

A JOURNEY ALONG THE CHINESE-TIBETAN BORDER

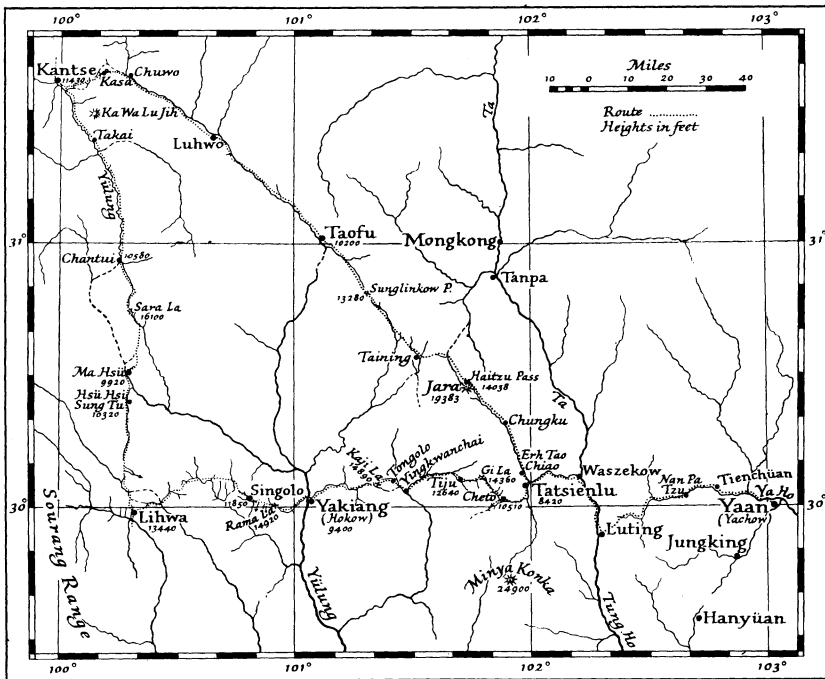
J. HANSON-LOWE

DURING the spring and early summer of 1937 I visited south-eastern Tibet to study geomorphological problems, and particularly the question of Pleistocene glaciation. The results of these investigations will be published later; this paper is merely a general description of the area traversed and the conditions of travel there. The investigation was carried out under a Government grant awarded to me by the Royal Society. I would like to acknowledge my indebtedness to Dr. J. S. Lee, of the Institute of Geology, Academia Sinica, who extended the greatest possible help, particularly in procuring special passports; to Mr. Floyd Johnson, of the S.D.A. Mission, who accompanied me; and to the Reverend and Mrs. Cunningham, of the China Inland Mission at Tatsienlu, whose help and interest can never be forgotten.

To the west of the fertile Red Basin of Szechwan lie the Great Snowy Mountains, the Ta Hsüeh Shan, with Minya Konka rising to nearly 25,000 feet. Still farther west, behind this formidable barrier and reached by passes several thousand feet high, stretches the high plateau of Sino-Tibet with its infinite grasslands, great canyons, and occasional mountain chains that vary its unending undulations. Although more than one route leads from Szechwan to the Tibetan lands, the best known, the most famous historically, and certainly the most practical is that from Yaan (Yachow) to Tatsienlu *via* Jungking, Hanyüan (Tsingki), and Luting. This is of course part of the official highway from Lhasa to Peiping along which tribute was brought to the Chinese emperors. To-day this is still the most significant commercial route with its ceaseless stream of coolies bearing enormous loads, and the track is known locally as the "Big Road." In the course of two journeys to Tatsienlu and back I had the choice of travelling *via* the "Big," the "New," and the "Small" roads. The first has frequently been described; it is well supplied with rather wretched inns, and food is generally plentiful; and it entails two passes of the order of 9000 feet. The New Road is shorter and has been somewhat favoured by the military; there is only one high pass to cross, but for nearly two days there are no inns and only the rarest habitation. The Small Road is a track that is relatively little known and merits a short description.

The first stage beyond Yaan is Tienchüan, reached by following the Ya valley upstream through Cretaceous sandstones and clays, now through a gorge, now through remarkable erosion terraces often under cultivation. Tienchüan lies on the Mo Shui, a tributary of the Ya. Beyond there neither our coolies nor the local inhabitants knew the second stage of our journey. The local authorities sought to make us change our intentions, return to Yaan, and take the Big Road; but my companion, Baron Conrad van der Bruggen, and I were adamant. In the end we were given a guard of ten soldiers and an officer in command, none of whom knew the route. We followed the Mo Shui upstream, along a practically continuous gorge through the country of the tribal Chiangs. Everywhere the slopes are very steep, and tiny cultivated strips are perched often very high, if it is by chance more level.

