th</sup>      Departure

A not-too-early departure and then we were all off to our various homes!

## Systematic List Number 1      Flora

Species listed inside [*Dryopteris*...] were not seen on this year's tour but noted on previous visits. The taxonomy and systematics of the following list follows the Flora of China, many volumes of which are now published in English, and which is available online at <http://hua.huh.harvard.edu/china/>

### **Pteridophytes**

<i>Adiantum capillus-veneris</i>	Wolong
<i>Adiantum davidii</i>	Common in parts of western Sichuan, typical maidenhair fern
<i>Athyrium otophorum</i>	Wolong. Lady fern with pinnules having a semi-hastate base
<i>Botrychium lunaria</i>	scattered in alpine turf
<i>Botrychium matricarifolium</i>	near Danba
<i>Cheilanthes argentea</i>	Wolong
[ <i>Dryopteris fragrans</i> ]	Wolong]
<i>Dryopteris fructosa</i>	Wolong
<i>Gymnocarpium remotepinnatum</i>	Wolong. Very elegant oak fern
<i>Hypodematium crenatum</i>	Wolong.
<i>Lepisorus angustus</i>	Wolong. single long pinnae.
[ <i>Osmunda claytoniana</i> ]	Interrupted Fern. Luo Gou Haii]
<i>Polystichum pseudorhomboideum</i>	Wolong
<i>Polystichum stimulans</i>	Wolong. Holly Fern-like
<i>Pteridium aquilinum</i>	Bracken. Scattered
<i>Pteris dactylina</i>	Wolong. Narrow palmately arranged fronds
<i>Pteris vittata</i>	Wolong

### **Taxaceae**

<i>Cephalotaxus sinensis</i>	Wolong and above
<i>Cunninghamia lanceolata</i>	between Ya'an and Chengdu
<i>Taxus yunnanensis</i>	Wolong

### **Pinaceae**

<i>Abies delavayi</i>	scattered on the plateau
<i>Abies fabri</i>	noted in the Balang Shan area
[ <i>Cedrus deodora</i> ]	scattered in upland forests]
<i>Larix potanini</i>	scattered
<i>Picea</i> spp	widespread on the plateau

### **Salicaceae**

[ <i>Populus nigra</i> ]	or something similar as the common roadside poplar on grasslands around Ganze]
<i>Populus wilsonii</i>	Wolong area
[ <i>Populus szechuanicus</i> ]	magnificent trees on the descent from Langdu]
<i>Salix magnifica</i>	looks like a rhododendron! 2011 Wolong

### **Betulaceae**

[ <i>Betula chinensis</i> ]	red-barked species. Wolong and Luhuo areas]
<i>Betula pendula</i>	Danba area. Wild Man Valley.
<i>Betula potanini</i>	Luo Gou Hai
<i>Betula utilis</i>	widespread in lower zones

## **Myricaceae**

*Myrica rosea*

Long racemes of pink flowers, shrub along rivers. Near Ganze

## **Phytolaccaceae**

*Phytolacca polyandra*

common around Wolong, also near Luhou

## **Juglandaceae**

*Engelhardtia roxburghiana*

lowlands below Wolong

*Pterocarya hupehensis*

wingnut sp. Wolong area

## **Fagaceae**

*Castanopsis fargesii*

Wolong area

*Quercus aquilifoliacea*

Above Wolong, Balang Shan and Yajlong areas

*Quercus semicarpifolia*

Wolong area

*Quercus spinosa*

Yajling

## **Theaceae**

*Schima wallichii*

large tree with white flowers frequent in lowlands around Ya'an

## **Ranunculaceae**

*Aconitum gymnantrum*

Widespread roadside species with deep blue-purple flowers

[*Aconitum polyanthum*

fine light blue monkshood]

*Aconitum pulchellum*

superb small alpine on pass south of Rilong

[*Aconitum tangutica*

Fine dwarf species on Dzo Dala]

*Anemone coelestina*

Cho La

*Anemone* sp

a minute (5mm) anemone with bluish flowers at Luo Gou Hai was distinctive

*Anemone demissa*

A hugely variable species with several distinct forms, the following two of which were widespread

*Anemone demissa* var *major*

Striking white variety with large dissect bract. Scattered

*Anemone demissa* var *villosissima*

Sky blue variety common Litang, Kangding, etc

[*Anemone hupehensis*

Yajlong area]

*Anemone obtusiloba*

Lu Gou Hai. Reasonably frequent in 2011. 2016 noted on the plateau

*Anemone rivularis*

Very wide inflorescence with long pedicels and purple backed white flowers. Wolong and Danba areas

*Anemone rupestris*

Extensive drifts on grasslands in white to pale yellow

[*Anemone rupestris* var *gelida*

Dwarf plant on Cho La pass, white flowers]

*Anemone tomentosa*

Mid-altitude valleys e.g. Rilong. Leaves heavily felted beneath, pink flowers

*Anemone trullifolia*

Dzo Dala and Cho La passes. Unusual oblong leaves with three points

[*Anemone vitifolia*

Pink flowers, mid-altitude forests, roadsides in wetter areas. Danba]

*Anemone yulongshanica*

Plateau. Variable flower colour

[*Aquilegia rockii*

Widespread and scattered purple flowers.]

*Batrachium bungei*

A crowfoot, occasionally seen in ditches and ponds. Tsosum Mountain in 2011. In 2016 noted near Maniganga

*Caltha palustris*

widespread in wet areas lower down

[*Caltha palustris* ssp *umbrosa*

Xiling Shan in wet areas.]

*Caltha scaposa*

common. Dwarf highland species with large flowers

<i>Cimicifuga foetida</i> [ <i>Clematis akebooides</i> ]	Yajlong in 2011. In 2016 near Maniganga Ganze, greyish rounded leaves, brownish purple backed flowers. Not seen in 2010]
<i>Clematis delavayi</i>	small shrub. Pinnate leaves and large white flowers. Noted alongside the Yalong River and near Yajliang
<i>Clematis montana</i>	showy shrub with cascades of 4-petalled flowers. Wolong and Kangding areas
<i>Clematis peterae</i>	Wolong
<i>Clematis pseudopogonandra</i>	near Ganze
<i>Clematis rehderiana</i>	common mid altitude species with yellowish campanulate bellflowers. Zhedou Shan in 2011
<i>Clematis tangutica</i>	large yellow bell flowers, acute tips to corolla segments, strongly- scented. Widespread in higher valleys
<i>Clematis tibetica</i>	frequent along roadsides, often prostrate but also scrambling brownish to orangey-yellow, similar to <i>tangutica</i> but smaller flowers. Jainxi Pass in 2011
<i>Delphinium beesianum</i>	large deep blue flowers with long spurs, Cho la Pass.
<i>Delphinium caeruleum</i>	bi-coloured flowers. Pass with no name near Ganze
<i>Delphinium kamaonensis</i>	Zhedou Shan
[ <i>Isopyrum anemonoides</i> ]	Balang Shan etc. Delicate white flowered buttercup cum anemone!]
<i>Oxygraphis glacialis</i>	scattered in highlands, a miniature celandine
[ <i>Paeonia delavayi</i>	in fruit on the Zhedou Shan]
<i>Paeonia veitchii</i>	fine species with dissect leaves and deep pink flowers, scattered in scrub/larch adjacent to grasslands from Wolong westwards
<i>Paraquilegia microphylla</i>	lovely pure white form on Jiajing Shan. Plants in the Kangding area with bigger bluer flowers
<i>Ranunculus balangshanicus</i>	2016 – Balang Shan!
[ <i>Ranunculus cangshanicus</i>	mires on Tsosum Mountain]
[ <i>Ranunculus dielsianus</i>	red sepals, small ternate leaves, single flowers. Mires on Tsosum Mountain]
[ <i>Ranunculus diffusus</i>	leaflets ternate or 3-parted. Looks like an annual (but isn't) and grows in grassy places by streams, lowlands. Noted at Chengdu Panda Centre]
<i>Ranunculus glabricaulis</i>	leaves 3 sect nearly to middle. Sepals dark purple or greenish. Dwarfed plant. Cho La Pass
<i>Ranunculus japonicus japonicus</i>	rather like meadow buttercup <i>Ranunculus acris</i> . Wolong and Balang Shan
[ <i>Ranunculus melanogynus</i>	black carpels make this a very distinctive species. Plant dwarf, leaves glabrous 3-partite reniform. Dzo Dala. Not recorded in Sichuan by the Chinese Flora (though in S Xizang) but given how easy it is to recognize...in 2011 what appeared to be this species was seen on Tsosum Mountain]
[ <i>Ranunculus membranaceus</i>	basal leaf oblong, undivided, hairy. Scattered in 2011]
[ <i>Ranunculus cf. menyuanensis</i>	Tuor Mountain – very like this species but a long way from its known stations]
<i>Ranunculis micronivalis</i>	very small flowered and small-leaved. High altitudes. 2016 Balang Shan
<i>Ranunculus nephelogenes</i>	basal leaf undivided, glabrous, ovate. Petals rounded. Dzo Dala. Tsosum and Tuor Mountains. 2016 various high passes.
[ <i>Ranunculus petrogeiton</i>	dwarfed plant, basal leaves 3-set, thin, glabrous. Balang Shan]



<i>Ranunculus tanguticus</i>	basal leaves 3-sect, further divided with narrow segments. Balang Shan. 2016 same but also scattered on the plateau.
[ <i>Ranunculus yunnanensis</i> <i>Semiaquilegia ecalcarata</i>	entire slightly crenate leaves. Tuor Mountain] quite frequent alongside streams and rivers in western Sichuan, looks very much like an <i>Aquilegia</i> with bits missing
[ <i>Thalictrum alpinum</i>	diminutive, flowers in a raceme, leaves basal. Balang Shan & Dzo La]
<i>Thalictrum delavayi</i>	tall lilac-pink species. Abundant along valleys in Western Sichuan
[ <i>Thalictrum foliolosum</i>	green-tinged yellow sepals, metre tall. Danba area]
<i>Thalictrum javanicum</i>	common in Danba area. Yellowish green flowers, tall
[ <i>Thalictrum omeiense</i>	tall white species. Danba area]
<i>Thalictrum przewalskii</i>	Tall white sp in Dege area and elsewhere. 2016 near Maniganga
<i>Thalictrum rutifolium</i>	purplish-tinged sepals, dwarf plant. Jainxi Pass
<i>Thalictrum virgatum</i>	Delicate green flowered species. Wolong area
<i>Trollius buddhae</i>	frequent on the Balang Shan
<i>Trollius farreri</i>	purple backed golden flowers. Leaves cut almost to base. Ganze area
<i>Trollius pumila</i>	Rilong area
<i>Trollius ranunculinus</i>	typical deep yellow trollius, common, dissect palmate leaves. Commonest in high areas
<i>Trollius yunnanense</i>	Ganze, etc, palmate-parted leaves. The common globe-flower at mid-altitudes e.g on Balang Shan, also Kangding area

### **Berberidaceae**

<i>Berberis dictophylla</i>	Zhedou Shan. 2016 Rilong area
<i>Berberis jamesiana</i>	Wolong area
<i>Berberis tenuipedicillata</i>	common around Wolong
<i>Diphylleia sinensis</i>	Near Yajling
[ <i>Epimedium davidii</i>	between Danba & Yajlang]
<i>Mahonia lomariifolia</i>	Wolong and Balang Shan
<i>Podophyllum hexandrum</i>	noted in fruit, various places, woodland edge

### **Papaveraceae**

<i>Digranostigma leptopodium</i>	drier roadsides at mid-altitudes – like a large flowered Greater Celandine
<i>Hypecoum leptocarpum</i>	pink! Seen only Yazhi Cum, the village we visited on the way to Maniganga
<i>Meconopsis balangensis</i>	var <i>atrata</i> . The plants we saw on the top of the Jiajing Shan Pass that were so dark purple to almost black would seem to fit this species. Dark-banded bristles as in <i>rudis</i> .
[ <i>Meconopsis delavayi</i>	?or at least similar to this! Balang Shan. Tall stems with nodding purple-lilac flowers]
<i>Meconopsis henrici</i>	Beautiful large lilac-purple flower near Luhou and Ganze and also on the Zhedou Pass. Like <i>lancifolia</i> except flowers larger and held more upright and with whitish anthers. In 2016 on Dzho La and the Cho La
<i>Meconopsis horridula</i>	Luo Gao Hai. Solitary blue flowers on many scapes, leaves all basal, plant very prickly with straw-coloured spike-like hairs with dark bases. Base of scree.

