

lower than the summit where we stood, and consisted of sloping plateaus, rounded ridges and here and there a level triangle, all built of more or less horizontal alternating strata of limestone and sandstone, with a filling of multicoloured marls in a few depressions. This territory, from Da'erbi to Yongning in the west, and as later became apparent, far beyond Jinsha Jiang to the south, is, superficially at least, the geologically least disturbed part of the Yunnan highlands. That night there was some shouting caused by the capture of a thief who had entered the yamen and taken a few harnesses and other items from our boxes. Next morning another was caught in the act of making off with Schneider's raincoat, so that in the end we had to insist that the "prince" should give us a written undertaking to assume responsibility for everything which might be stolen from us by his "law-abiding" people. The plant life had nothing special to offer apart from some fine trees of *Cornus capitata*, now in full bloom, a mass of sulphur yellow, this effect being produced by the four bracts which surround each of the tiny flowers. We also found a tall slender overhanging shrub with pink flowers — *Campylotropis polyantha*.

We left Xinyingpan without regret, though not before I had measured another baseline. We followed the main east branch of the valley up to its origin and found that the simple picture of the route given by Jack<sup>30</sup> was totally incorrect. The source of the river Woluo He is situated here, just above 27° of latitude. Crossing a col at 3075m, we came to a tributary flowing southwards. It followed the same Hongguwu range until it joined a little river which crossed the forest-clad sandstone range from east to west, though its valley was not deeply incised. Running along a stream, the broad ancient cobbled roadway, now completely ruined, led upwards, overgrown by oaks thickly covered with *Dryaria*. The mottled begonia-like leaves of *Parasenecio forrestii* flattened themselves against the mossy forest floor and *Saxifraga chinensis* was opening its flowers with their long deflexed tips. It was pitch dark when we reached our lodgings in Boluoti, the most southerly Xifan village. It lay beyond a second river, parallel to the other, which seemed to drain separately into the Jinsha Jiang. On 30th June, after our guide had slunk off into the forest in the rain, we at last made our way there, travelling south-westwards up and down across three side valleys running down to the river, and deviating round a higher group of peaks. From a crest we at last had a clear view far towards the south and west. The Yongshang basin lay 500m below us; it was really a broad shelf bounded on the far side by a slightly raised edge. Crossing it were a few deeply incised streams which ultimately united and cut their way through the marginal ridge, before running down into the still larger Sanchuan Ba 550m lower down. Today there were again changes in the flora. *Antiotrema dumianum*, a member of a new genus of *Boraginaceae*, grew in the undergrowth of the pine forests, and the splendid new *Trigonotis heliotropifolia* beside a brook. Much lower down we

met some woody climbers: the dull purple *Paederia tomentosa* and *Millettia dielsiana*. Once again we made a long day's march, spending the night at Yongsheng on the further edge of the basin, at 2300m.

Yongsheng was a large town and a busy trade centre. We decided to take a rest day to catch up with the task of drying the pressed plants, a duty which had been somewhat neglected in the last two days. In the event it was done almost too thoroughly. Several hours after nightfall I noticed a pungent reek, more powerful than the ordinary smells of a Chinese lodging. I went to investigate and in the next room I found a stack of drying paper half a metre high, with the whole of one side smouldering; a coolie had set it on fire with his pipe. Père Guillaud, a French missionary who like so many of his confrères was an ardent collector of beetles, paid us a friendly visit. However, we could not afford a prolonged stay and on 2nd July we set out again in the rain, first downhill in wide loops beside the gorge of the stream with its red limestone (presumably ferruginous) to the densely populated Sanchuan Ba. Its stream debouched into the Doluoti river but we did not follow it any further. Instead, the track continued in a westerly direction and ascended into a small valley, finally leading down to the Jinsha Jiang beyond the Naxi village of Dawan, a day's journey from Yongsheng. From the highest col we had a magnificent view of the snow peaks of the Lijiang range, but not until we had descended some way, to a level where the subtropical vegetation had now assumed a green colour, did we emerge from the mist again. *Phyllanthus emblica* was ripening its apple-shaped yellow-green fruits, which the Chinese eat despite their acidity. Here I recorded the highest temperature reading of the year (31.5°), and it was also the lowest altitude that we had reached for some time. At water level under the iron chainbridge at Zi Lijiang it was only 1440m. Sixteen chains side-by-side, with two to serve as guard rails, stretched between two rock platforms 20m high, spanning the Jinsha Jiang where it narrowed to 80m. The planks were very insecurely fastened and the whole bridge swung so violently that not more than two horses were allowed on it at a time, a rule which the watchmen on the tall towers above the gateways at each end of the bridge enforced by signalling. On the far side the miserably ill-paved track climbed up again. A brook plunged out of a ravine in several waterfalls over red limestone rocks. Down the valley towards the south the walls of the river gorge continued almost vertically as far as one could see. Leading up a steep stairway on a rock face, the track offered magnificent vistas. We had to engage several extra men to help with the loads, but our ponies were unbelievably surefooted and not once did we have to dismount. One thousand metres above the river the hillside became less steep and we soon arrived at the village of Duinaoke. On 4th July we ascended gradually through woodland to the pass at 3125m and then down on steep cobblestones into the Lijiang basin. It was raining yet again, and although the hedges were gay with fragrant honeysuckle, abundant white roses and tall golden yellow St John's wort, the dirty town seemed to offer an unfriendly reception.