It is a well-wooded country, but many forest fires were seen. The first night was spent at Tzu Shih Kuan, the second at Nan Pa Tzu. After crossing a col the new valley entered was found to be equally gorge-like, greatly winding, and cutting into granite. We reached the village of Chang Ho Pa in the afternoon, a derelict place after the passage of the Communists. Beyond here there was virtually no cultivation; the stream flowed in a narrow canyon with overhanging rhododendrons in flower. We spent a night at Meng Kai Shan and followed the route up to the Ma An (Mangan) pass, some 10,000 feet high; here, in the teeth of a fierce wind, we enjoyed a magnificent view of the Great Snowy Range, from Minya Konka northwards. At this height there were



Sketch-map of Sikang and Szechwan to show Mr. Hanson-Lowe's route

but stunted trees and low bush, and broad patches of the winter's snow lay about us. Some four hours' descent took us to the great trench of the Tung valley, and at Luting the Big Road was reached. We bade farewell to our bodyguard and, after reaching Waszekow the following evening, ascended the savage gorge of the Ta the next day to Tatsienlu (Dardsendo), former capital of the independent Tibetan kingdom of Chiala.

Tatsienlu is a cosmopolitan border town, deeply set in the steep valley of the Ta. In the two narrow streets, clinging to the valley wall and in peril of slipping into the fierce waters of the Ta that foam between them, there is the strangest assortment of races: Chiangs, Hsifans, Chinese (many from remote Shensi), Chiala Tibetans, and perhaps tribal Chiarongs. Here is the limit of

coolies' endurance; their enormous packs of tea are carried farther west, to higher altitudes, on the backs of yak, whilst they themselves leave this mountain entrepôt with musk and skins, rhubarb and deers' horns, and other medicines for the millions to the east.

The previous summer I had noted cirques and hanging valleys in the vicinity of Cheto hamlet and Tiju, within a day and a half's journey from Tatsienlu. It had not then been possible to examine them, and a preliminary journey there was the first task. I am much indebted to van der Bruggen for practical help on this occasion. The journey was made on horseback, with a Tibetan guide.

At first the track follows upstream from Tatsienlu, but at Ssumachiao it leaves the Ta and follows a narrow canyon westwards to Cheto hamlet. After the bare slopes we had left behind these steep walls with conifers and scattered rhododendron, wild cherry, birch, and hazel were delightful. From Cheto one looked eastwards to the glaciers of the Tatsienlu peaks; to the south-west one could see the Pilgrims' route that encircles the Konka massif. Two days later we continued westwards to the Cheto pass (Gi La). Long before we reached it, at 14,360 feet, trees and shrubs had been left behind, and the track wound up a stony, barren waste to the deserted cirques where now a little winter snow may sometimes linger. From the pass one looks eastward to the snowy peaks of the Ta Hsüeh Shan; but westwards, 1500 feet below, commences the great rolling plateau of Kham, home of the Tibetan nomads with their millions of yak. On the western horizon the irregular summits of the Sourang range showed where Paan (Batang) lay. The summer before, the west-facing slopes below Cheto had been glorious with alpine flowers; now, after throwing the customary stones on to the labcha at the head of the pass, we descended to Tiju over unlovely turf, hummocky and split by frost.

By the side of the track a heap of stones reminded one of the rest-houses that once were placed along this Imperial highway, but that have not been able to withstand the Revolution, Tibetan uprisings, and the passage of the Communists. At sunset we reached Tiju, a simple inn set in a deep flat-floored valley where azaleas in bloom broke the monotony of the endless grass. We had intended spending the night at the inn, but it was so indescribably filthy—pitch dark inside and full of yak-dung smoke from the fire—that we both decided a night under the stars was preferable. So we fixed ourselves up in the courtyard, just out of reach of the dogs on the one side and the yaks' tongues on the other, for many cattle were herded for the night. Fortunately the temperature did not fall more than half a dozen degrees below freezing. Captain Gill, passing through, thus describes the inn: "Here we halted for breakfast, but it was such a miserable place that we at once passed a unanimous vote for a picnic."¹

After investigating the local hanging valleys we returned rapidly to Tatsienlu, where I was sorry to take leave of my companion, who was obliged hurriedly to return to the coast. I was most fortunate however in joining forces with Floyd Johnson, who also wished to see something of the plateau. It took nearly three weeks to get sufficient horses and mules to take us and our food. Indeed one wondered, with such an apparent plethora of animals, if the

¹ W. Gill, "The river of golden sand," p. 195. (London, 1880.)