<i>[Meconopsis impedita</i>	Between Litang and Yajlang. Grassy passes. Leaves all basal, flowers singly on scapes, bristly plant, flowers purple with white anthers]
<i>Meconopsis integrifolia</i>	abundant above 4000m on Balang Shan and widespread elsewhere – distinctive three veined leaves. Yellow flowers
<i>Meconopsis lancifolia</i>	Common purple species seen on Balang Shan. Lanceolate leaves, flowers looking downwards, yellow anthers. Widespread between Balang Shan and Ganze in 2016
<i>Meconopsis pratii</i>	between Danba and Luhuo. Bristly plant with leaves both basal and cauline and with inflorescence with many blue flowers, In 2016 en route to Luhou and also Dzho La
<i>Meconopsis punicea</i>	perhaps the most extraordinary species seen - red with curious downward pointing petals, on Balang Shan and north of Luhuo. In 2016 was seen abundantly on the Balang Shan, the Jiajing Pass, and the Dzho La
<i>Meconopsis quintuplinervia</i>	on the Dzo Dala south of Ganze, lovely nodding lilac bells. In 2016 on the Balang Shan and the Dzho La
<i>Meconopsis racemosa</i>	fine blue species common in many places e.g. Ganze, Dege. Blue to purplish spicate with very bristly leaves. Chola Shan population has distinct white spots at bristle bases and may be a different taxa. Somewhat difficult to be sure as every population seems different.
<i>Meconopsis rudis</i>	Balang Shan, spicate with blue flowers and dark purple spots at bases.
<i>[Meconopsis sinomaculata</i>	2011 seen between Danba and Yajlang]

**Fumariaceae** A stunning array of *Corydalis* were seen – many not identified!

<i>[Corydalis adunca</i>	Luhuo area. Roadsides with orangey flowers]
<i>[Corydalis appendiculata</i>	Dark blue species with orbicular broad-lobed leaves on Xiling Shan]
<i>[Corydalis atuntsuensis</i>	Lovely elegant, slender yellow species in alpine turf south of Ganze and Zhedou Shan area. Dark green, narrow leaves. 2011 between Litang and Daocheng]
<i>Corydalis barbisekala</i>	Balang Shan. Flowers clear azure-blue to purplish-blue, very dense flowerheads.
<i>Corydalis benecincta</i>	between Litang and Yajlang. Fabulous scree dweller with glaucous-blue rounded leaflets and flowers and large pale pink blue-purple tipped flowers. 2016 between Litang and Yajling
<i>Corydalis calcicola</i>	Jainxi Pass. Purple to slate-blue flowers inner petals with a blackish-purple apex. 2016 Dzho La
<i>[Corydalis chamdoensis</i>	Taller species with pale yellow flowers with arcuate recurved spur, narrowish spikes, Ganze Pass near seeps 2008]
<i>Corydalis conspersa</i>	Cho La Pass. Similar to <i>hamata</i> but differences in bracts and overall 'jizz', very leafy and tall. 2016 Dzho La
<i>Corydalis curviflora</i>	Balang Shan. Electric blue flowers, variable in stature.
<i>Corydalis dasyptera</i>	Lovely deep yellow species on the Dzo Dala and Chola Passes, dense inflorescence, divided glaucous leaves with acute tips to leaflets
<i>Corydalis davidii</i>	frequent in the Danba and Yajlang areas, also Litang. Tall species with winged stems, pinnate bracts, yellows flowers
<i>[Corydalis densispica</i>	Litang area. Yellow orange-tipped flowers, tall, flabellate bracts]

<i>Corydalis elata</i>	Wolong. Elegant 'leggy' blue-flowered <i>Corydalis</i> from the mid-altitude forests
[ <i>Corydalis eugeniae</i>	Cho La Pass. This is the pink/purple form with purple veins (the possibly distinct <i>Corydalis crassicalcarata</i> ), leaflets glaucous one side, green the other, pinnate, 3 pairs of leaflets. 2011 was frequent on high parts of the plateau]
<i>Corydalis flexuosa</i>	Dainty blue species in forest at Wolong. Ferny leaves
<i>Corydalis hamata</i>	Handsome dense flowered yellow species with blue mark at flower tip. Noted on the Dzo Dala and Litang area. Spreading mats in rocky seeps. Tuor Mountain in 2011. 2016 was on both Dzho La and Cho La
[ <i>Corydalis jiulongensis</i>	Between Litang and Daocheng. Yellow crested flowers, outer petals darker]
[ <i>Corydalis kokiana</i>	Very fine tall blue species on east side of Chola Pass]
[ <i>Corydalis lathyrophylla</i>	Cho La Pass. Lavender pink-tinged flowers. Pinnate leaves, two paired. Subspecies <i>dawuensis</i> ?
<i>Corydalis lhorongensis</i>	Black Primulas on the Zhedou Shan. Blue and amaranth flowers, purple tip to petals. Deeply divided bracts
[ <i>Corydalis lidenii</i>	?probably this species. Cho La Pass. Pale purple flowers, bracts rhomboid, small plant]
<i>Corydalis linarioides</i>	Fine yellow flowers with orange tips, variable narrow leaves. Luhuo and also common in the Zhedou Shan. Part of the <i>linarioides</i> group which includes similar but smaller <i>atuntsuensis</i> . 2016 scattered throughout
<i>Corydalis linstowiana</i>	between Danba and Yajiang. Blue flowers, fimbriate white [sepals, clearly stalked bracts ternatisect with sharply dentate lobed.]
<i>Corydalis madida</i>	Wolong. Chasmophyte. Reddish stems and creamy white flowers
<i>Corydalis melanochlora</i>	a stunning species on Balang Shan pass c4500m. Also Jainxi Pass. Dense sky blue to light blue flowers with finely cut leaves sprouting from scree
<i>Corydalis ophiocarpa</i>	Zhedou Shan
<i>Corydalis pachycentra</i>	Balang Shan. Brilliant indigo blue flwrs with upper petals tipped with white. 2016 noted on several of the higher passes
<i>Corydalis panda</i>	Balang Shan. Flowers blue, inner petals often white at tip. 2016 Jiajing Shan Pass
[ <i>Corydalis porphyrantha</i>	tallish dark purple flowered species. Between Litang and Yajling]
[ <i>Corydalis pseudoadoxa</i>	Zhedou Shan and Luo Gou Haii. Very dwarf, blue flowered. Zhedou Shan]
<i>Corydalis pseudocristata</i>	Balang Shan, mid-level meadows. Robust flowers spike with yellow orange-tipped flowers and obvious abaxial crest
[ <i>Corydalis pseudohamata</i>	Pass between Daocheng and Xiangcheng. This species is not recognized by the Chinese flora but appears distinctly different from <i>hamata</i> ?
[ <i>Corydalis rorida</i>	Cho La Pass. Bright blue flowers, alpine species, pinnatisect bracts]
<i>Corydalis scaberula</i>	Screes on the Dzo Dala, lovely pale yellow species with reddish dissect leaves with rounded lobes, on scree. One of the finest species seen
[ <i>Corydalis schaeereri</i>	Pretty pink species with long upright pointed spur at Wolong, Sichuan]

[*Corydalis trachycarpa*

between Litang and Yajlang. High screes. Another fantastic species with dark grey-green leaves the wide lobes broadly crenulate. Flowers pale pinkish, purple tipped]

[*Corydalis trifolia*

dark blue species with purplish-green tri-part leaves, Luo Gou Hai]

### **Loranthaceae**

[*Taxillus delavayi*

Jainxi Pass]

### **Brassicaceae**

[*Cardamine griffithii*

Wolong only]

*Cardamine macrophylla*

Very common and widespread

*Cardamine impatiens*

lower parts of the Balang Shan

[*Cardamine microzyga*

*pratensis*-like species deeper purplish-pink flowers on the first pass in the Tagong grasslands en route to Litang]

[*Dipomia iberidium*

Cho La, Litang, Zhedou Shan etc

*Draba involuclata*

Tight-growing species with typical bright yellow flowers, Balang Shan and Xinjun Pass, etc]

*Erysimum crocea*

Orangey-yellow wallflower near Rilong

*Megacarpa delavayi*

Tall lilac-pink flower with expanding inflorescence on high passes near Ganze, Litang and Kangding. 2016 frequent throughout

*Pegaeophyton scaberula*

White cress. 2011 on pass between Daocheng and Xiangcheng, possibly also Balang Shan. 2016 scattered on high passes

[*Solmslaubachia pulcherrima*

Chola Pass. 2011 on the Gela La Pass, in seed on Jainxi Pass]

*Tephrospernum verticillatum*

between Litang and Yajling

### **Violaceae**

*Viola biflora*

widespread, yellow flowers, rounded leaves

*Viola cameleo*

also yellow flowers, but pointed heart-shaped leaves. Scattered throughout

### **Crassulaceae**

*Rhodiola alcea*

2011 Zhedou Shan. Yellow.

*Rhodiola crenulata*

Cho La Pass. Red, like a large sedum

*Rhodiola dumulosa*

Rose and white species Xinjun Pass, Balang Shan etc

*Rhodiola fastigiata*

Balang Shan

*Rhodiola yunnanensis*

frequent in the Zhedou Shan and Luo Gou Hai

*Sedum filipes*

Danba area. Stunning red species

[*Sedum oreades*

Balang Shan, also Dzo Dala and Cho La. Small dense species with whitish-yellow flowers. 2011 Wolong]

### **Saxifragaceae**

[*Chrysosplenium camosum*

Cho La Pass]

*Chrysosplenium griffithii*

Pretty-leaved plant on Balang Shan and scattered elsewhere. Other species of *Chrysosplenium* seen too

[*Parnassia davidii*

staminodes with globose glands at apex. Flowers white, purple brown punctuate. Yalong River]

*Parnassia delavayi*

widespread. White 'normal-sized' flowers.

*Parnassia lanceolata*

green flowers, pointed petals. Small. Dzo Dala and Cho La Passes

*Parnassia pusilla*

diminutive species with greenish flowers. Scattered throughout.

Marshy areas

<i>Parnassia viridiflora</i>	green flowers, purplish-veined. Between Yalong River and Litang. 2016 near Ganze
<i>Rodgersia aesculifolia</i>	Common in moist forests at Wolong large pinnate-leaved herb with dense pink flowers on branched spikes
<i>Rodgersia pinnata</i>	pinnate leaves. Wolong area
<i>Saxifraga aurantiaca</i>	Small cushions with yellow flowers on Balang Shan, Dzo Dala and Cho La Passes
<i>Saxifraga brachypoda</i>	Balang Shan
<i>Saxifraga cernua</i>	Wolong. Bulbils not flowers!
<i>Saxifraga divaricata</i>	Balang Shan
[ <i>Saxifraga finitima</i>	??maybe this species. Dwarf cushion-forming species with yellow flowers. Balang Shan]
<i>Saxifraga fortunei</i>	Wolong and west of Danba and Kangding in lower valleys. White flowers with pronounced lower petal, moist shady places.
<i>Saxifraga lychnitis</i>	unusual tall yellow flowered sax. Zhedou Shan
<i>Saxifraga melanocentra</i>	Lovely white flowered species with darker red markings and black centre Balang Shan, Xinjun Shan, Zhedou Shan etc – the completely red form on the latter was particularly stunning!
<i>Saxifraga montanella</i>	yellow flowers. Balang Shan and Zhedou Shan area
<i>Saxifraga nanella</i>	very small yellow flowers. Balang Shan and Zhedou Shan area
<i>Saxifraga nigroglandifera</i>	doesn't look like a saxifrage! Cupped yellow flowers with whole plant covered in black glandular hairs. Balang Shan
<i>Saxifraga pseudohirculus</i>	Small orange flowers on slender tallish stems Balang Shan & Cho La Pass
<i>Saxifraga rubescens</i>	Like <i>fortunei</i> but with rusty undersides to the leaves. Yajling and Zhedou Shan
<i>Saxifraga sibirica</i>	white flowers, kidney-shaped leaves. Balang Shan, Litang and Jainxi areas
<i>Saxifraga stenophylla</i>	stoloniferous species of high gravels with large yellow flowers. Zhedou Shan
<i>Saxifraga unguiculata</i>	Balang Shan
<i>Tiarella polyphylla</i>	Pretty white flowered species at Wolong and other dense woodlands

### **Caryophyllaceae**

<i>Arenaria barbata</i>	large flowered alpine on Xinjun Pass, Ganze
<i>Arenaria kansuensis</i>	cushion forming species covered in small white flowers. Zhedou Shan, Dzo La and Cho La passes.
[ <i>Arenaria oreophila</i>	cushion forming. Balang Shan]
<i>Arenaria polytrichoides</i>	cushion forming species covered in small white flowers on Dzo Dala and Cho La Passes
<i>Arenaria smithiana</i>	Jainxi and Gela La Passes. 2016 Dzo La
[ <i>Cerastium fontanum</i>	Wolong]
<i>Dianthus superba</i>	Zhedou Shan. Dissect petals. 2016 Maniganga area
[ <i>Silene aprica</i>	Unusual dwarf species in wet areas on Xinjun Pass]
<i>Silene davidii</i>	Lovely mat forming species with pink flowers on Zhedou Shan and passes just west of there
<i>Silene himalayensis</i>	petals almost included in the inflated calyx. High passes in west of region. 2016 Cho La
[ <i>Silene hupehensis</i>	Luhuo area]
<i>Silene nigrescens</i>	petals almost included in the inflated calyx. Balang Shan