## Chapter 7. Lijiang and Mount Yulong Shan

Vicissitudes — the Naxi village of Nguluke — geology and summer flowers of the mountain — weather conditions — heaths and meadows of the glacial lake basin and the glacier stream Baishu — splendid primulas in the marshy meadows of Ganhaizi

Lijiang lies in a picturesque site at 2475m at the foot of two hills forming the end of a mountain range which projects from the north into the broad basin of a former lake. The outermost hill is quite low and is cut off by a stream diverted through the town; on it stands a glittering temple between tall cypresses. The basin is bordered by mountain chains running north and south. To the south west a lateral ridge branches off from a pointed peak, Weibi Shan, making a transverse barrier across the basin and forcing the western stream, which forms a lake there in times of flood, to swing round into the eastern part, where it joins the stream just mentioned and another coming from the north east, and turns towards the south. To the north we could at first see nothing but black clouds, through which we now and then caught glimpses of rock slabs and an icy summit, so high above us that from the lower parts of the town it towered far above the quite considerable northern hill. Not until some days had gone by did we see the "Pik" — in Chinese Yulong Shan (Precious Dragon Mountain)<sup>33</sup> — in its full splendour, and then only in the early mornings. It is chiefly this mountain that has made Yunnan famous among botanists and gardeners. First visited by the French missionary Delavay in 1884 and subsequently explored by Forrest, whose expeditions have extended over many seasons, it has yielded hundreds of species new to science and has provided some magnificent high alpine plants for our gardens. I did not intend to stay there long, but I wished to get a general idea of the flora and in particular to collect the cryptogams, which had never been studied at all; Schneider wanted to spend the midsummer weeks there.

First, though, we had to remain in the town for ten days, and endure various annoyances. In response to a letter sent in advance, the district official had procured accommodation for us in a fair-sized private house, but two days later we had to move into another as our coolies were too many for the proprietor. The population of Lijiang consists chiefly of Naxi (Na-khi), who are the local tribes of Moso<sup>32</sup>, together with Chinese and Minjia, and also numerous representatives of other mountain peoples residing in the town. At the same time as our arrival

the Austrian explorer A.K. Gebauer<sup>33</sup> entered Lijiang from the opposite direction. He had unfortunately been unable to carry out his plans, as the official in Degen (Atuntze) — a man notorious for his hostility to foreigners — had prevented him from travelling to the Salween, and the official in Luchang had previously made it impossible for him to go any further upstream along that river. The information he gave me and his stroke of bad luck later became the inspiration for my most ambitious enterprise, a journey of which I still had no inkling at that time. We spent some pleasant hours together and replenished deficiencies in one another's kit. Then, one dark evening, a telegram from Kuning brought news of the assassination at Sarajevo on 28th June 1914. I knew Archduke Ferdinand tolerably well, having once escorted him for a day and half<sup>34</sup>, and it was certainly a good thing that he never came to power, but the circumstances of his murder were such that we could not but fear for the consequences. I met Père E. Monbeig, who was journeying to Kangding (Tatsien-lu) to make enquiries into the death of his brother, also well known as a botanist, who had recently been murdered on the road from there to Batang. He too gave me useful information, and, two years afterwards, reminded me that I had predicted the outbreak of war to him at our meeting. Li had a fight with a couple of soldiers over a woman and got badly beaten up.