Tatsienlu authorities were less favourable to travel in the interior than they smilingly would admit. Fortunately a Tibetan horse-owner owed Johnson a debt. If we used his animals the debt could be partly repaid, and so we were at last able to start. In addition to our tent we had brought provisions of rice, flour, and potatoes for a couple of months. In the larger settlements yak tongues, beef, and liver were often obtainable, but to get mutton it was apparently necessary to purchase the whole animal. Yak butter was easy to get, but it was rarely fresh and of the hirsute variety. Yak milk was available, but at times was difficult to obtain since some of the nomads believed that their animals would become diseased if their milk were given to foreigners. Where Chinese influence was marked chicken and eggs were to be had, but the eggs varied in price and quality, and would frequently rattle when shaken. Potatoes were sometimes obtainable, and we were able to lay in a good stock of imported sugar and peanuts at Lihwa. For cooking a pressure-cooker is essential, unless you wish to wait four hours for a stew and as many for a bowl of rice. There is plenty of fuel in the deep gorges, but on the plateau there is only dried yak dung.

Chinese currency is valueless except at the few post-offices maintained by the Chinese, and purchase is by barter or the rupee, then worth about 6½*d.* As there is no coin of less value than the silver rupee, the Tibetan has no hesitation in cutting one in halves. For the foreigner not out to barter, the marketing question resolves itself into how much can be bought for a rupee, rather than into how much must be given for a certain amount.

Once the stone bridge above Tatsienlu was crossed we were in territory where Chinese are few and where the nomad and lama are almost the sole folk met with; ethnologically the boundary with Tibet is the Tung river. Camp was pitched at Cheto: the night was perfect, with the Tatsienlu peaks showing faintly in the light of an early moon. From Cheto we again reached Tiju, where we camped for the night, and so continued for two days to a camping-place not far below the summit of the Kaji La, *via* Nawashi, Yingkwanchai and Tongolo, and past scattered Tibetan dwellings and fewer trees, wild gooseberry bushes and startled marmots, solitary chörten and despoiled dumps of auriferous gravels. From the Kaji La (14,890 feet) there should be a magnificent panorama, to the north-east and south-east, of snowy peaks from Jara to Minya Konka; but clouds hid the horizon, and shortly afterwards it began to snow. As it did so a Tibetan rode towards us over the pass, with rifle and mail-bag, singing gaily. His song had the wide, leaping intervals characteristic of Tibetan melody, in which, although a diatonic flavour is apparent, the final note, prolonged for several seconds, seems quite unrelated in key.

Beyond the pass the route led into a deeply incised valley, first through a rhododendron zone and, lower down, into magnificent spruce forest with lovely cones of maroon or mist-veiled indigo. Where fire had destroyed the spruce birch tended to replace it. Lower down came sycamores and ilex. At 12,140 feet patches of cultivation were seen, with barley, oats, and potatoes. Wild roses were common and tiny orchids abounded. After camping for the night we continued downstream; the valley walls, still very steep, were now bare and dry, with coarse grass and low, sparse bushes. These conditions



Tatsienlu



Loading yaks with tea at Tatsienlu



Tibetan house and defence tower near Yakiang



Disembarking on the west bank of the Yülung at Yakiang

extended to the junction with the great Yülung river at Yakiang (Hokow or Nyagika). In parenthesis it may be mentioned that the above vegetation zones are characteristic of all the deep valleys I traversed.

Yakiang clings to a ledge on the rocky walls of the Yülung gorge, almost slipping into the turbulent waters. Here we pitched our tent on a pebble-and-boulder beach, and spent a good deal of the night trying to keep it up in a fierce wind that rushed through the canyon. The next morning men, baggage, horses, and mules crossed the Yülung, a passage that has its risks, since a few days later this very boat sank in the rapids, all but two being drowned. We were now accompanied by two Tibetan guards armed against robbers, who are quite common in Kham. They wanted, once we were well away from Yakiang, to have the whole of their fee immediately. This was rather awkward, since we did not know how far they were to be trusted. Boldly we advanced a portion only, and there was no more trouble.