<i>Thylacospernum caespitosum</i>	tight mat-forming 'vegetable sheep' of high areas. Dzho La
<b>Rutaceae</b>	
<i>Xanthoxylum bungeanum</i>	armed small trees, leaves pinnate. Scattered
<b>Polygonaceae</b>	
[ <i>Koenigia forestii</i>	Gela La Pass. Not in China flora]
[ <i>Koenigia islandica</i>	various places on the plateau]
[ <i>Koenigia forestii</i>	not sure where John and Hilary saw this? Not in China flora]
<i>Oxyria digyna</i>	common roadside species in highlands
<i>Oxyria sinensis</i>	frequent in valleys off the main plateau. Grows much more upright than <i>digyna</i> .
<i>Persicaria capitata</i>	dwarf mat-forming species on roadsides in the valleys
[ <i>Polygonum albertii</i>	'Russian Vine' Climber at mid-altitudes]
[ <i>Polygonum macrophyllum</i>	10cm long linear lanceolate leaves. Widespread in plateau grasslands]
[ <i>Polygonum spherostachyum</i>	Short-cylindrical to globular white flowers, Balang Shan, etc, widespread]
<i>Polygonum viviparum</i>	common
<i>Rheum alexandrae</i>	damp areas in highlands e.g. Litang, near Yajling, Kangding etc
[ <i>Rheum delavayi</i>	dwarf species with red-veined leaves frequent on the plateau]
[ <i>Rheum likiangense</i>	large-ish species with big oval leaves. Gela La area]
<i>Rheum palmatum</i>	scattered along valley en route to Zhedou Shan, cultivated for Medicine. Spectacular plant! In 2016 we saw on the Balang Shan
<b>Urticaceae</b>	
<i>Boehmeria spp</i>	frequent in valleys
<i>Dobregesia longifolia</i>	below Kangding
<i>Dobregesia orientalis</i>	Luding to Ya'an. Wolong area
<b>Geraniaceae</b>	
<i>Geranium delavayi</i>	pale form. Balang Shan. Some regard this as <i>refractoides</i> but probably a colour form of this species
[ <i>Geranium lambertii</i>	blackish filaments and pale pink petals. Cho La Pass]
[ <i>Geranium moupinense</i>	widespread at mid altitudes, e.g. Wolong. Large flat pink flowers]
<i>Geranium pogananthum</i>	like <i>delavayi</i> but petals white to pink or purplish and longer petals. Wolong
<i>Geranium pratense</i>	Maniganga area
<i>Geranium pylzowianum</i>	Maniganga area
[ <i>Geranium sinense</i>	plants that looked much like this species were frequent in the Litang area]
<b>Onagraceae</b>	
<i>Chamaerion angustifolium</i>	scattered
[ <i>Epilobium sikkimense</i>	Janxi Pass. Wet gravelly areas.]
<b>Linaceae</b>	
<i>Linum perenne</i>	scattered
<b>Sapindaceae</b>	
<i>Koelreuteria bipinnata</i>	handsome roadside tree common in the Rilong and Danba areas

## **Apiaceae**

*Angelica apaensis*

*Heracleum candicans*

[*Pleurospermum amabile*

*Pleurospermum benthamii*

[*Pleurospermum biclor*

[*Pleurospermum astrantioideum*

[*Pleurospermum nanum*

[*Sanicula hacquetioides*

[*Tetrataenium nepalense*

[*Trachydium roylei*

Wolong

large umbellifer with fine-cut leaves for a *Heracleum*. Balang Shan and Rilong area

Pass between Daocheng and Xiangcheng. Fantastic large bracted species, the bracts strongly feathered with purple]

large 'colourful' umbel common at Wolong and Balang Shan

Litang and Zhedou Shan]

dwarf *Pleurospermum* tinged purple-red all over. Zhedou Shan]

Jainxi Pass. Very dwarfed.]

Like a *Hacquetia*! Middle slopes of the Balang Shan]

Large white umbels and broad-lobed pinnate leaves reminiscent of *Heracleum*. Tsosum Mountain]

stemless species. Between Litang and Yajling]

## **Araliaceae**

*Hedera nepalensis*

[*Panax bipinnatus*

*Panax pseudo-ginseng*

Kangding area and Luo Gou Hai

near Danba]

Lower slopes of the Balang Shan, and near Danba

## **Thymeleaceae**

*Daphne aurantiaca*

[*Daphne bholua/retusa*

[*Daphne tangutica*

*Stellera chamaejasme*

Between Ganze & Litang. Unusual species with narrow and small orange-yellow blooms and heather-like foliage!

presumably this species below Balang Shan and elsewhere?]

north of Ganze]

common in pastures, alpine turf in white and greenish cream forms mainly. A striking pink and orange form on Luo Gai Hai

## **Hypericaceae**

*Hypericum pseudohenryi*

common on roadsides

## **Actinidiaceae**

*Actinidia kolomikta*

climber in shrubberies in mid-altitudes e.g. Wolong

## **Euphorbiaceae**

*Euphorbia bulleyana*

*Euphorbia helioscopa*

[*Euphorbia nematocypha*

[*Euphorbia pekinensis*

Balang Shan

familiar weed

locally common]

scattered with orangey-green bracts]

## **Hydrangeaceae**

[*Deutzia calycosa*

[*Deutzia glomeruliflora*

*Deutzia longifolia*

*Hydrangea aspera*

*Hydrangea heteromalla*

[*Philadelphus purpurascens*

*Philadelphus subcanus*

pink-flowered species at Wolong and west of Danba]

mid-elevations e.g. Wolong]

long-leaved! Common in the Wolong, Rilong and Danba areas

Wolong and Rilong. A large white form and smaller pink form are both subspecies of this widespread species

west of Danba where some fine plants, a white lacecap

distinctive smaller flowered species with dark reddish purple

pedicels and calyces, leaves hairy on ribs beneath, north of Luhuo]

scattered. The commonest Mock Orange, leaves with short adpressed hairs

## **Rosaceae**

<i>Aruncus sylvestris</i>	Wolong
<i>Cotoneaster microphyllus</i>	widespread
<i>Duchesnea indica</i>	common at Wolong. Yellow-flowered strawberry
<i>Fragaria orientalis</i>	very common on banks in the Wolong area
<i>Potentilla anserina</i>	scattered
<i>Potentilla biflora</i>	Cho La!
[ <i>Potentilla bifurca</i>	near Ganze. Pinnate leaves]
[ <i>Potentilla coriandrifolia</i>	alpine turf ]
[ <i>Potentilla eriocarpa</i>	dense cushion forming shrub on Dzo Dala. The very different 'lax' subspecies <i>tsarongensis</i> on Cho La Pass and Zhedou Shan]
<i>Potentilla fruticosa</i>	widespread yellow flowered shrub
<i>Potentilla glabra</i>	widespread shrubby species with white flowers
[ <i>Potentilla leuconota</i>	denser leaves than <i>coriandrifolia</i> Zhedou Shan]
[ <i>Potentilla microphylla</i>	Gela La Pass]
<i>Potentilla stenophylla</i>	pinnate toothed leaves. Litang westwards
[ <i>Princepia utilis</i>	spiny arching branched shrub with bluish oval berries on Yulong]
<i>Prunus serrula</i>	Wolong
[ <i>Rosa moyesii</i>	Zhedou Shan, Kangding etc. Deep red flowers]
<i>Rosa multiflora</i>	handsome dense flowered species, Wolong area. Also noted between Kangding and Ya'an
<i>Rosa omeiensis</i>	impressive thorny stems. Lower slopes of Balang Shan – not in flower
<i>Rosa prattii</i>	Zhedou Shan
<i>Rosa sericea</i>	upland species with white to cream flowers
<i>Rosa sweginzowii</i>	fine deep pink-red species. Lower Balang Shan and Zhedou Pass
[ <i>Rosa willmottiae</i>	light pink rose. Rilonguan]
<i>Rubus biflorus</i>	Wolong
<i>Rubus niyalamensis</i>	Balang Shan. Dwarf white alpine species.
<i>Rubus thibetanus</i>	frequent Wolong
<i>Sanguisorba filiformis</i>	scattered in wet areas. Tiny flowerheads. Between Danba and Luhou
<i>Sibbaldia purpurea</i>	between Rilong and Danba and Zhedou Shan
<i>Sorbaria arborea</i>	foamy cream flower masses on shrubs with large pinnate leaves. Wolong. Also noted Danba, Kangding etc
<i>Spenceria ramalana</i>	widespread spicate ' <i>potentilla</i> '. Covered some hillsides near Ganze and Litang
<i>Spiraea bella</i>	Wolong
<i>Spiraea schneideriana</i>	Wolong area
<i>Spiraea myrtilloides</i>	between Litang and Yajling. Also near Rilong

## **Oxalidaceae**

<i>Oxalis corniculata</i>	weed of roadsides. Yellow flowers. Near Rilong
<i>Oxalis griffithii</i>	only native Oxalis. White with purple centre. Lower Dengsheng Guo woodlands, Wolong

## **Fabaceae**

<i>Albizia julibrissum</i>	roadside tree at lower altitudes
<i>Albizia mollis</i>	Wolong. Also between Kangding and Ya'an
[ <i>Astragalus acaulis</i>	Acaulescent. Pale sulphur-yellow flowers in a bunch at the base of the leaves. Frequent on the plateau]



[ <i>Astragalus alpinus</i>	something that looked very like this species was frequent in the plateau grasslands but according to the China Flora this species only occurs in Xinkiang within China?]
[ <i>Astragalus rigidulus</i>	something very like this species with red-purple flowers on the Zhedou Shan]
[ <i>Astragalus tongolensis</i>	shrubby species with creamy flowers near Rilong]
<i>Astragalus yunnanensis</i>	yellow and white flowers with black hairs on calyx, alpine turf, many passes
[ <i>Bauhinia</i> sp	a white flowered creeper seen near Dege]
[ <i>Bauhinia brachycarpa</i>	[A dwarfed shrub at altitude, small tree lower down]
[ <i>Caragana jubata</i>	spiny highland shrub with pink flowers, a similar fine species on Ganze Pass. Gela La Pass]
[ <i>Caragana leucophloea</i>	yellow flowers with red lines spiny Rilong, Danba & Luhuo areas]
<i>Caragana versicolor</i>	pink flowered spiny shrub on Zhedou Shan. 2016 Rilong area
[ <i>Cicer arietinum</i>	naturalized. Wolong]
<i>Desmodium elegans</i>	scattered
<i>Hedysarum pseudoastragalus</i>	Long racemes of purple flowers, leaves with 11-17 pairs of leaflets. Frequent in the plateau grasslands
<i>Indigofera amblyantha</i>	scattered
<i>Indigofera balfouriana</i>	pink shrub. Many mid-level areas
[ <i>Indigofera pendula</i>	elegant long racemes. Between Kangding and Ya'an]
<i>Lotus corniculatus</i>	widespread
[ <i>Medicago sativa</i>	naturalized. Wolong]
<i>Melilotus alba</i>	White Melilot. Wolong
<i>Melilotus officinalis</i>	Wolong
<i>Piptanthus nepalensis</i>	Tagong Grasslands and other high areas, scattered. Yellow flowered shrub with large trifoliate leaves. 2016 Between Dege and Ganze
<i>Sophora</i> sp	rather like <i>alopecuroides</i> .
<i>Thermopsis barbata</i>	black pea. Luhuo and Ganze grasslands
[ <i>Thermopsis smithiana</i>	in seed between Litang and Yajling. Yellow flowers. Gela La Pass]
<i>Tibetia himalaica</i>	Small purple-blue flowers, leaves white-hairy underneath. Plateau and also Zhedou Shan. 2016 on Dzho La pass
<i>Tibetia tongolensis</i>	widespread little legume with purple flowers on long stems. Cream flowered form also seen.
<i>Tibetia yunnanensis</i>	Small, white to cream flowers. Frequent on the plateau from Litang eastwards
[ <i>Trifolium repens</i>	Wolong]
<i>Vicia nummularia</i>	roadsides, a typical vetch
<i>Vicia unijuga</i>	<i>Lathyrus laxiflora</i> look-a-like. Zhedou Shan and Lou Gai Hai. 2016 Rilong area
<b>Cactaceae</b>	
<i>Opuntia monacantha</i>	lowlands around Ya'an
<b>Anacardiaceae</b>	
<i>Zanthophyllum bungeanum</i>	Sichuan Pepper. Widely cultivated
<b>Celastraceae</b>	
[ <i>Euonymus frigidus</i>	Wolong]

## **Aceraceae**

<i>Acer cappadocicum</i>	Kangding area]
<i>Acer caudatum</i>	Kangding area. 2016 Wolong
<i>Acer davidii</i>	undivided leaves. Wolong area
<i>Acer forrestii</i>	Wolong

## **Aquifoliaceae**

<i>Ilex pernyi</i>	triangular-leaved holly. Wolong
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## **Ericaceae**

It should be noted that many of the rhododendron recorded were from the earlier season 2007 recce, as such there will be a limited number in flower during the tour