We received valuable help from the Evangelical missionary A. Kok, a Dutch citizen who was working here with his wife and two deaconesses. During Kok's negotiations with the general, who finally gave orders that the two soldiers should receive a severe flogging, the latter mentioned that President Yuan Shikai had just imposed a ban on cartography by Europeans and he accordingly attached a soldier to our household as a spy. His presence naturally did not deter me from carrying on my surveying and map making; all it achieved was that I worked more surreptitiously than before and took great pains not to comply with the general's request to notify him of my departure in advance.

<sup>33</sup> Having set out from Burma on 12 January 1914, Anton K. Gebauer travelled via Tengyueh (Tongchong) up the river Schwell (Longchuan Jiang), crossed the divide to the Salween and went upstream to Tachenka. From there he crossed to the Mekong, reaching Weihsu on 27 March. All the passes were blocked by snow, but in the early summer he travelled to Atendze (Degen), hoping to enter Tibet, but he was stopped by the Chinese. On the return journey he passed through the Lisu village of Akiako, later visited by Handel-Mazzetti, and crossed the Lanago pass to the Yangtze, arriving in Lijiang where he met Handel-Mazzetti. Leaving on 7 July, he returned via Tai to Tengyueh, where the British consul told him that war had been declared. After reentering Burma he was interned and spent the rest of the war in India, being repatriated in 1919. He brought back all his collections, including route surveys from Tachaulou on the Schwell to Lijiang. *Anzeiger der kaiserlichen Akad. in Wien*, 1914, 51, 101, 307 and 336. *Anzeiger der Akad. der Wissenschaften in Wien*, 1920, 57, 11.

<sup>34</sup> See biographical memoir, page ix.

<sup>30</sup> Jack, R. Logan, *The Back Blocks of China*, London, 1904.

<sup>31</sup> Usually rendered as Jade Dragon Mountain.

<sup>32</sup> Moso are now regarded as a local tribe of Naxi. Most of the Naxi live in or around Lijiang (S.G.H.).

Tibetan caravans — an impassable track — the most westerly Yi villages — alpine leafmould pastures — a camp among rhododendrons — far ranging views — flora of a 4450m summit

At last the tent arrived and, after further delay caused by deliberate stupidity on the part of Li, who detested camping, was actually delivered to the village. I made enquiries for a caravan of five pack animals for an excursion to the snow-clad mountain at the north-west end of the range beyond the Jinsha Jiang. Besides making a botanical reconnaissance, I hoped to check the geographical information obtained in 1914 during my journey across the Zhongdian highlands in the rain. It should have been possible to find some horses in Baisha, but the local mafus declared that even for a dollar a day they were unwilling to take service with a European, for they knew such men all too well: they had travelled with the Frenchman Peronne<sup>65</sup>, a musk trader from Dégên, and he had always been hitting them. I was unsuccessful in my attempts to persuade them that not all Europeans were alike and that I treated my men very well, provided that they did more or less what I wanted, but in the end — though of course not without still further delay — I found the necessary horses in Nguluke. Setting off on 19th June, I crossed the col above Ganhaizi, reached the river in one day and spent the night at Yulo<sup>66</sup>, the ferry station on the near side. Next morning the ferrymen kept me waiting on the bank for over an hour; they were on the far side, saw a caravan approaching and wanted to ferry it across the river before coming for me. We shouted and whistled in vain; however, now I knew that the ferry was operated at public expense, and I therefore gave them no tip and let them return with empty hands and downcast faces. This achieved the desired result, and on the return journey they attended to me with the utmost promptness. Travelling in the same direction as ourselves was a Tibetan caravan. They used the enforced rest to make tea on the sand beside the river; men and women, who both do exactly the same work, sat in circles round the kettle, singing, laughing and teasing one another. During their frolics a mafu wench, as tall as a beanpole, turned the drinking water pail upside down over her partner's head. In total contrast to the Chinese, who cannot work without grumbling, sulking and uttering unspeakably foul curses, the robust, shaggy and yet elastic figures of the Tibetans seemed to be bubbling over with joy of living. Whenever I met them on the road they always greeted me with a clumsy curtsy, their hands held palm upwards before their chests. In those districts I never encountered the mode of greeting — sticking out the tongue — usual further north, except on one occasion on the Lancang Jiang from a man who had

<sup>65</sup> Gustave (aka Gaston) Peronne, a musk trader, lived for over 20 years at Dégên (F. Kingdon Ward, *From China to Hkiam's Land*, London, 1924, p.93). J.W. Gregory met him there in 1922. (J.W. & C.J. Gregory, *To the Alps of Chinese Tibet*, London, 1923, p.205).