The route led up a forested valley where we camped for the night; the upper part of the valley was almost wholly in grass: we had again reached the plateau. We crossed the Rama La (14,920 feet), and after many miles of rolling upland again descended to Singolo, a tiny hamlet in a broad, flat-floored valley. The next morning it was necessary to exchange our guards for others from the local Tibetan chieftain, or *Tu Se*.

His fortress was impressive: a great three-storied building of stone and wood, with minute windows, and flanked by numerous chörten. Entering the gate we first crossed an untidy courtyard wild with murderous Tibetan dogs which, like their Mongolian brethren, will tear your throat out if you venture on their master's premises, and yet will slink away with tails between their legs when met with in the street. Passing in darkness through the stables we climbed rough stairs to the granary, and then up further steps to a narrow landing overlooking a square central space open to the sky. We were ushered into a great hall whose roof was supported by immense pillars of spruce. Here it was very dark, smoke-filled, and lit by the flames from a great stove set against the outer wall. On the wooden partition wall rude figures were carved and painted, chörten, swastikas, etc. Along the walls a continuous bench was placed, roughly upholstered, whilst before it was an equally long and narrow table in which, at intervals, were depressions containing shallow pans with charcoal fires used for keeping the tea hot. The tea itself was prepared at the great stove, opposite which was a second one, equally big but not then in use. On the low table were numerous piles of tsamba and butter for guests and inmates of the fortress. The *Tu Se* greeted us and showed us to the long seat. He was a tall, striking man, rather handsome and with long uncombed hair, dressed in a bluish-purple Tibetan cloak, high Tibetan boots, and girdled by a belt from which the inevitable knife and tinder-pouch were hanging. He wore immense rings on his fingers with stones of red coral and pale blue turquoise; from his ears hung others equally big.

We were offered buttered tea and tsamba, and in our turn offered a cloth-bound book, printed in Tibetan at Shanghai, and with endless illustrations, many in colour. With this he was obviously delighted. A few moments later we were groping our way through the smoke, past glimmering ladles of brass

that hung in great numbers on the wall, and so into the brilliance of the morning sunshine. The chief accompanied us to the very gate, smiling and indicating a stalwart guard of three.

The normal route to Lihwa (Litang) was dangerous on account of the banditry for which Kham is famed. We took a slightly longer way and after two days' travel over the grasslands reached one of the highest settlements in the world, and pitched camp near the yamen at 13,440 feet above sea-level. Lihwa lies on a sandstone spur above an elongated plain several kilometres broad, on the opposite side of which rise low granite mountains once glaciated. The essential Lihwa is the lamasery with its 3700 lamas and drabas. The town consists of a single line of hovels stretching down the spur and sheltering some 750 inhabitants. Below the town lie the ruins of a great fortress that belonged to the princes of Litang. A more unpleasant locality for a settlement would be hard to find, with the treeless, often bare, landscape, the amazingly rapid temperature changes, the high winds and dust, the frequent lashing hail in summer and the exacerbating effects of high altitude. The inhabitants throw their refuse out of the back door so that the town is almost completely surrounded by garbage dumps, which the 24th Army was endeavouring to beautify by constructing walks and pleasantries upon them. This part of Tibet is nominally under Chinese control, and the town has a Chinese garrison and magistrate. But control is not easy, and a state of compromise actually exists. For this reason we found it most difficult to get northwards from Lihwa, the magistrate doing his best to persuade us to return to Tatsienlu. Two powerful *Tu Se* held sway between Lihwa and Chantui (Chanhoa); if a Chinese guard were sent with us we should all certainly be robbed and probably lose our lives. He pointed out that a Chinese magistrate was forced to make friends with the strongest of the local *Tu Se* and so enjoyed very strictly limited power. Even the Reincarnation at the Lamasery could give no guarantee of safe passage. Neither of us carried any firearms whatsoever, and the only solution was to get into touch with the *Tu Se* and arrange to pay them tribute, if they would take it, in return for safe convoy. This caused much delay but gave us time to see the town and locality.