<i>Cassiope selaginoides</i>	shrublet with small white bell flowers. Balang Shan and Luo Gou Hai
<i>Lyonia villosa</i>	Zhedou Shan
[ <i>Rhododendron augustinii</i>	Wolong ]
[ <i>Rhododendron balangense</i>	common on Balang Shan]
[ <i>Rhododendron bureavii</i>	probably this species growing along river banks below Balang Shan]
[ <i>Rhododendron chryseum</i>	pale yellow dwarf species, widespread e.g. Kangding]
[ <i>Rhododendron decorum</i>	very common in mid altitude woodlands, pines, etc – pink and white forms]
<i>Rhododendron galactinum</i>	Dengsheng Guo on lower Balang Shan where flowering atop a rock by our picnic site
<i>Rhododendron nivale boreale</i>	very small shrub with pale white-pink flowers. Zhedou Shan. 2016 on the Balang Shan
<i>Rhododendron orbiculare</i>	Luo Gou Hai. Beautiful red buds open to white flowers
<i>Rhododendron phaeochrysum</i>	common and widespread high altitude species in variety of colours from white to pink – still a few in flower on the Balang Shan and Jiajing Shan passes
<i>Rhododendron primulaeflorum</i>	small flowered species in white or pink, scattered. Still a few in flower on the Balang Shan and Jiajing Shan passes
[ <i>Rhododendron racemosum</i>	common and widespread]
[ <i>Rhododendron rubiginosum</i>	widespread bright to pale pink common on drier hillsides ]
[ <i>Rhododendron rufescens</i>	small shrub with pale flowers. Zhedou Shan]
[ <i>Rhododendron rupicola</i>	more delicate dwarf shrub on Baima]
<i>Rhododendron russatum</i>	a small lilac species, upland moors. Balang Shan
[ <i>Rhododendron trichostomum</i>	small shrub with pale flowers. Zhedou Shan. Frequent on the high plateau]
[ <i>Vaccinium fragile</i>	widespread]

## **Pyrolaceae**

<i>Pyrola calliantha</i>	Wolong
[ <i>Pyrola sororia</i>	Wolong]

## **Diapensiaceae**

[ <i>Diapensia purpurea</i>	Previously found on passes south of Tagong grasslands, so it may occur at some point]
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## **Monotropaceae**

[ <i>Monotropa hypopitys</i>	lower slopes of the Balang Shan and between Litang and Yajling]
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## Primulaceae

- [*Androsace bisulca* var *biscula*. Dense cushions with umbels of bright yellow flowers. Some fabulous cushions on Tuor Mountain and the sand flats there-on]  
Zhedou Shan
- Androsace brachystegia*  
[*Androsace delavayi* very dense cushions with white pink-tinged flowers tight to the leaves. 4800m on the Dzo Dala]
- [*Androsace erecta* common upright annual species with many wiry stems and small whitish pink flowers]
- Androsace henryi henryi*  
[*Androsace henryi simulans* very common at Wolong. White drumsticks. Mostly over in 2016 like *henryi* but bracts obovate and only to 5mm. Dege Gorge]  
*Androsace integra* strange species with multiple umbels. Between Ganze and Luhou  
*Androsace limprichtii* laxly caespitose, leaves trimorphic, scapes to 20cm, umbels ten flowered or more the flowers white or pink, quite large. Luhou and common in Zhedou Shan area. 2016 we saw it on the Jainxhi Pass and Litang area
- [*Androsace mairei* ?maybe this species. Small pink flowered umbels, dimorphic leaves. Ganze area and Cho La Pass. Zhedou Shan]
- [*Androsace minor* laxly caespitose species forming patches with red-eyed pink flowers on the Zhedou Shan]
- Androsace rigida* laxly caespitose species with good patches at Luo Gou Haii in various shades of white to deep pink, also Zhedou Shan
- Androsace septentrionalis* tall species with umbels of small white flowers. Scattered  
*Androsace spinulifera* common and widespread. Tall drumsticks of pale pink to deep purplish-pink. The widespread and common pink species in the plateau grasslands and mountains
- [*Androsace stenophylla* tall (to 20cm) umbels, pink flowers with white eye. Dege Gorge]  
[*Androsace tapete* compact cushions with small pink flowers. Dzo Dala]  
[*Androsace yargonensis* dense cushions with 5-6 flowered umbels of small white or pink blooms. Scapes with long white hairs. Zhedou Shan]
- Androsace zambalensis* dense cushion forming species with white flowers with yellow or red eyes. Zhedou Shan and Luo Gou Haii.
- Omphalogramma vincaeflora* fantastic deep purple species with large flowers. Many in alpine turf on Balang Shan.
- Primula amethystina* umbels of slightly hanging purple 'frilly' flowers. Balang Shan, Jiajing Shan, and the Zhedou Shan
- [*Primula bathangensis* unusual species with yellow flowers in a raceme and greatly inflated calyxes. On slopes above Danba]
- [*Primula bellidifolia* soft blue species like *deflexa* on granitic rocks to west of Cho La pass. Probably this species on the Zhedou Shan]
- Primula blinii* small species growing on rocky outcrops with bluish-rose flowers. Passes above Yajling, also Luo Hou Hai. The 'florida' form was growing on Jiajing Shan.
- [*Primula cernua* pretty blue lilac narrow-flowered species at Luo Gou Haii]  
[*Primula chionantha* purple-violet flowers. Balang Shan. Gela La Pass]  
*Primula cockburniana* stunning orange species, fine stemmed, common in Danba and Luhou areas and also below Luo Gou Haii
- Primula conspersa* Various places in Luhou and Ganze areas  
*Primula crocifolia* Morag found this rare plant just below the Cho La pass  
*Primula deflexa* blue-purple long tubed capitate species. Rilong and Danba area. Zhedou Shan

<i>Primula dryadifolia</i>	lovely species very common on Balang Shan and Dzho La, wide pink bells, leaves leathery, almost orbicular and crenulate.
<i>Primula euprepes</i>	wonderful near-black species on Zhedou Pass – three plants seen in flower in 2010. Just the one of the 15 plants seen in 2016 in flower!
<i>Primula flava</i> [ <i>Primula fasciculata</i> ]	a fine colony near the looping road between Ganze and Litang tiny efarinose species of peaty areas, bright pink to rose flowers. Tsosum Mountain]
<i>Primula gemmifera</i> [ <i>Primula gracilentia</i> [ <i>Primula heuceriifolia</i> <i>Primula hoii</i>	Balang Shan, pink with white eye. head of many lilac-pink flowers. Kangding area] possibly this species at Wolong]
<i>Primula humilis</i>	tall pale pink-lilac species in grasslands west of Luhou and also lower parts of the Dzho La
<i>Primula involucrata</i>	Kurt found one plant of this intense rose-pink flowered species on Luo Gou Hai
<i>Primula limbata</i>	common in the Ganze area and between Luhou and there. Marshy ground. Flowers various shades of pink to nearly white or purple flowers blue-purple, calyx strongly farinose inside. On cliffs and slopes on Dzo Dala. In 2016 noted between Litang and Yajling
[ <i>Primula longipetala</i>	a recently named species in abundance on Balang Shan over 4000m]
<i>Primula melanops</i>	very beautiful plant with blue pink or mlilac tinged flowers with a dark centre in a many flowered inflorescence. Balang Shan
[ <i>Primula moupinensis</i> [ <i>Primula muscaroides</i> <i>Primula nutans</i> <i>Primula obconica</i>	primrose-like pale lilac flowers and serrated leaves. Wolong] unusual narrow-tubed purple species below Luo Gou Haii] widespread pink flowered species of the plateau grasslands. umbels of pink to lavender-rose flowers. Between Danba and Luhou
<i>Primula orbicularis</i>	tall umbels, yellow flowers, long narrow leaves. Damp meadows on the way up the Balang Shan where just about over
[ <i>Primula oreodoxa</i> <i>Primula palmata</i> <i>Primula polyneura</i>	In leaf in the ravines around Wolong. A very local species] in woods west of the Balang Shan. Leaves like a geranium! Balang Shan and around Danba and Luhuo. Also has leaves like a geranium, but much longer than broad. Flowers pale rose.
<i>Primula rhodocroa</i>	this or something very similar in the alpine tundra north of Litang, a tiny pink species. In marshy ground between Danba and Luhou
<i>Primula rupicola</i> <i>Primula russeola</i>	Luo Gou Hai and also Zhedou Shan a stunning species with large violet violets. Cliff bases Luo Hou Gai
[ <i>Primula scopulorum</i> <i>Primula secundiflora</i>	rose-purple flowers. Yajlang area] common and widespread with umbels of rose-purple flowers beautifully set off by white farinose calyxes. In wet flushes usually with <i>sikkimensis</i> .
<i>Primula sikkimensis</i> <i>Primula soulei</i> [ <i>Primula stenocalyx</i>	very common pale yellow species of marshy ground rather similar to <i>blinii</i> . Pass between Litang and Yajling neat umbels of bluish-pink-lavender flowers on Balang Shan turf amongst rocks. Tsosum Mountain]
[ <i>Primula szechuanica</i>	possibly this tall species with reflexed pale yellow flowers in whorls, Luo Gou Haii]

<i>Primula tangutica</i>	amazing spidery reddish-brown flowers, Pass north of Ganze, also Dzo Dala, Cho La Pass and Litang area. Also Gela La Pass and between Daocheng and Litang. 2016 noted only from Dzho La, pass north of Ganze and Luo Gou Hai
<i>Primula violacea</i>	Luo Gou Hai
<i>Primula watsonii</i>	deep indigo-purple flowers. Near Luhou
<i>Primula woodwardia</i>	Balang Shan
[ <i>Primula zambalensis</i>	Something close to this in similar habitat on which it occurs in Yunnan on the pass south of Ganze]

### **Cornaceae**

<i>Cornus capitata</i>	between 1000 and 2000m, superb flowering shrub/tree with wide creamy bracts.
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### **Tamaricaceae**

<i>Myricaria laxiflora</i>	various of the larger rivers
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### **Loganiaceae**

[ <i>Buddleja crispa</i>	'crisped' ovate leaves. Between Kangding and Ya'an]
<i>Buddleja davidii</i>	mid-altitudes in east

### **Plumbaginaceae**

<i>Ceratostigma minus</i>	pretty bright blue flowers. On banks along the road between Kangding and Luding
<i>Ceratostigma willmottianum</i>	more shrubby than the previous species. Yilong River. 2016 near Rilong

### **Oleaceae**

[ <i>Jasminum polyanthum</i>	roadsides between Ganze and Litang. Near Danba]
[ <i>Osmanthus delavayi</i>	widespread in shrubberies]
[ <i>Syringa yunnanensis</i>	Wolong. White flowers. Kangding area]

### **Asclepiaceae**

<i>Ceropegia mairei</i>	weird, hairy flowers on twining stems near Danba at <i>Eremurus</i> site between Ganze and Litang
<i>Cynanchum corymbosum</i>	another yellow species. 2011 between Kangding and Ya'an
<i>Cynanchum inamoenum</i>	upright yellow flowered species. Near Maniganga
<i>Vincetoxicum forrestii</i>	scattered, whorls of small green flowers but seen only in seed.
[ <i>Vincetoxicum hirundinaria</i>	Yilong River]

### **Caprifoliaceae**

<i>Leycesteria formosa</i>	scattered in shrubberies and roadsides
<i>Lonicera hispida/chaetocarpa</i>	Zhedou Shan
[ <i>Lonicera litangensis</i>	twin-flowered species. Wolong]
<i>Lonicera perulata</i>	Wolong
<i>Lonicera rupicola</i>	lilac-flowered rock dweller. Balang Shan. 2016 Dzho La and Cho La
[ <i>Lonicera trichosantha</i>	axillary aired erect cream flowers.]
[ <i>Lonicera tibetica</i>	rather sparse pink flowers. Scattered]
<i>Sambucus adnata</i>	common herbaceous elder. Wolong area.
[ <i>Sambucus ebulus</i>	common herbaceous elder]
<i>Triosetum himalayense</i>	Balang Shan

<i>Viburnum</i> spp.	species seen but not identified – same in 2016!
<b>Adoxaceae</b>	
<i>Adoxa moschatellina</i>	Dzo Dala. 2016 Dengsheng Guo, lower Balang Shan
<b>Dipsacaceae</b>	
<i>Morina alba</i>	White flowers. Balang Shan
<i>Morina nepalensis</i>	Pink flowers. Balang Shan
[ <i>Ptercephalus</i> sp	Rilong area]
<b>Cannabinaceae</b>	
<i>Cannabis sativa</i>	occasional roadside weed
<b>Solanaceae</b>	
[ <i>Anisodus carniolicoides</i>	yellow-green flowers. Between Litang and Daocheng]
<i>Anisodus tanguticus</i>	scattered, often as a roadside weed. Strange large greenish or purplish flowers. 2016 Yazi Cum village in flower, elsewhere in fruit.
[ <i>Datura stramonium</i>	Rilong area]
<i>Hyoscyamus niger</i>	villages between Ganze and Maniganga
<b>Asteraceae</b>	
<i>Anaphalis margaritum</i>	near Ganze
[ <i>Anaphalis nepalensis</i>	widespread]
[ <i>Aster diplostaphioides</i>	?maybe this species along the Yilong River]
[ <i>Aster farreri</i>	distinctly clump forming species seen near Litang and probably this on Xinjun Pass.]
[ <i>Aster himalaicus</i>	fine wide flowered species with large mauve rayed flowers on short stems, Haizi, Zhedou Shan. Another wonderful wide, fine-rayed species en route to Maniganga.]
[ <i>Aster oreophilus</i>	dense-rayed branched species en route to Luhou]
<i>Aster soulei</i>	lovely variable mauve daisy, widespread
[ <i>Aster yunnanense</i>	Tall branched species en route to Maniganga, scattered elsewhere]
<i>Cremanthodium angustifolium</i>	Luhuo area, marshy places/pools on grasslands. 2016 Dzho La
<i>Cremanthodium brunneopilosum</i>	Maniganga area
<i>Cremanthodium campanulatum</i>	Dzo Dala. Widespread on the plateau
<i>Cremanthodium decaisnei</i>	wonderful displays near top of Dzho La, pendant heads with spidery yellow petals.
[ <i>Cremanthodium reniforme</i>	on sand flats on Tuor Mountain]
<i>Cremanthodium rhodocephalum</i>	not <i>reniforme</i> ! Yellow daisy flowers and reddish-bronze crenulated leaves, Cho La Pass
<i>Cremanthodium smithianum</i>	another species with <i>reniforme</i> leaves. Probably this species on Dzho La too!
<i>Dolomiaea forrestii</i>	extraordinary squat thistle with almost black flowers. Noted near Danba and Litang. 2016 Balang Shan
[ <i>Doronicum altaicum</i>	Dege area]
<i>Doronicum briquetii</i>	Cho La and Zhedou Shan
<i>Leontopodium caespitosum</i>	widespread from Balang Shan to Maniganga
<i>Leontopodium calocephalum</i>	frequent Maniganga to Litang and Zhedou Shan
[ <i>Leontopodium haplophyllodes</i>	scattered in meadows, long spidery rays. On the plateau grasslands]
[ <i>Leontopodium jacotianum</i>	dwarf species on Chola Shan, thick triangular rays. Gela La Pass]