<sup>66</sup> At Yulo (5300 ft = 1920m) the trail turns at right angles down to the Yangtze where a flat-bottomed ferry crosses it to the hamlet of Ggo-lo' (Plate 114). (Rock, Vol. I, p.255).

probably come from there. The peaks were of course shrouded with mist, and enquiries regarding the correct route came up against the usual difficulties. Down here it was in any case useless to ask about a track up the mountain; however, if there were a track from Lendo<sup>70</sup>, the first village on the Zhongjiang He, leading over the range to Haba<sup>71</sup> — known to me from my travels the year before — then that must be the right approach. The people said there were two roads, a major and a minor, and the major road led over a mountain. I accordingly told my guide to follow that.

It led first into the great gorge of the Jinsha Jiang, high up above its left bank. The opposite side of the gorge was free from clouds for much of its height and offered magnificent views. If the track had curved to the left it would have taken me in the direction in which I wished to go, but presently it became clear that this was not the case, and people in the fields called to us that it would soon become too narrow for our loads. They were at once proved correct by the sight of one of the loads rolling down the hillside, though luckily it was rescued. This route through the river gorge to Dagu, though it did lead to Haba, was obviously of no use to me. I turned round and took the Zhongdian road. At Qiaotou<sup>72</sup> it crossed over to Lendo on the left side of the Zhongjiang He, and ran at first close to the river bank along vertical talus cliffs scooped out by the stream. In their lower parts the sides of this sparsely populated valley sloped steeply upwards, but higher up they flattened out, especially towards the southwest, forming a broad undulating wooded ridge about 3600m high, which separated it from the Jinsha Jiang running from south to north. Liso and Xifan lived there in small, widely scattered hamlets, but the Chinese were confined to solitary cottages down in the valley. At Meiziping the track climbed more than 100m up the valley side in steep zigzags. It descended again into a deeply cut lateral gorge and then more gradually down to the river. There was plainly no practicable route branching off to the right (north east) anywhere as far as Tuguancun, two days beyond Yulo. Since my journey along this route in 1914 a hostelry had been erected there, a small bamboo hut in which we spent the night. On the Hongshishao saddle, which we had to cross to reach Tuguancun from the river, we met a caravan which had stopped to rest, but the men advised us not to

<sup>70</sup> Probably a non-Chinese name (SGH).

<sup>71</sup> Handel-Mazzetti's name Tja-ta-shan can be traced to the unfamiliarity of the Naxi with the Chinese language. His guide, apparently ignorant of the real name of the mountain (Haba ndzher m-iv), and being close to a rather important village called Ch'iao-tou (Qiaotou) (bridge-head village), in which district the mountain is also situated, called it Ch'iao-tou shan, whence Tja-ta-shan. (Rock, Vol. I, p.255).

<sup>72</sup> There was a wooden bridge at Ch'iao-tou across the river Chung-chiang ho (Rock, Vol. I, page 256).

camp there because there were so many leeches. From the saddle I had a magnificent view — lasting just long enough to take a photograph — down the valley towards the western side of the two main peaks of the Yulong Shan, both capped with snow, but the mountain on this side of the Yangzi — my journey's goal — was hidden in mist.