The lamasery, built of wood and stone with cupolas of gold, and with its weather-beaten prayer-flags, dingy halls of worship with faded images and banners, prayer-wheels, its all-pervading odour of rancid butter, and its inmates themselves in their filthy red robes, certainly enthralled the imagination. Although hated by the valley farmers and nomads the lamas control Tibet, and they are so suspicious of foreigners, and so conservative, that the smallest degree of modernization would seem impossible. Early in the day they pray and meditate; afterwards they stroll about in little groups, buying and selling horses, or doing other trading.

Fortunately we were invited to meet the head Lama, known to the western world as a Living Buddha. Crossing the courtyard, we were shown up a rough and rickety stairway with a loose yak-hair rope for banisters, and so along a dark passage-way into a gloomy chamber. We could make out the form of a Tibetan rising to greet us, and were motioned to sit on his left hand on a fine leopard skin spread on a long low seat with table and small brasier before it. We were offered aromatic tea in porcelain cups set on attractive

metal stands, fruit, and candied sugar. The Lama was a tall handsome man, some twenty-five years old, and sat with his back to a tiny window cross-legged on a pile of cushions. On the table before him juniper incense rose from a small censer set amid a clutter of books and writing materials. On the opposite side of the room a species of sideboard supported a central Laughing Buddha and a host of smaller effigies. On our host's left hand were more figures, two old-fashioned western clocks with glass sides, and six electric torches. On one wall hung numerous photographs of officials and lama dignitaries, and two large Chinese posters, one of Sun Yat-Sen, the other of Chiang Kai-Shek. Tibetan knives, a belt, and riding whips hung from a central wooden pillar. Lastly, in front of the small window facing us an inquisitive crowd of dim, peering forms were observing us. Our headman spoke to the Lama in Tibetan and translated his replies into Chinese; but both of us had the impression that the Lama could speak Chinese himself. He apologized for not inviting us to eat with him on the grounds that we should find the food unpalatable, but made us a present of sugar and dried jujubes, promising to send milk and eggs in the morning. He was then presented with illustrated books, and graciously gave us permission to photograph him. This was done the following morning; the courtyard having been emptied of the curious, a fine rug was spread there, with seat and leopard skin, and the Lama descended.

The local Chinese garrison was commanded by a very charming officer. We noted that, at a feast offered us at the yamen, he refused meat and wine. In the lamasery he had filled a whole chapel with lamps—wicks floating in melted yak butter—and symbolic mounds of buttered tsamba. At his quarters figures of Buddha hardly left room for a bowl of tea. Such extreme piety seemed to demand an explanation. Actually, he was making his position safer with the Lama by showing the religious excellences of which he was capable; he had certainly not forgotten that a large detachment of Chinese soldiers was then on its way to Lihwa. The arrival of these soldiers the night before we left was followed by fighting between the Tibetans and Chinese.

From Lihwa our route led northwards; following our Tibetan guards we travelled over the grasslands, now in a deep valley where gold-washing was in progress, now over a high pass. The first *Tu Se* to whom tribute was due lived in a small settlement not far from the head of a deeply incised tributary of the Yülung. He was the proud possessor of a western bed, a witness to the wrecked and plundered missionary hospital at Paan. He was most anxious that his photograph be taken, seated on his bed and surrounded by specimens of Victorian cheap glassware and pottery. Guards were exchanged and we set off in the morning down the same valley, thick with spruce and gay with wild flowers. A few strips of cultivation were seen, with barley growing, at 12,570 feet. That evening, after passing an enormous manidrombo, at least some 300 yards long, we reached Hsü Hsi Sung Tu, with its large fortress. After a vicious downpour of hail we camped, and were visited by the local *Tu Se*. He was a saturnine individual who, sitting gravely in our tent, suddenly produced an alarm clock from his gown. This looked like a feat of prestidigitation, to impress us; actually, the

alarm refused to function. My companion soon fixed it. Without uttering a word in reply the *Tu Se* produced just as suddenly a small musical-box, which also refused to perform. This was more of a problem to mend, but in twenty minutes we heard a crystal tinkling, and a charming Gallic melody filled the tent. To this *Tu Se* the second lot of tribute money was due, and we visited him at the fortress the next morning. A large and highly ornamental oriental clock boldly faced us as we entered the private apartments, a sight that made my companion blench slightly, but fortunately it was only there to be admired.