[ <i>Leontopodium soulei</i> <i>Leontopodium strachyni</i> <i>Leontopodium</i> sp <i>Ligularia cymbulifera</i> .	Ganze pass, etc, small with short broad rays] Litang area A dwarf shrubby species (!) seen on the Balang Shan a fine large glaucous-leaved species, wide spread corymbose infl. Between Litang & Yajling. At mid-altitudes on the Balang Shan large species with reniforme or cordate leaves. Compound corymbs with numerous capitula with yellow flowers. Zhedou Shan area. Luo Gou Hai
[ <i>Ligularia duciformis</i>	damp roadsides, spicate inflorescence. Widespread common in marshy areas, very large orbicular leaves. Some just in flower. Scattered throughout
<i>Ligularia lankongensis</i> <i>Ligularia nelumbifolium</i>	Zhedeo Shan area
<i>Ligularia pleurocaulis</i> <i>Ligularia przewalskii</i>	handsome cut-leaved species with tall spikes of yellow flowers, Rilong, Balang Shan and Zhedou Shan areas
<i>Ligularia purdomii</i>	without radiant ligules. Large undulate circular leaves. Frequent in streams etc on the plateau grasslands
[ <i>Microglossa albescens</i> <i>Pyrethrum tatsiensense</i> <i>Saussurea obovallata</i>	Frequent shrub aster e.g. Rilong, Zhedou Shan (Danba)] common orange daisy on grasslands around Ganze] tall herbaceous species with flowers wrapped in ensheathing bracts on Chola Shan. Reasonably frequent on plateau grasslands and high passes.
<i>Saussurea graminea</i>	undistinguished purplish flowered species. Dege area and also Zhedou Shan. Tuor Mountain. 2016 Dzhola
<i>Saussurea hieracioides</i> <i>Saussurea medusa</i>	Litang passes and Luo Gou Hai, also Zhedou Shan fabulous high-altitude 'dalek' with entire leaflets covered in hairs. On gravelly screes at 4800m on the Dzo Dala and lower at the foot of a scree slope on the Zhedou Shan. On the pass between Daocheng and Xiengcheng. In 2016 on the Dzhola
<i>Saussurea leucoma</i>	fabulous high-altitude 'dalek' covered in dense lanate hairs so that almost the whole plant is obscured. Leaflets pinnately lobed. Forms an almost cactus-like columnar plant about 15cm tall. Steep screes at 5000m above the Cho La Pass. In 2016 actually found a little below the pass – so at 4900m!
[ <i>Saussurea quercifolia</i>	another superb high alpine <i>Saussurea</i> this one with more open leaf rosettes (so not so columnar as <i>leucoma</i> and <i>medusa</i> ) and these covered in tomentose indumentum on upper-side. On gravelly screes at 4800m on the Dzo Dala. In 2016 on Cho La
[ <i>Saussurea</i> cf <i>wellbyi</i>	Fantastic purple-flowered squat species like a many-armed starfish! Found at several sites on high passes in the Litang area]
<i>Soroiseris gillii</i>	wonderful species with broad domes of yellow flowers and rosettes of undulate leaves at 4800m on Dzo Dala where some in flower. In bud on the Balang Shan and in flower on the pass between Daocheng and Xiengcheng. 2016 in flower on the Cho La. Zhedou Shan]
[ <i>Soroiseris hirsuta</i> <i>Soroiseris hookeriana</i> ssp <i>erysimoides</i> <i>Soroiseris rosularis</i>	Yellow flowered species, with extending stem. 2016 Dzhola etc screes on Cho La Pass.

### **Convolvulaceae**

*Cuscuta europaea*

Dege area. 2016 – *Cuscutas* seen not sure which species

### **Polemoniaceae**

*Polemonium chinense*

in flower between Ganze and Maniganga

## **Gentianaceae**

A confusing number of small flowered annual species were seen and not unidentified

<i>Comastoma cyananthiflorum</i>	blue. 2016 Zhedou Shan and Luo Gou Hai
<i>Comastoma falcatum</i>	Cho La and Zhedou Shan
<i>Comastoma pulmonarium</i>	pale blue upright gentian east of Luhou. 2016 en route to Luhou
<i>Gentiana asparagoides</i>	tiny species common in bogsd on the plateau
[ <i>Gentiana asterocalyx</i>	tiny annual species with dark blue flowers]
<i>Gentiana choananthera</i>	another small species noted on Balang Shan
<i>Gentiana crassicaulis</i>	pasdes in the Litang area
[ <i>Gentiana dolichocalyx</i>	flowers pale blue with yellowish tube and outside with blue streaks. Luo Gou Hai]
<i>Gentiana leucomelaina</i>	widespread Cho La and passes bertween there and Zhedou Shan
[ <i>Gentiana nanobella</i>	probably this species between Dawu and Danba, variable blues]
<i>Gentiana nubigena</i>	Zhedou Shan
<i>Gentiana primuliflora</i>	corolla violet, open. Common along roadsides around Wolong
[ <i>Gentiana pseudosquarrosa</i>	tiny dark blue species noted in Danba area]
[ <i>Gentiana pubigerum</i>	variable little gentian growing on roadsides and alpine turf on Balang Shan]
[ <i>Gentiana purdomii</i>	large tubular cream species with blue stripes on passes south of Litang. 2016 noted Cho La Pass
[ <i>Gentiana rubicunda</i>	deep magenta dwarf species on Cho La Pass and south of Litang]
<i>Gentiana tetraphylla</i>	pale flowers with dark blue stripes and yellow base. Zhedou Shan
<i>Gentiana trichotoma</i>	Luo Gou Hai
[ <i>Gentianopsis barbata</i>	cream and blue striped species just outside Maniganga]
[ <i>Gentianopsis grandis</i>	deep blue on tall wiry stems. Scattered throughout]
<i>Gentianopsis paludosa</i>	blue flowers, all calyx lobes roughly equal. Between Ganze and Maniganga. In 2016 we saw <i>Gentianopsis</i> in a number of localities but didn't allocate them to species!
<i>Halenia elliptica</i>	peculiar claw-like blue flowers, Ganze area. Tsosum Mountain. 2016 many places west of Ganze

## **Boraginaceae**

<i>Asperugo procumbens</i>	Yazi Cum!
<i>Cynoglossum amabile</i>	common along roadsides
<i>Chionocharis hookeri</i>	sensational alpine with fine cushions on the Cho La Pass at over 4700m – particularly spectacular mounds on the west side of the pass. Also Gela La
[ <i>Eritrichium</i> sp	Gela La Pass]
<i>Lasiocaryum trichocarpum</i>	Zhedou Shan and Lou Gou Hai areas
<i>Onosma maaikangense</i>	blue-flowered borage between Luhou and Dawu. 2016 near Rilong
[ <i>Trigonotis laxa</i>	Gela La Pass]
<i>Trigonotis</i> sp	the common brilliant blue alkanet that was locally abundant were this genus, but there are many species!

## **Scrophulariaceae**

At least 60 species of *Pedicularis* were seen (there are at least 250spp in Sichuan) and they proved a challenge!

<i>Euphrasia pectinata</i>	eyebright. Jainzhi Pass. 2016 Maniganga area
[ <i>Euphrasia regelii</i>	very small eyebright. Wet ground between Danba and Luhuo]
<i>Lagotis integra</i>	dense spikes of white veronica-like flowers. Tundra between Litang and Yajling. Also near Kangding, Zhedou Shan



<i>[Lagotis yunnanensis</i>	between Daocheng and Litang]
<i>Lancea tibetica</i>	widespread, dwarf, purple flowered
<i>Mimulus szechuanensis</i>	typical little monkey flower. Above Wolong
<i>[Pedicularis alopecurus</i>	elegant pale yellow flowers with purple-tipped galea. Luhou area]
<i>Pedicularis anas var tibetica</i>	stunning species with purple flowers and a pale creamy lower lip and dark purple-red galea. Between Ganze & Maniganga. 2016 Zhedou Shan
<i>Pedicularis anas var anas</i>	deep pink with black 'cat's whiskers' markings, tall, flowers in whorls. Grasslands west of Ganze
<i>Pedicularis artselaeri</i>	single long-tubed pink flowers. Between Litang and Daocheng. 2016 Danba to Luhou
<i>[Pedicularis batangensis</i>	pretty whitish-pink with deep pink beak, long-tubed, open slopes south of Luhou]
<i>[Pedicularis bella</i>	?something similar to this on the way up the Balang Shan – not this species though]
<i>Pedicularis bietii</i>	yellow galea, pink tip, with dark spots. Luo Gou Hai
<i>[Pedicularis brachycrania</i>	purple flowers. Wet areas on the high pass between Daocheng and Ziangcheng]
<i>Pedicularis cernua</i>	very small. Red flowers with galea erect basally, with a central marginal protuberance on each side, apex truncate, 1-toothed on each side. Luo Gou Hai
<i>[Pedicularis chenocephala</i>	dwarf alpine, leaves whorled or opp, flowers rose with straight tube, beak longer, slightly curved and goosehead shaped and golden or purplish. Ganze area and Zhedou Shan]
<i>[Pedicularis cheilanthifolia</i>	striking pink lousewort on high gravels and screes. Between Litang and Daocheng, also Tsosum Mountain]
<i>Pedicularis comptonifolia</i>	between Dege and Ganze
<i>[Pedicularis confertiflora</i>	pink flowers with purple galea. Calyx lobes leaf like. Very short alpine species. Dzo Dala]
<i>Pedicularis cranolopha</i>	Zhedou Shan
<i>Pedicularis cristatella</i>	near Rilong
<i>Pedicularis croizitiana</i>	trailing long-tubed yellow-flowered species that resembles this, but has a 5-lobed calyx not a 3-lobed calyx! Between Dege and Ganze
<i>Pedicularis cyathophylla</i>	spectacular tall species with long tubed pink flower twisted through 90°. Almost black galea also bent 90° and connate petioles. Between Litang and Yajling. Frequent on the plateau and in Kangding area. 2016 near Rilong
<i>[Pedicularis cyathophylloides</i>	leaves in whorls of 3-4, bases connate. Flowers pink, large, galea apically expanded. Between Ganze and Litang]
<i>Pedicularis davidii</i>	lovely bicolored pink and white species with twisted beak e.g. Rilong, Balang Shan oblong leaves very coarsely crenulated.
<i>Pedicularis davidii var pentadon</i>	deep pink with twisted beak, common Danba & Luhou areas., Balang Shan and Rilong
<i>Pedicularis decorissima</i>	one of the most beautiful species seen, long tubed with purple pink galea and beak – Zhedou Shan area. 2016 seen on the Pass north of Ganze
<i>Pedicularis deqinensis</i>	pass north of Ganze
<i>Pedicularis densispica</i>	leaves opposite or whorls of 3-4. Medium sized species with large pink flowers the beak a striking golden colour. Dzo Dala. 2016 near Rilong