Tuguancun was one of the most westerly Yi villages; it lay in a side valley which ran down from AJo and, after making a sharp bend which cut off the route over the Hongshishao saddle, debouched into the main Zhongjiang He valley close by. From Tuguancun there was a track leading to Bede; higher up it allegedly gave off a path to the snow-capped mountain. After some difficulty — and for a high price — we found a young man as a guide, as I was not willing to travel into unknown territory without one. The fields of the Yi — the first people to settle here — extended over low ridges separated by small streams. The burnt stumps of chopped down trees still projected above the ground and here and there a mighty trunk, too large to utilise or clear away, lay prostrate; between them grew oats, barley, buckwheat and potatoes, the main diet of the tribespeople, whose low-roofed one-roomed bamboo huts were scattered among them. Behind the last of the huts the track entered the forest, which at first consisted of pines. Even at this altitude the plant cover was splendid and colourful. There were several species of lady's slipper orchid and of *Roscoea*, together with *Nomocharis aperta*, which has large saucer-shaped drooping rose pink flowers, and other species of the lily family. Other noteworthy plants included *Stellera chamaejasme* and *Morina delavayi*. Growing on the trunks of the pines was an orange-yellow fungus (*Cryptosporus volvatus*), as glossy as if it had been varnished, reeking of the cheapest schnapps. The natives ate it raw. In moist places there were strips of "jungle" vegetation where the steep slippery track was sometimes almost totally blocked by fallen bamboos and tree trunks, which gave the pack animals much trouble. Then it came out on to open sward gay with flowers of almost unparalleled splendour, in particular the deep rose-pink hemispherical umbels of *Androsace spinulifera* covering large patches, while *Veratilla bailonii* had just opened its green flowers in dense panicles. On last year's dead stalks I collected two species of minute fungi. We stopped for our midday rest in an unoccupied shepherd's hut in a pine grove, and as soon as I had devoured the meal I stood up and began to scour the mountainside above us. Wherever it had found lodgement on the slopes, leaf mould had accumulated and on it grew a plant community, for which I coined the name "leafmould pasture"<sup>73</sup>. The brown topsoil consisted of weathered plant remains, roots and rootstocks, with leaves and especially the leaf sheaths which envelop the living stems and form a covering round the neck of the plant. On it grew dwarf shrubs, including *Berberis*

<sup>73</sup> "Moorland". The English phrase is taken from Handel-Mazzetti's lecture *The Natural Habitats of Chinese Primulas*, given at the Fourth Primula Conference in London on 24th May, 1928. (J. Roy. Hort. Soc. 1929, 54, 51-62).

spp., honeysuckles, small rhododendrons and *Thermopsis alpinus* with large flowers like brimstone butterflies, all woven together in dense tangles. Among the shrubs various herbaceous perennials were now in flower, many of them so deeply rooted that it was hard work to dig them out intact. There were anemones, *Nomocharis lophophora*, *Potentilla stenophylla* with pinnate silvery leaves and the strange-looking *Magnifera caulescens Meconopsis pseudointegrifolia*<sup>74</sup> is a robust plant a metre in height with a thick hollow stem covered with rough golden hairs, and numerous drooping poppy-like sulphur yellow flowers on erect pedicels. *Primula szechuanica* has delightfully fragrant sulphur yellow flowers, resembling those of *P. sikkimensis* but with petals bent sharply backwards and pressed against the tube — a peculiarity seen in very few species of primula.

Soon we reached the crest<sup>75</sup>, from which we had a splendid vista towards the other side over the valley of the Bapaji, the little river running from Bede. Close to it lay Washua, its houses looking like toys. Twenty six km north-northeast was the arid bastion of Kudu (4700m), and to its right we gazed into the depths of the Yangzi gorge, from which the caves I had seen in 1914 stared up like two misshapen eyes. Beyond the gorge was the range extending from Xuechou Shan (4800m) to Hala Shan. It is nothing more than an offshoot from the second main range ending in the Yangzi loop. The main range itself is cut through by the Yangzi between Xuezhou Shan and Kudu. I certainly wanted to climb one of the peaks and photograph the full 360° panorama for my map, but on second thoughts I decided to play safe, so I set up my camera on the pass and exposed a few plates, my fingers numbed by the cold wind. Unfortunately, like many landscape photographs taken in 1915, they gave very poor results because the plates were old and stale. There was in fact a path leading to the broad ridge on the right, and I took it. The view was so glorious that even Li — no lover of mountains — was at first impressed, but now he sat wrapped in his Yi cloak shivering in the wind and complaining that he felt "beaucoup froid". However, when I suggested that sitting still was not the best way to keep warm he came after me, accompanied by Wu Suoling. After some two hours' march the track led into a hollow on the south west flank of the mountain, where I pitched camp in a delightful little spot beside a spring at 4175m (Fig.23). The ground was so boggy that I had to put flat stones under the tentpoles to prevent them from sinking into it. All round the tent were rhododendrons<sup>76</sup> with large white and pink flowers. Though gnarled and twisted, the bushes were quite tall, and their dead twigs were covered by

<sup>74</sup> Now included in *M. integrifolia*.

<sup>75</sup> This was presumably the pass shown on Handel-Mazzetti's map (4200m). Rock calls it Hsueh-men-Kan (13,800 ft = 4207m). Washua is 13 km distant from it.

<sup>76</sup> Handel-Mazzetti's photograph (Fig.23) shows rhododendrons about twice the height of his tent and the caption names them as *R. adenogynum*.