Later we reached the Yülung again, true daughter of the turbid Yangtze, and here incised many thousands of feet. A few miles farther up it was to be crossed by yak-skin coracle. The horses had to swim, being pelted with stones until they did, whilst we swept downstream at a good 20 miles an hour to Ma Hsü. The next morning we passed up the steepest tributary we had yet encountered and soon struck woodland, gay with wild roses, elderberry, wild cherry, and countless varieties of wild flowers. At the head of this long pull we passed through a forest of matted and tangled ilex from whose branches hung masses of grey-green moss. At last the grasslands were again reached, but not without the loss of our white horse, henceforward incapable of bearing a load. That night we camped at 14,980 feet; in a valley far below us great herds of yak pasturing looked like a battalion of strange beetles.

The next afternoon we crossed the Sara La (16,100 feet). Our men were on their knees and, we thought, praying to the deities of the mountain; actually they were gathering wild onions that abounded there. Glorious yellow *Meconopsis* grew too about these once glaciated highlands. After a short but lashing downpour of hail we entered a further deeply incised tributary of the Yülung, and camped shortly after the spruce belt had been entered. The hail and thunderstorms we encountered during the whole journey were many. At Lihwa the wind one night of storm had been so great that our tent, in spite of all our efforts, had been blown over our heads.

Crossing a Tibetan cantilever bridge over the Yülung, the next afternoon, we reached Chantui (Chanhwa), and camped under the ruins of the great fortress. After lunching with the magistrate we watched Tibetan women dancing. The dancers formed two semicircles each moving independently in a ring, so that one semicircle would pass the other at intervals. As they moved they made intricate foot and arm movements, waving ceremonial *katas* (silk strips), but never making abrupt movements. They sang a song with a great number of verses with a strongly modal flavour. The wide intervals were not so marked, but the long pauses on final notes were again characteristic.

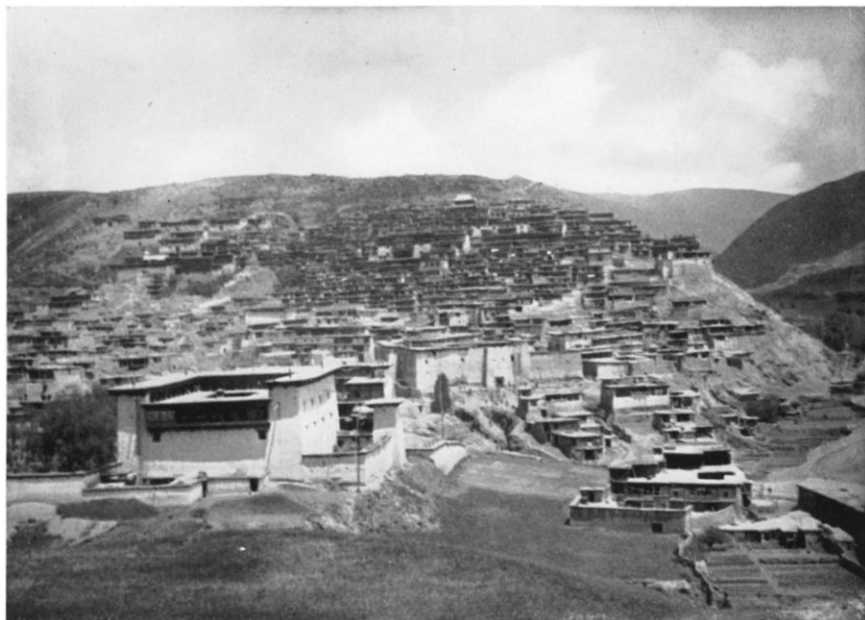
Our route now led up the Yülung itself. The strain of the journey was beginning to tell on the mules, and we applied for *ula*. This system of animal hire, instituted in Tibet in Imperial times, was originally intended for officials. Now it has fallen into abuse and its granting depends on the whim of the local authorities. The original idea was that the Tibetans should supply animals and, in return, a small sum of money was given them, although the greater part of the fee took the form of a remission of part of the taxes. At first this system caused us much delay; at the end of each stage, sometimes only a few