<i>[Pedicularis dichotoma</i>	tall elegant species with inflated calyces and pink flowers with hooked purplish galea, Cho La Pass]
<i>[Pedicularis dielsiana</i>	branched species, leaves in whorls of 3. Flowers yellow. Luhou area. Kangding area]
<i>[Pedicularis diffusa</i>	elegant spikes of rose-colloured flowers. Leaves in whorls of 4. Between Litang and Daocheng]
<i>Pedicularis duclouxii</i>	between Ganze and Maniganga – yellow flower with a red galea.
<i>Pedicularis dunniiana</i>	impressive very tall yellow flowered species near Wolong and Luo Gou Hai
<i>[Pedicularis excelsa</i>	impressively tall species – 1m or more! White flowers with purple beak. Ganze area]
<i>[Pedicularis flaccida</i>	glabrous, many weak branches, corolla strongly bent from base. Zhedou Shan. Probably this species in the moors between Litang and Daocheng, seen in both directions]
<i>Pedicularis gracilituba</i>	long-tubed pink species common on tundra in Zhedou Shan and Luo Gou Hai
<i>Pedicularis hirtella</i>	?maybe this species. pale pink lip, dark purple falcate galea. Zhedou Shan
<i>[Pedicularis ingens</i>	very tall with pale yellow flowers and distinctive auriculate double-dentate leaves. Luhou area]
<i>Pedicularis integrifolia</i>	dwarf alpine species with large pink flowers with S-shaped slender beak. Luhou area. 2016 Zhedou Shan and Kangding area
<i>Pedicularis kansuensis</i>	branched basally, pink flowers, 4 lines of hairs on stem, leaves in whorls of 4. Zhedou Shan. Widespread on the plateau. The plants we saw on the Balang Shan that resembled this species may have been <i>Pedicularis xiangchengensis</i> or form <i>albiflora</i>
<i>Pedicularis kantingensis</i>	like <i>lachnoglossa</i> but villous galea twisted and corolla lobes rounded. Zhedou Shan
<i>Pedicularis kialensis</i>	red lip, purple twisted bearded galea, alternate leaves. Maniganga area
<i>Pedicularis lachnoglossa</i>	elegant slender species with dark pink flowers, the galea strongly twisted and densely villous. Widespread on the plateau
<i>Pedicularis lasiophrys</i>	stems 2 lines of hairs, flowers yellow, with yellow hairs. Balang Shan at mid-levels. 2016 pass north of Ganze – but couldn't rule out <i>kongoensis</i> on these.
<i>[Pedicularis likiangensis</i>	short several stemmed species with red-pink flowers, tube bent at right-angles basally. Dzo Dala]
<i>Pedicularis lineata</i>	pale pink species e.g. Balang Shan. 2011 Balang Shan
<i>Pedicularis longiflora</i> var <i>longiflora</i>	deep yellow without maroon markings, long tubed flowers, marshes or grasslands. Widespread
<i>Pedicularis longiflora</i> var <i>tubiformis</i>	deep yellow with maroon markings, long tubed flowers, marshes or grasslands. Scattered in the west
<i>[Pedicularis longistipitata</i>	4 lines of hairs on blackish stem. Yellow flowers. High pass between Daocheng and Xiangcheng]
<i>[Pedicularis lyrata</i>	dwarf single stemmed, opposite leaved species with yellow flowers, galea falcate at middle and with 3-5 teeth each side near apex. North of Ganze]
<i>Pedicularis macrosiphon</i>	small pink species seen at Wolong and lower slopes of the Balang Shan
<i>[Pedicularis metzsetchuanica</i>	red flower, purple galea. Ganze area]
<i>Pedicularis microchilae</i>	Cho La

<i>Pedicularis mussotii</i>	var <i>lophocentra</i> . Raspberry ripple flowers, long pedicels.
<i>Pedicularis oederi</i>	yellow species with orangey-red tip to galea, widespread, especially on the plateau
<i>Pedicularis oliveriana</i>	between Ganze and Maniganga
<i>Pedicularis petitmenginii</i>	white flowers with a pink edge and strongly twisted galea. Near Rilong
<i>Pedicularis polyodonta</i>	pretty small pale yellow flowers, ovate pinnatisect leaves, galea falcate apically with 3-6 teeth on each side. Ganze area and Luo Gou Haii. 2016 Ganze and Maniganga areas
[ <i>Pedicularis princeps</i>	pale yellow flowers – very tall plant around 1m. Wolong]
<i>Pedicularis przewalskii</i>	deep pink long-tubed dwarf alpine species Litang area. 2016 Dzho Dala and Cho La
<i>Pedicularis pseudomyriophylla</i>	between Danba and Luhou
<i>Pedicularis rex lipskyana</i>	tall and robust. Leave bases connate and cupular. Flowers in 'cups' purple red. Wolong area & near Dege. Wolong, lower slopes of the Balang Shan, also near Kangding
<i>Pedicularis rex rex</i>	as above but flowers yellow. Between Luding and Ya'an. 2016 Kangding area
<i>Pedicularis rhinanthoides</i> ssp <i>flabellata</i>	a widespread species (ssp <i>tibetica</i> probably also present) in moist meadows, slopes, etc, lower lip spreading forward to encompass beak which is S-shaped. Pink or pink and white
[ <i>Pedicularis rhodotricha</i>	medium purple-red flowered species, half moon galea is densely covered in long pale red hairs! Luo Gou Haii. Noted on the pass between Daocheng and Xiangcheng and also Jainxi Pass]
[ <i>Pedicularis roylei</i>	beautiful alpine species with strongly-veined pink flowers, lip lobes overlapping. Dzo Dala. Frequent on the passes]
[ <i>Pedicularis rudis</i>	something like this normally whit-ish species but our specimens were pinkish and also much shorter. Litang area]
[ <i>Pedicularis rupicola</i> ssp <i>rupicola</i>	Chola Shan, whitish or pale pink species with dark mark on galea, dark lines on the lip. Jainxi Pass]
[ <i>Pedicularis semitorta</i>	roadsides below Xiling Shan]
[ <i>Pedicularis sima</i>	medium tall rose flowers, leaves whorls of 3. Near Kangding]
<i>Pedicularis siphonantha</i>	pink and white with twisted beak and inverted black 'v' markings. Widespread on the plateau
[ <i>Pedicularis steiningeri</i>	tall, 70cm+, yellow flowered species with linear dentate leaves, the teeth with more than 60 pairs. Luhou, Maniganga, etc. Frequent in subalpine forst edges and alpine rhodo scrub]
[ <i>Pedicularis superba</i>	tall and robust. Leave bases connate. Large flowers pink-red, galea paler dark tipped. Danba to Luhou]
[ <i>Pedicularis stenocorys</i>	pink flowers with purple spots, slender galea, calyx white-villous. Luo Gou Haii]
[ <i>Pedicularis szetchuanica</i> ssp <i>latifolia</i>	en route to Chola Shan, abundant bright pink species among shrubberies]
<i>Pedicularis szetchuanica</i> ssp <i>szetchuanica</i>	differs from subspecies <i>latifolia</i> by being pubescent. Balang Shan
<i>Pedicularis tatsienensis</i>	blackish-purple goosehead galea, lip shining red-purple. Zhedou Shan. 2016 Rilong area
[ <i>Pedicularis thamnophilla</i>	inflated petioles forming a cup, flowers yellow, leaves in whorls of 3 or 4. Common either side of Yajling. Zhedou Shan]
[ <i>Pedicularis tongolensis</i>	<i>ingens</i> group, tall yellow, glabrous except calyx, leaves clasping, densely incised. Between Ganze and Litang. Between Yajling and Litang]

<i>Pedicularis torta</i>	stunning spicate yellow or white flowered species with purple galea and S-shaped beak. Luo Gou Haii. 2016 Rilong
<i>Pedicularis trichocymba</i>	yellow, fairly tall, bracts leafy exceeding flowers. Between Litang and Daocheng. 2016 between Maniganga and Ganze
[ <i>Pedicularis tricolor</i>	striking yellow and white species with cymes of large flowers with twisted beak, grasslands and meadows e.g. near Luhuo, Ganze, between Danba and Yajlang, Tsosum Mountain and between Yajling and Kangding.]
[ <i>Pedicularis variegata</i>	remarkable species with large creamy-white flowers and reddish-purple beaks larger than the plant itself. Zhedou Shan.]
[ <i>Pedicularis urceolata</i>	clump-forming long-tubed species with bright pink flowers with deeper rose galea. White spot at galea base. On pass between Daocheng and Xiangcheng and also on Zhedou Shan]
[ <i>Pedicularis verbenifolia</i>	unusual violet flowered species. North of Luhou]
<i>Siphonostegia chinensis</i>	unusual flowers – lower lip yellow, upper red-purple. Wolong, Danba and below Kangding
[ <i>Triosteum himalayanum</i>	odd yellowish and red flowers, broad triangular leaves, woods Rilong]
<i>Verbascum thapsus</i>	common along roadsides in drier areas
[ <i>Veronica ciliata</i>	Between Yajlang and Litang]
[ <i>Veronica lanuinosa</i>	scattered throughout]
<b>Gesneriaceae</b>	
[ <i>Corallodiscus flabellatus</i>	rhomboid pleated leaves. Between Danba and Luhou. Also form or species on rocks in this area]
<i>Corallodiscus lanuginosus.</i>	blue flowers and wrinkled leaves. Extensive colonies flowering west of Danba, Zhedou Shan
<b>Rubiaceae</b>	
<i>Leptodermus forrestii</i>	small shrub with funneliform blue flowers. Between Litang and Daocheng. Maybe this species in 2016 in Wolong area?
<i>Leptodermus potannini</i>	below Kangding
<b>Bignoniaceae</b>	
<i>Incarvillea arguta</i>	common along roadsides in drier areas, bushy with small pinnate leaves
<i>Incarvillea compacta</i>	pass north of Ganze. 2016 between Litang and Yajling
<i>Incarvillea delavayi</i>	common garden species seen en route to Cho La Pass from Dege, tall spicate inflorescences. Pass between Daocheng and Xiangcheng. 2016 seen between Ganze and Dege
<i>Incarvillea mariei</i>	common and variable. Some stunning deep pink forms. Form <i>grandiflora</i> between Ganze and Litang
<i>Incarvillea sinensis</i>	between Dege and Ganze
<b>Orobanchaceae</b>	
<i>Boschniakia himalaica</i>	dark-coloured parasitic species. In seed at various localities
[ <i>Orobanche coerulescens</i>	between Ganze and Maniganga]
<b>Lentibulariaceae</b>	
[ <i>Pinguicula alpina</i>	Luo Gou Haii. Wolong]

## **Verbenaceae**

[*Clerodendron bungei*

village roadsides in Sichuan, globular pink flowerheads]

## **Balsamiaceae**

*Impatiens delavayi*

*Impatiens lateristachys*

*Impatiens purpurea*

yellow balsam near Wolong. Other Impatiens species also seen.  
below Kangding  
above Wolong

## **Lamiaceae**

*Ajuga lupulina*

*Ajuga ovalifolia*

large bracts of reddish or cream. Widespread in grasslands  
deep purple flowers and crinkled leaves. Widespread in  
grasslands

[*Dracocephalum calophyllum*

*Dracocephalum Forrestii*

*Dracocephalum purdomii*

[*Eriophyton wallichii*

Ganze and Luhou areas, deep blue, fine-cut leaves]

Leaves with even finer segments. Scattered on the plateau  
scattered on the plateau

a lanate short herb with purple-red flowers almost hidden in the  
leaves. Pass between Daocheng and Xiangcheng]

*Lamiophlomis rotata*

Stemless crinkled broad leaves with purple flowers. Widespread  
on the plateau

[*Lamium amplexicaule*

*Leonurus* sp

*Nepeta stewartiana*

noted in fields near Danba]

noted Zhedou Shan

variable blue to mauve-pink sp east of Luhou and elsewhere in  
grasslands

*Phlomis tatsienense*

[*Marmoritis complanatum*

wonderful deep purple species on lower slopes of Balang Shan  
superb felted deadnettle of high altitude screes with little blue  
flowers. Leaves noted on Dzo Dala. Leaves noted at a variety of  
high passes, but also in flower on the pass between Daocheng and  
Xiangcheng]

*Prunella vulgaris*

scattered along roadsides

*Salvia amponulabris*

Wolong

*Salvia bulleyana*

Wolong

*Salvia evansiana*

impressive blue species, widespread in mountains, grasslands

[*Salvia subpalmatinervis*

widespread purplish-red species, quite hairy flowers]

*Salvia pratii*

widespread on the plateau

[*Salvia przewalskii*

Lugu Lake and elsewhere a fine species with deepest purple lip]

*Scutellaria orthocalyx*

frequent along roadsides pinkish-blue spikes

## **Campanulaceae**

*Campanula aristata*

very tiny flowers. Balang Shan

[*Campanula immodesta*

a delicate wiry-stemmed species on most passes]

[*Adenophora capillaris*

pretty pale blue bells on wiry stems in Ganze area]

[*Adenophora coelestis*

tall with dark blue bells, Xinjun Shan]

*Adenophora gracilis*

scattered in grasslands Luhou, Ganze etc

*Adenophora jasionifolia*

scattered in grasslands Luhou, Ganze etc

*Codonopsis pinifolia*

clambering species with open blue flowers. Luhou and Ganze area

*Codonopsis nervosa*

Yajling and Zhedou Shan

*Codonopsis subglobosa*

Zhedou Shan

*Cyananthus flavus*

small yellow alpine looking like a gentian – Balang Shan, Cho La  
Pass and common in the Zhedou Shan area

*Cyananthus incanus*

blue species Litang and Zhedou Shan

*Cyananthus macrocalyx*

Dzho La

*Platycodon grandiflorus*

west of Litang in high tundra!