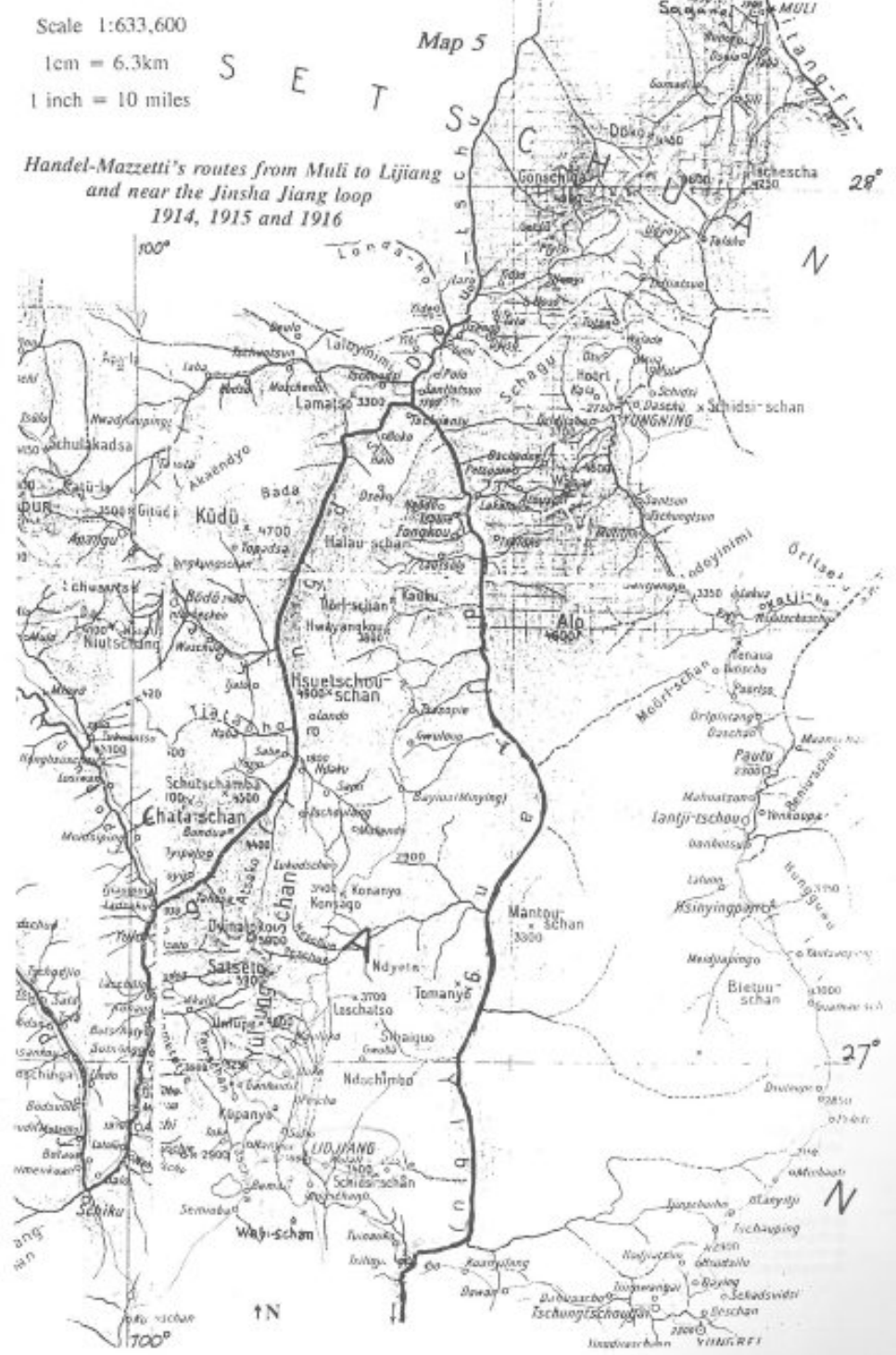
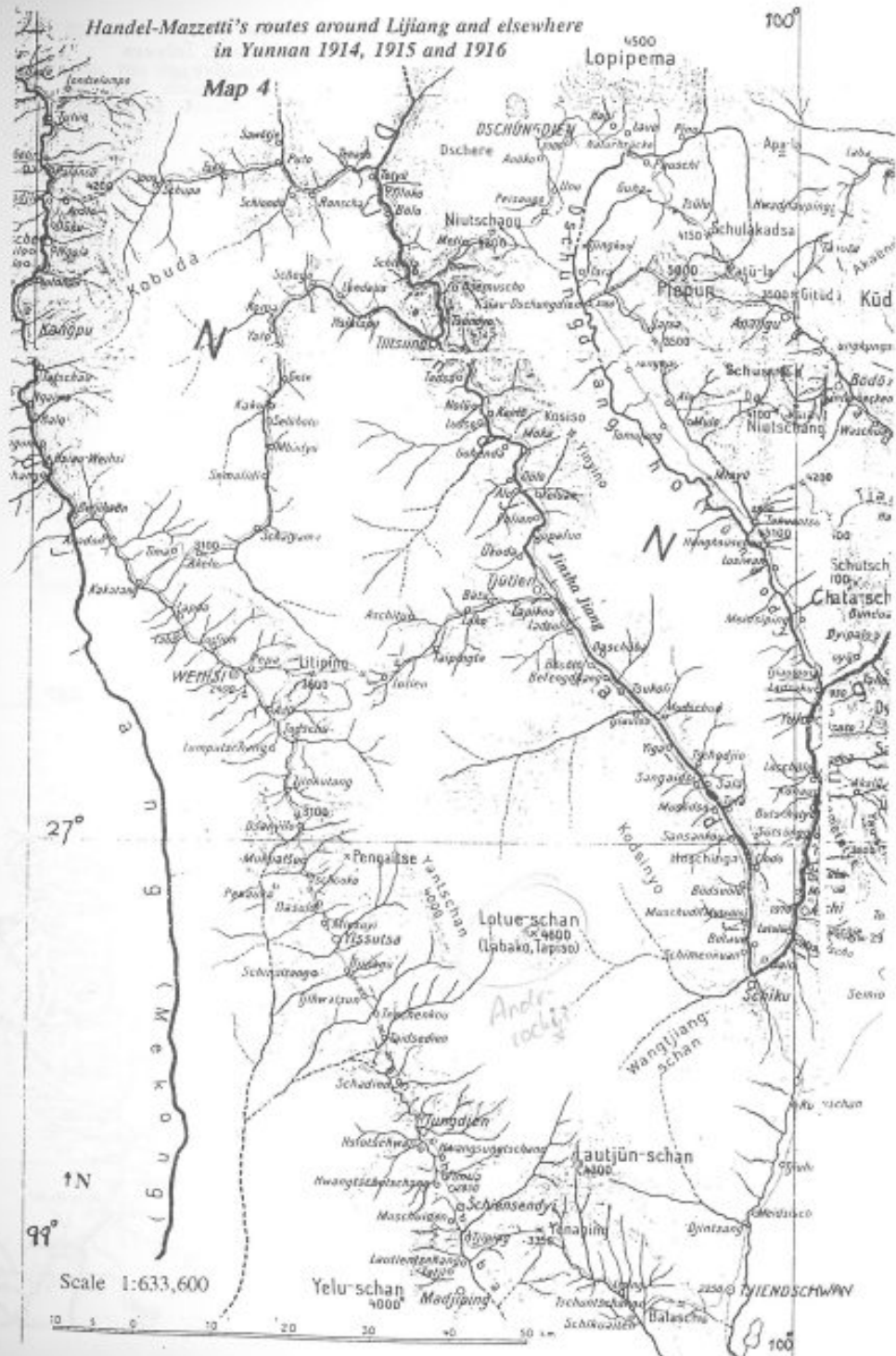




Fig.39  
Subalpine woodland  
in the Saoa-lumba (3450m).  
*Eutrema lancifolium*,  
*Cardamine polyphylla*;  
left: *Ribes* sp.,  
*Prunus cornuta*,  
*Betula utilis*  
with *Usnea longissima*.  
Chapter 24.



Fig.40 *Primula calliantha* beneath *Rhododendron beesianum*  
at 4200m near the Nisselaka pass. Chapter 24.



Fig.41  
*Primula agleniana*  
beneath  
cherry tanglewood  
(*Prunus mugus*)  
on the Nu Jiang  
(Salween)-Irrawaddy  
divide. Chapter 25.



Fig.42  
Temperate zone  
rain forest with  
*Strobilanthes* understorey  
at 2700m near Gongshan  
(Tschanmutong).  
*Acer caudatum*,  
*Ilex diphyrena*,  
*Sorbaria* sp.  
Chapter 25.