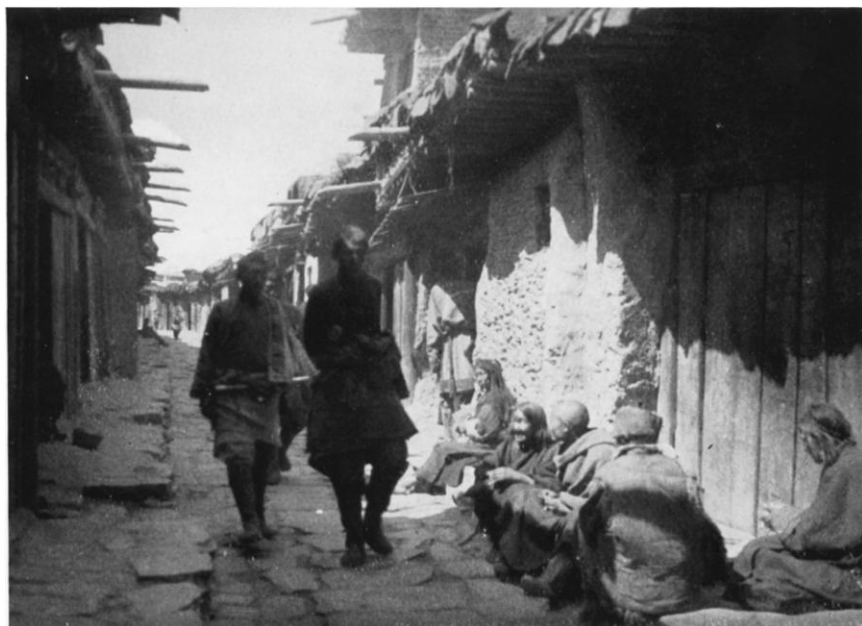
Jara



The Yülung gorge below Ma Hsü



The lamasery at Kantse



Tibetans in the main street of Lihwa

miles, the ula-owner would be away, or would have to chase after his animals, or even we should have to be content with riding yaks, with a single rope through their noses as a rein. At times there were no animals available and we had to wait till there were (no one was willing to lose a chance of tax remission), and the discussions hindered and irritated us. On the third day things improved and we had not to change more than twice a day.

Very striking high-level erosion terraces are to be seen in this part of the Yülung as well as low-level aggradational terraces. At Cha Na the Tibetans sought to prevent us from camping at what seemed an excellent spot, saying that an evil spirit lived there: when the tent pegs were driven in he would awake and we should be stricken with illness. Actually the place was very marshy and not unlikely to give rheumatism to those who stayed long.

At Takai there is a large lamasery. Here we found it much cooler, being not so far from the beautiful snow-clad summit of Ka Wa Lu Jih and its attendant peaks. Highly religious lamas are able to observe a black lion that at times chases around the peak. Two days later we reached Kantse. The Yülung gorge had been left at noon, and the route led across a level plain, rather broad, with the braided Yülung clinging to the southern edge. In the distance to the south-west were snow-clad limestone mountains. Camp was pitched at 11,430 feet in a little grove below the lamasery. Here there are some two thousand lamas and drabas, but in spite of the outwardly attractive appearance of the lamasery, with its flat roofs so reminiscent of Algiers, and its golden spires, the interior is extremely shabby and dirty. The place is a gigantic rabbit-warren of filthy, muddy passage-ways, dog haunted, off which small doors lead into the lamas' quarters. In a small courtyard a couple of lamas were practising some steps for the devil-dances; Tibetan women were bearing great wooden pitchers of water; tattered and discoloured prayer-flags hung in a motionless air. The town is fairly clean since the Chinese have brought their New Life Movement here. There are some fifty or sixty Chinese families and some four hundred and forty-five Tibetan ones. The magistrate invited us to an *al fresco* luncheon in our little grove, although it is most unusual for the Chinese to eat in the open, especially at a feast.

After a few days at Kantse we left for Taofu. At first the route led eastwards across the treeless plain where thousands of little tailless rats scampered before our mules and where peonies were numerous. In a deluge of rain and sleet we crossed the Lukwo Liangtze pass and so down towards Ka Sha lamasery, wall-girt, beside a little lake. Here cultivation started, and there were fields of barley, peas, and mustard for oil. After camping at Chuwo we followed the Lu river downstream for three days. This is gorge-like only in sections, and bears no resemblance to the great Yülung. A twelve and a half hours' stage was made to Luhwo, where a great lamasery lies 1000 feet above the river. The chief lama there is a man of progressive tendencies and, according to local talk, would like to leave his position and take up a western type of life. The Chinese are restraining him owing to his political and administrative capabilities. Some way below Luhwo the valley broadens out and the river flows in a braided course. From here as far as the Taofu region, and even to Taining, striking earthquake rents are seen everywhere, memorials

of the great quake of 1918 and of the even more disastrous one in 1923. A further point of interest is that here, as well as at Kantse, loess is much in evidence, at times *in situ* but more often rewashed, or otherwise *remanié*. Calcareous concretions were found in the loess at Kantse.