## **Valerianaceae**

*Nardostachys gradiflora*  
*Valeriana officinalis*

widespread on plateau grasslands  
scattered

## **Zingiberaceae**

[*Roscoea tibetica*

?probably this species. On cliffs between Danba and Luhou]

## **Commelinaceae**

*Commelina communis*

lush valleys below Kangding

## **Liliaceae**

*Alectris alpestris*

white flowers, scattered e.g. Zhedou, Lu Gou Hai. 2016 Balang Shan

[*Alectris glabra*

slender brownish stems. Commonest in the Kangding area]

[*Alectris glandulifera*

above Wolong]

*Alectris grandiflorus*

Wolong

[*Alectris nana*

between Daocheng and Xiangcheng]

*Alectris pauciflora*

Wolong and lower Balang Shan. Luo Gou Hai

[*Alectris stenoloba*

Luo Gou Hai]

*Allium atosanguineum* var *tibeticum*

brass-yellow dwarf allium. Dzo Dala and Cho La Passes

*Allium beesianum*

blue-flowered. Between Ganze and Litang. 2016 between Litang and Yajling

*Allium cyathophorum*

pretty purple umbels. Ganze to Maniganga. 2016 west of Maniganga

*Allium macranthum*

umbellate species with pendant flowers, near Ganze

*Allium prattii*

widespread pink drumstick, broad leaves

*Allium przewalskii*

frequent on plateau grasslands

[*Barnardia japonica*

tall slender pink spikes open slopes near Luhou]

*Cardiocrinum giganteum* ssp *yunnanense*

magnificent fragrant trumpets. Wolong! 2016 only seen from the vehicle!

*Eremurus chinensis*

tall, white spikes between Rilong and Danba

[*Fritillaria cirrhosa* (*siniaca*)

scattered on the plateau]

*Fritillaria przewalskii*

Gela La Pass. 2016 pass north of Ganze

[*Fritillaria sichuanica*

between Daocheng and Litang]

*Fritillaria unibracteata*

scattered, Balabg Shan, Luhou and Ganze areas

[*Hemerocallis fulva*

near Danba, but maybe planted, also en route to Wolong]

*Lilium bakerianum*

tall many-headed apricot-coloured lily. Noted on the descent to Yajling and also between there and Kangding

*Lilium davidii*

tall orange turk's-cap type near Danba and below Kangding. 2011 near Danba

*Lilium duchartrei*

lovely white turk's-cap type, between Danba and Luhou. In bud near Wolong as well

[*Lilium leucanthemum*

impressive tall lily one to two metres tall. It seems to be var *centifolium* as the tepals were tinged purplish or brownish along the mid-vein on the outside, however that form is only known from one site in South Gansu, though at a similar altitude.]

*Lilium lophophorum*

noted almost throughout on and near high passes. Mostly the yellow form, but south of Litang was a peach coloured form.

[*Lilium primulinum*

bright yellow lily seen only from a distance in the lush valleys below Kangding may well have been this species]

<i>[Lilium rosthornii</i>	orange turks-caps with purple spots. Fimbriate nectaries. Probably this species in the valleys below Kangding]
<i>Lilium sargentiae</i>	fabulous trumpet lily in lush valleys east of Kangding.
<i>[Lilium sulphureum</i>	impressive pale yellow trumpet lily, fragrant, between Kangding and Ya'an at c2000m.]
<i>[Lilium taliense</i>	white turk's-cap with purple spots, brownish anthers. 2011 possibly this species between Kanding and Ya'an]
<i>Liriope kansuensis</i>	between Rilong and Danba
<i>[Lloydia delavayi</i>	yellow with reddish or purplish-green inside. Luo Gou Haii. Near Danba, Yajlang too]
<i>Lloydia serotina</i>	white – the Snowdon Lily. On east slopes of Balang Shan. The white <i>Lloydia</i> growing in rocks above screes at Luo Gou Haii may have been this species
<i>[Lloydia tibetica</i>	yellow with reddish or purplish-green inside. Inner tepals crested-lamellar near base adaxially. Balang Shan]
<i>Polygonatum curvostylum</i>	verticillate hanging pale purple flowers. Balang Shan.
<i>[Polygonatum hookeri</i>	tiny pink flowered solomon's seal. Balang Shan]
<i>Polygonatum verticillastrum</i>	mauve flowers, linear leaves, Luo Gou Haii. Balang Shan. Only in fruit in 2016
<i>Maianthemum atropurpureum</i>	Wolong. 2016 near Rilong
<i>Maianthemum henryi</i>	tubular white-green flowers. Luo Gou Haii and Kangding area. 2016 Balang Shan
<i>[Maianthemum oleraceum</i>	aka <i>Smilacina oleracea</i> . flowers white to red, tepals almost free. Balang Shan]
<i>[Maianthemum tatsienense</i>	aka <i>Smilacina paniculata</i> ! Greenish flowered. Common in Wolong and Balang Shan area]
<i>Notholirion bulbiferum</i>	superb pale blue-purple flowered lily below Luo Gou Haii and Zhedou Shan
<i>[Ophiopogon angustifolius</i>	stoloniferous. Near Danba]
<i>Ophiopogon bodinieri</i>	spikes of white flowers. Stoloniferous. Luding to Ya'an. Common in the Wolong area.
<i>Ophiopogon intermedius</i>	spikes of white flowers. Not stoloniferous. Common in the Wolong area. Other species of <i>Ophiopogon</i> noted but not identified – a tricky group!
<i>Paris polyphyllum</i>	Wolong area
<i>Streptopus parviflorus</i>	1-2 little white flowers hanging under leaves axils. Balang Shan. 2016 between Danba and Luhou
<i>[Streptopus obtusatus</i>	Flowers mainly terminal, yellowish. Wolong]
<i>Streptopus simplex</i>	Wolong and Rilong areas
<i>Tofieldia tibetica</i>	Wolong
<i>Veratrum macrophyllum</i>	fine species with white flowers, large ribbed leaves, Balang Shan
<i>Veratrum nigrum</i>	black-flowered. Balang Shan
<i>Veratrum stenophyllum</i>	green-flowered. Zhedou Shan
<b>Iridaceae</b>	
<i>[Iris bulleyana</i>	paler than <i>chrysographes</i> with yellow-tinged patch at centre rather than base. Balang Shan]
<i>Iris chrysographes</i>	superb deep purple flowers with gold lines. Lower parts of the Balang Shan, common on Zhedou Shan
<i>[Iris confusa</i>	odd flowers, widespread in mid-altitudes. Ascending rhizomes]

<i>Iris cuniculiformis</i>	dwarf flat-topped lilac to pink/violet flowers 6-7cm across. Between Litang and Yajlung. Balang Shan
<i>Iris farreri</i>	another flat-topped iris, densely tufted, white and violet flowers, 7.5 – 9cm across. North of Luhou
[ <i>Iris goniocarpa</i>	dwarf, flat-topped pale purple/blue iris. Around Luhou and also good populations in Litang and Yajling areas]
[ <i>Iris polysticta</i>	fine mauve species west of Ganze pass]
[ <i>Iris ruthenica</i>	?possibly this species between Litang and Yajling]

## Araceae

<i>Arisaema ciliatum</i>	odd ones seen in flowers, scattered e.g. between Ganze and Litang. Zhedou Shan. In 2016 we saw by the looping road between Ganze and Litang
<i>Arisaema erubescens</i>	was ' <i>consanguineum</i> '. widespread and variable species with brown or green and white-striped spathes, mostly over by July but some in flower at various localities. In general I found these very difficult to identify!
<i>Arisaema elephas</i>	Wolong and Luo Gou Hai.

## Orchidaceae

<i>Amitostigma monanthum</i>	delicate orchid with several white flowers with purple spots on the lip. Wolong. Also between Daocheng and Litang. In 2016 Wolong and also between Danba and Luhou. Whether it is this species or <i>basifoliatum</i> or <i>farreri</i> I am not certain
<i>Androcorys oxysepalus</i>	tiny green orchid just a few cm high in grasslands on the Balang Shan. Maybe other <i>Androcorys</i> species seen?
[ <i>Bletilla formosana</i>	pink and yellow species along Danba to Kangding road]
[ <i>Calanthe davidii</i>	white or greenish flowers, lips with apparently four lobes, plant half a metre tall. Found between Luding and Ya'an, plants near Danba were <i>not</i> this species]
<i>Calanthe tricarinata</i>	Complicated chestnut and yellow lip with other petals and sepals lime green. Common around Wolong
<i>Cephalanthera longifolia</i>	lower slopes of the Balang Shan
[ <i>Coeloglossum viride</i>	one near Rilong. Balang Shan and Luo Gou Hai]
[ <i>Cymbidium faberi</i>	terrestrial. Long acute leaves to 80cm, scape tall with sepals and petals pale yellowish green; lip pale yellowish green with purplish red patches. Between Luding and Ya'an]
<i>Cypripedium calcicola</i>	smaller, squarer flowers, two pale windows at back of slipper and no white rim. Marshy area near between Danba and Luhou. In 2016 seen between Litang and Yajling
[ <i>Cypripedium flavum</i>	large yellow slipper with red spots inside. Single plant in bloom on Balang Shan amongst abundant <i>Cypripedium tibeticum</i> and <i>Cypridepium franchetii</i> !]
[ <i>Cypridepium franchetii</i>	?very large deep pink slippers – need to check next time – are ovaries densely villous? A few plants with <i>Cypripedium tibeticum</i> at mid-levels on the Balang Shan]
[ <i>Cypripedium guttatum</i>	small spherical white and pink slippers. Tsosum Mountain]
<i>Cypripedium tibeticum</i>	large deep pink slippers. Good colony on Balang Shan, also Danba area, Dege area and Luo Gou Hai.
[ <i>Cypripedium yunnanense</i>	lovely pink species between Ganze and Yajling]
[ <i>Dactylorhiza hatagirea</i>	typical marsh orchid. Between Danba and Yajlang]



<i>[Dendrobium monoliforme</i>	creamy or yellow-white flowers, tinged with various colours. Growing on roadside rocks between Kangding and Ya'an!]
<i>[Dendrobium nobile</i>	large white flowers, out of reach up a bank between Kangding and Ya'an!]
<i>Epipactis helleborine</i>	in mossy forest between Danba and Luhou. 2016 in bud lower slopes of Balang Shan
<i>[Epipactis humilior</i>	hanging rather closed green flowers tinged purple. Mid-altitudes. Near Danba]
<i>Epipactis mairei</i>	rather colourful helleborine seen below Wolong and Rilong
<i>Galearis diantha</i>	common Zhedou Shan and Luo Gou Hai
<i>Galearis roborowskii</i>	Luo Gou Hai
<i>Galearis spathulata</i>	very short straight stout spur. Single leaf. Very small plant. Balang Shan. 2016 between Danba and Luhou
<i>Galearis tschiliensis</i>	Maniganga area
<i>Galearis wardii</i>	long (6-10mm) slender curved spur. Pink-purple spotted with deep purple. Two leaves. Frequent on the slopes of the Balang Shan
<i>[Gymnadenia conopsea</i>	grasslands, scattered throughout the tour.]
<i>Gymnadenia crassinervis</i>	variable pink species, short or medium, spur always tiny. Quite common in grasslands throughout.
<i>[Gymnadenia emeiensis</i>	robust white flowered species noted in subalpine grasslands throughout the tour. In some books this is shown as 'orchidis' – it is not that species!]
<i>Gymnadenia orchides</i>	robust species with pink to red small fragrant flowers with short curved spur. Luo Gou Hai. 2016 Balang Shan
<i>[Habenaria fargesii</i>	fine butterfly orchid with lip strongly three parted, the lobes coiled! Between Dege and the Cho La Pass and also Luo Gou Hai
<i>[Habenaria wolongensis</i>	between Litang and Tsosum mountain]
<i>Hemipilia flabellata</i>	large round spotted basal leaf. Few flowers, white with pink and green marks. Yajling to Kangding. 2016 Zhedou Shan
<i>Herminium alashanicum</i>	relatively tall and slender musk orchid, quite common in grasslands especially in Danba, Luhou and Ganze areas
<i>Herminium josephii</i>	relatively tall and slender musk orchid, lip entire, 2-leaved, lip spurless, flower not second, yellowish-green. Maniganga, Dege and Dzo Dala
<i>Herminium monorchis</i>	Musk Orchid. Lip furcately 3-lobed, lobes linear, 3-4 leaves, petals rhombic. Widespread, often in large dense colonies
<i>[Herminium ophioglossoides</i>	relatively tall and slender musk orchid, lip 3-lobed, plant with one leaf. Common and widespread on grasslands around Balang Shan and Danba]
<i>[Liparis sp</i>	tiny brown-flowered species under mossy forest lower Balang Shan]
<i>Malaxis monophyllos</i>	slender green orchid with two leaves on all plants we saw
<i>Neottia acuminata</i>	like a Lesser Twayblade. Pale tepals with dark brown central stripes. On leaves, saprophytic. Above Wolong
<i>Neottia puberula</i>	slightly larger flowers than the next species. Wolong
<i>Neottia smithii</i>	delicate little twayblade with green white-edged flowers. Not uncommon under forest lower slopes of Balang Shan
<i>Oreorchis patens</i>	like a rather glorified coralroot with many white, yellow and brown flowers, and single dark green strongly veined leaf. Above Wolong, also Luo Gou Hai

<i>[Peristylus jinshuanicus</i>	slender orchid with narrow spike of yellow-green flowers. Rather Malaxis-like. Between Luding and Ya'an]
<i>[Platanthera chlorantha</i>	particularly dense flower heads. Luo Gou Hai]
<i>[Platanthera minutiflora</i>	delicate little butterfly orchid with yellow-green flowers. Luo Gou Hai]
<i>[Platanthera souliei</i>	tall twayblade-like species, large green leaves, yellow-green flowers. Danba area]
<i>Pleione limprichtii</i>	abundant in leaf on mossy rocks between Danba and Luhou, one still just on flower! 2016 finished flowering
<i>Ponerorchis brevicealcarata</i>	dwarf, one-leaved, 1-3 pink flowers, spur less than 1mm. Scattered throughout under rhodos, in alpine grasslands etc. Balang Shan
<i>Ponerorchis chusua</i>	small pink orchid widespread and variable
<i>[Ponerorchis limprichtii</i>	one-leaved, the leaf purple on underside, flowers 2 to several, rather large for size of plant, lilac to rose-purple, open]
<i>[Ponerorchis sichuanica</i>	2-5 leaved, pink flowers, leaves on stems, petals papillose/ciliate, bracts = less than ovary, stem and leaves green. Balang Shan area. Other <i>Ponerorchis</i> were probably seen too!]
<i>Spiranthes sinensis</i>	gorgeous little pink and white orchid with a twist. Scattered throughout

## Systematic List Number 2      Birds

Nomenclature and taxonomy is taken from the Birds of China by MacKinnon and Phillipps (2000) and where species are found in it, from Birds of East Asia by Brazil (2009). An indication of frequency of sightings is given by the number of days out of 15 a species was seen on – thus 4/15 means a species was noted on four days during the holiday.