Again the valley narrowed to a gorge and once more widening somewhat led to Taofu, 10,200 feet above the sea. Here we were the guests of Father Doublet, who for years has been in charge of this outpost of the Catholic Church. The passage of the Communists had scourged the country; thousands of Tibetans, tribespeople, and Chinese had been butchered; settlements were burnt and all food eaten. Naturally, there were no crops in 1936 and famine was rampant. In the tribal areas of Hsiu Chin, Tanpa, and Mongkong conditions forced the natives to cannibalism.

From Taofu to Taining is normally two stages, but it was not possible to stay the night at Kwan Chai Tzu owing to the bandits which then infested that halfway halt. We therefore did an easy stage the first day and a gruelling one the second. Until 9 a.m. on the second day, when the Sunglingkow pass was crossed at 13,280 feet, we ascended a wooded valley. Spruce and scrub ilex were common, and wild roses, strawberries, and wild currant bushes gave variety. It is worth mentioning that the present topography, in the region traversed, makes for the greatest contrasts in insolation, exposure to wind, duration of snow-cover, amount of precipitation, rapidity of run-off, etc., in areas separated from each other often by a few tens of metres. These contrasts are clearly marked in the vegetation: one side of a valley, usually that facing north, will be clad with magnificent conifers; at the same elevation, but on the opposite side, there will probably be but scattered ilex. But let the valley change, even temporarily, its direction, and the vegetation types reverse sides.

On the second day after leaving Taofu the watershed between the Tung and Yülung rivers was crossed, an area with great earthquake cracks, and Taining was reached. Shortly before reaching this settlement a magnificent evening view of the Minya Konka complex was enjoyed, the great mountain rising on the south-eastern horizon, whilst right ahead of us, very near, was the snowy glory of Jara. Well before noon the next day a pass of no great height was crossed and, after much delay, for the Tibetans had let the horses stray out of sight during the lunch halt, we reached a well-incised valley, timbered with conifers, birch, and ilex, and flowing from the direction of Jara. Further up this valley a perfect terminal moraine was examined at a height of 12,430 feet. High up numerous small corries were seen. Both features belong to a past glaciation, and the whole question of Pleistocene glaciation will be treated in a separate paper. Camp was pitched only a few kilometres from Jara, in a little wood and, the next morning, after investigating the local moraines, the steepish ascent was made to the Haitzu pass at 14,038 feet, beside Jara itself. On our right was an enormous morainic bank sheltering a small but beautiful bluish-green lake fed by a waterfall from the melting ice above. The route led past the mound, and after a stiff climb one reached an upland whose level nature was disturbed by the great morainic piles strewn about. All around were bare, glacially dissected summits, but snow and ice were observed on Jara alone. On the flattish upland two further

lakes were passed and, once over the Haitzu, through a zone of sparse azaleas and rhododendrons, the route led into a remarkably rectilinear valley, once glaciated. From there, past the hot springs of Chungku and Erh Tao Chiao, it took not much more than a day's travel to reach Tatsienlu once more. The first signs of cultivation were at Chungku, at 10,600 feet. At Erh Tao Chiao (c. 8000 feet) cultivation was varied; its crops can include wheat, barley, oats, cabbage, beans, peas, carrots, turnips, celery, even maize, buckwheat, and potatoes. Here moreover, on account of the sulphurous hot springs, the inhabitants of Tatsienlu have constructed a rough road to the hamlet, making it into a small spa. All day long the good folk of Tatsienlu were coming and going, the majority on foot, the wealthy in one of those three or four rickshaws so very recently arrived and still the wonder of the town, this little strip of road being the only place for miles where a rickshaw could travel.

Note on the sketch-map, p. 358.

The author's route as shown in the sketch-map is based on the work of H. C. Tan and C. Y. Lee, with additions, including heights, by the author. The rest of the map follows the New China Atlas, 1936.