Tibetan Snowcock	<i>Tetraogallus tibetanus</i>	heard on both the Dzho La and the Cho La
Tibetan Partridge	<i>Perdix hodgsoniae</i>	1 near Litang
White-eared Pheasant	<i>Crossoptilon crossoptilon</i>	1 on the lower slopes of the Balang Shan (IG only)
Ruddy Shelduck	<i>Tadorna ferruginea</i>	several near Ganze
Eastern Spot-billed Duck	<i>Anas zonorhyncha</i>	1 near Ganze
Grey-headed Woodpecker	<i>Picus canus</i>	singles at two localities near Ganze
Hoopoe	<i>Upupa epops</i>	widely scattered. 7/15
Eurasian Cuckoo	<i>Cuculus canorus</i>	scattered. 6/15
White-throated Needletail	<i>Hirundapus caudacutus</i>	one flying into a nest near Dege
Fork-tailed Swift	<i>Apus pacificus</i>	Most frequent on and around Balang Shan. 6/15
Rock Pigeon	<i>Columba livia</i>	towns
Hill Pigeon	<i>Columba rupestris</i>	scattered in higher areas. 6/15
Snow Pigeon	<i>Columba leuconota</i>	singles Dzho La and on both visits to the Cho La. 3/15
Speckled Wood Pigeon	<i>Columba hodgsonii</i>	one or two large flocks in the Balang Shan area. 2/15
Oriental Turtle Dove	<i>Streptopelia orientalis</i>	widespread. 8/15
Spotted Dove	<i>Streptopelia chinensis</i>	Chengdu
Green Sandpiper	<i>Tringa ochrurus</i>	single near Rilong
Redshank	<i>Tringa totanus</i>	1 near Ganze
Lammergeier	<i>Gypaetos barbatus</i>	seen on several occasions on the plateau. 7/15
Himalayan Griffon Vulture	<i>Gyps himalayensis</i>	widespread in small numbers throughout. 10/15
Golden Eagle	<i>Aquila chrysaetos</i>	Dzho La
Chinese Sparrowhawk	<i>Accipiter soloensis</i>	a male seen right on top of the Cho La on both visits – seems rather high for this species! 2/15
Upland Buzzard	<i>Buteo hemilasius</i>	1 near Maniganga
Common Buzzard	<i>Buteo buteo</i>	1 Balang Shan
Himalayan Buzzard	<i>Buteo buteo burmanicus</i>	scattered on the plateau. 5/15
Black Kite	<i>Milvus migrans lineatus</i>	scattered. 3/15
Common Kestrel	<i>Falco tinnunculus</i>	1 Dzho La
Great Crested Gebe	<i>Podiceps cristatus</i>	several on a lake near Ganze
Eastern Cattle Egret	<i>Bubulcus coromandelicus</i>	several near Ganze
Chinese Pond Heron	<i>Ardeola bacchus</i>	1 near Luhou
Brown Shrike	<i>Lanius cristatus</i>	1 Wolong
Grey-backed Shrike	<i>Lanius tephronotus</i>	widespread. 14/15
Red-billed Blue Magpie	<i>Urocissus erythrorhyncha</i>	a few in the Wolong area
Tibetan Magpie	<i>Pica pica bottanensis</i>	widespread west of Balang Shan. 10/15

Hume's Groundpecker	<i>Pseudopodoces humilis</i>	common in the Litang and Maniganga areas. 3/15
Red-billed Chough	<i>Pyrhcorax pyrrhcorax</i>	common on the plateau. 7/15
Yellow-billed Chough	<i>Pyrhcorax graculus</i>	scattered on the highest areas. 3/15
Raven	<i>Corvus corax</i>	frequent. 12/15
Daurian Jackdaw	<i>Corvus dauuricus</i>	only noted near Ganze
Large-billed Crow	<i>Corvus macrorhynchus</i>	scattered throughout. 10/15
Black Drongo	<i>Dicrurus macrocercus</i>	singles Daocheng and Zhedou Shan
Blue Rock Thrush	<i>Monticola solitarius</i>	a male near Rilong
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	only noted near Luhuo
Chestnut Thrush	<i>Turdus rubrocanus</i>	scattered. 5/15
Kessler's Thrush	<i>Turdus kessleri</i>	common on the plateau. 6/15
Black Redstart	<i>Phoenicurus ochrurus</i>	scattered. 3/15
Daurian Redstart	<i>Phoenicurus aureus</i>	1 near Rilong
Blue-fronted Redstart	<i>Phoenicurus frontalis</i>	scattered. 4/15
Hodgson's Redstart	<i>Phoenicurus hodgsoni</i>	frequent on plateau. 6/15
White-throated Redstart	<i>Phoenicurus schisticeps</i>	scattered – very beautiful! 3/15
White-winged Redstart	<i>Phoenicurus erythrogastrus</i>	a male on the Cho La
White-capped Redstart	<i>Chaimarornis leucocephalus</i>	common along all watercourses. 14/15
Plumbeous Redstart	<i>Rhyacornis fuliginosa</i>	common along all watercourses. 14/15
Himalayan Rubythroat	<i>Luscinia pectoralis</i>	Jiaxing Pass
Grandala	<i>Grandala coelicolor</i>	a fabulous male on the Cho La
Oriental Magpie-Robin	<i>Copsychus saularis</i>	Chengdu Panda Centre
Crested Myna	<i>Acridotheres cristatellus</i>	Chengdu Panda Centre
Songar Tit	<i>Parus songarus</i>	near Maniganga and also near Dege. 2/15
White-browed Tit	<i>Parus superciliosus</i>	Dzho La and near Maniganga. 2/15
Coal Tit	<i>Parus ater</i>	near Maniganga
Grey-crested Tit	<i>Parus dichrous</i>	near Maniganga
Eastern Great Tit	<i>Parus minor</i>	scattered. 4/15
Green-backed Tit	<i>Parus monticolus</i>	near Luhou
Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i>	scattered. 4/15
Red-rumped Swallow	<i>Hirundo daurica</i>	scattered. 4/15
Asian House Martin	<i>Delichon dasypus</i>	widespread. 8/15
Light-vented Bulbul	<i>Pycnonotus sinensis</i>	Chengdu
Collared Finchbill	<i>Spizixos semitorques</i>	on last day on way to Chengdu
White-browed Tit-Warbler	<i>Leptopoeile sophiae</i>	several on the Dzho La
Hume's Warbler	<i>Phylloscopus humei</i>	Wolong
Buff-barred Warbler	<i>Phylloscopus pulcher</i>	Wolong and Balang Shan
Tickell's Leaf Warbler	<i>Phylloscopus affinis</i>	Dzho La and Luo Gou Hai. 2/15
Buff-throated Warbler	<i>Phylloscopus subaffinis</i>	?probably this species Dzho La
Chinese Leaf Warbler	<i>Phylloscopus yunnanensis</i>	Wolong. The very odd song is quite different from other <i>Phylloscopus</i>
Large-billed Leaf Warbler	<i>Phylloscopus magnirostris</i>	on the pass with no name!
White-tailed Leaf Warbler	<i>Phylloscopus davisonii</i>	?probably this species Wolong
Grey-crowned Warbler	<i>Seicercus tephrocephalus</i>	Wolong – may have been one of the other closely related species though!
Giant Laughingthrush	<i>Garrulax maximus</i>	1 lower slopes of the Balang Shan and 1 on the Zhedou Shan
Spotted Laughingthrush	<i>Garrulax ocellatus</i>	1 on the lower slopes of the Balang Shan
Elliot's Laughingthrush	<i>Garrulax elliotii</i>	widespread. 12/15
White-browed Laughingthrush	<i>Garrulax sannio</i>	Chengdu Panda Centre

Red-billed Leiothrix	<i>Leiothrix lutea</i>	Chengdu Panda Centre
Vinous-throated Parrotbill	<i>Paradoxornis webbianus</i>	Chengdu Panda Centre and between Ya'an and Chengdu. 2/15
Oriental Skylark	<i>Alauda gulgula</i>	scattered. 2/15
Japanese White-eye	<i>Zosterops japonica</i>	Chengdu Panda Centre
Tree Sparrow	<i>Passer montanus</i>	widespread. 15/15
Russet Sparrow	<i>Passer rutilans</i>	near Rilong
Rufous-necked Snowfinch	<i>Pyrgilauda ruficollis</i>	close to Maniganga
White-rumped Snowfinch	<i>Pyrgilauda taczanowskii</i>	close to Maniganga
Citrine Wagtail	<i>Motacilla citreola</i>	scattered. 3/15
White Wagtail	<i>Motacilla alba</i>	widespread. 12/15
Grey Wagtail	<i>Motacilla cinerea</i>	scattered. 3/15
Rosy Pipit	<i>Anthus roseatus</i>	widespread. 8/15
Alpine Accentor	<i>Prunella collaris</i>	1 Dzho La and 2 Luo Gou Hai
Rufous-breasted Accentor	<i>Prunella strophiata</i>	scattered. 3/15
Robin Accentor	<i>Prunella rubeculoides</i>	2 Dzho La
Plain Mountain Finch	<i>Leucosticte nemoricola</i>	scattered. 5/15
Grey-capped Greenfinch	<i>Carduelis sinica</i>	Chengdu Panda Centre and near Rilong
Red-fronted Rosefinch	<i>Carpodacus puniceus</i>	2 of these large birds Dzho La
Common Rosefinch	<i>Carpodacus erythrinus</i>	2 males en route to Maniganga and two between Dege and Ganze. 2/15
Pink-rumped Rosefinch	<i>Carpodacus eos</i>	these beautiful birds noted at a number of localities. 5/15
Blandford's Rosefinch	<i>Carpodacus rubescens</i>	male and female near Rilong
Spot-winged Rosefinch	<i>Carpodacus rhodopeplus</i>	1 on the pass with no name
Chinese White-browed Rosefinch	<i>Carpodacus thura dubius</i>	scattered. 5/15
Streaked Rosefinch	<i>Carpodacus rubicilloides</i>	a female on Balang Shan
Sharpe's Rosefinch	<i>Carpodacus verreauxii</i>	a pair near Rilong
Grey-headed Bullfinch	<i>Pyrrhula erythaca</i>	Lower slopes of the Balang Shan
White-winged Grosbeak	<i>Mycerobas carnipes</i>	1 near Dege and a female on a nest near Kangding
Godlewski's Bunting	<i>Emberiza godlewskii</i>	scattered. 5/15

## Systematic List Number 3      Mammals

Tufted Deer	<i>Elaphodus cephalophus</i>	2 at night near Maniganga
Forest Musk Deer	<i>Moschus berezovskii</i>	2 at night above Wolong
Serow	<i>Capricornis milneedwardsii</i>	1 in daylight in the Wild Man Valley near Maniganga
Long-tailed Goral	<i>Naemorhedus caudatus</i>	1 at night above Wolong and also a dead one there
Blue Sheep	<i>Pseudois nayaur</i>	10 on the Dzho La, 49 on the first crossing of the Cho La and around a dozen on the second crossing including some 'popping our under our feet'!
Raccoon Dog	<i>Nyctereutes procyonoides</i>	a dead one below Wolong
Red Fox	<i>Vulpes vulpes</i>	1 on the night drive near Maniganga
Black-lipped Pika	<i>Ochotona curzoniae</i>	locally very common in Maniganga and Ganze areas
Kansu Pika	<i>Ochotona cansus</i>	some in a rock pile near Ganze
Moupin Pika	<i>Ochotona thibetana</i>	1 lower slopes of the Balang Shan
Large-eared Pika	<i>Ochotona macrotis</i>	noted on both crossings of the Cho La