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PEKING TO LHASA

(From the diaries of the late Brig.-Gen. George Pereira)

Major-General Sir Cecil Pereira

Read at the Meeting of the Society, 16 June 1924

I WELCOME this opportunity of giving a brief outline of some of my brother, Brigadier-General George Pereira's work. During the course of over twenty years of travel in China he had made many official reports, but with the exception of a few letters to newspapers, the general public knows nothing of his work and travels. It was his intention to have returned to England at the beginning of this year and write a record of his travels, but he was not spared to do this; the diaries and letters of his last journeys are now being edited and will shortly be published and will give a more detailed account than I can give in the limited time available for a lecture. I propose to-night to point out the routes followed by General Pereira in his last journeys, referring to a few places of particular interest, but to confine myself principally to the most important part of the journeys, from Tangar to Lhasa.

General Pereira started the Peking to Lhasa journey in February 1921 and passed through an area stricken by a big famine that affected parts of the provinces of Chihli, Western Shansi, and Honan. It was caused by a failure of the crops, and hundreds of thousands perished. Far more devastating are the floods that affect this area when the Yellow River breaks its embankment and the number of deaths runs into millions.

The Hwa Shan in Shensi Province was reached in April 1921; it is one of the five sacred mountains of China and has the finest scenery and is the hardest to climb of the five. It is a mountain of pinnacles and precipices, the five main pinnacles, some of which look inaccessible, being crowned with temples, and they are approached by steps cut in the rock with chains to assist the pilgrims up and down the steep sides. The highest pinnacles are over 8000 feet.

Sian, the capital of the Province of Shensi, was reached a few days later. Like the rest of China this province was in a state of civil war, the northern part being under control of the military governor and opposed by a party in the south under a Han Kin scholar, who was supported by the leader of the local brigands.

Not only are there internal dissensions in provinces, but many provinces are at war with one another. Then there is the curse of brigandage, which is widespread. In many cases the origin of the brigand bands is that soldiers have been left for months without pay or food and they have deserted, taking their arms and ammunition, and live by looting the countryside and caravans. The local authorities usually insisted on sending an escort with General Pereira, and he describes these escorts as being very useless. His caravan was only once attacked and the brigands were driven off without difficulty. As escort and brigands all fired in the air there were no casualties.

On July 19 General Pereira left Kiung-chow-ze for the Mu-p'ing district in Western Szechwan, a wild mountainous country covered with dense scrub and bamboo, except on the higher slopes, and uninhabited except for a few visiting wood-cutters and Chinese farmers. The shooting grounds were at altitudes between 7000 and 13,000 feet. The game comprises boar, bear, roe, leopard, giant pandar, pandar cat, serow wild dogs, and, on the highest ground, takin and blue sheep. The local hunters are useless; they are not keen, they know little of the habits of the game or where to find them, and this, combined with the thick jungle, made it purely a matter of luck if game was shot. General Pereira was particularly keen to get a giant pandar or pandar bear, as no European has ever shot one, but though he found traces of them he never actually saw one.

The physical exertion of climbing up very steep slopes and forcing a way through very dense bush was very great; climbs of 2000 feet or more being the general rule, and with the added discomfort of leeches, which are plentiful in places on the lower slopes. Having constantly to ford streams and negotiate slippery rocky surfaces, General Pereira discarded boots and wore native sandals, but they were not an entire success, as they do not protect the feet sufficiently, and a poisoned foot kept him in idleness at Teng-ch'e Kou for seven weeks.

As a reward for his labours General Pereira shot a serow and a pandar cat on his last trip. The cat is now in the British Natural History Museum at South Kensington. The weather conditions of cold and wet made a longer stay in the last hunting camp at an elevation of nearly 10,000 feet quite impossible. Heavy snow had fallen and there was every chance of the party being snowed up if they remained at that altitude.

As a result of having to walk 46 miles back to Teng-ch'e-Kou in deep snow, with the small protection afforded by sandals, General Pereira had four toes partially frostbitten on one foot, and from there he had to be carried in a chair to Chengtu, which he reached after seven days on November 14.

We now get to the important part of the journey. Tangar was reached on 10 April 1922, and it was here that the preparations for the journey to

Lhasa were made. Since Abbé Huc's journey seventy-six years previously, no European had reached Lhasa from the east. Many travellers had made the attempt—Mr. Sorenson and Madame Néel, a French lady, immediately previous to General Pereira's journey—they had all been turned back.

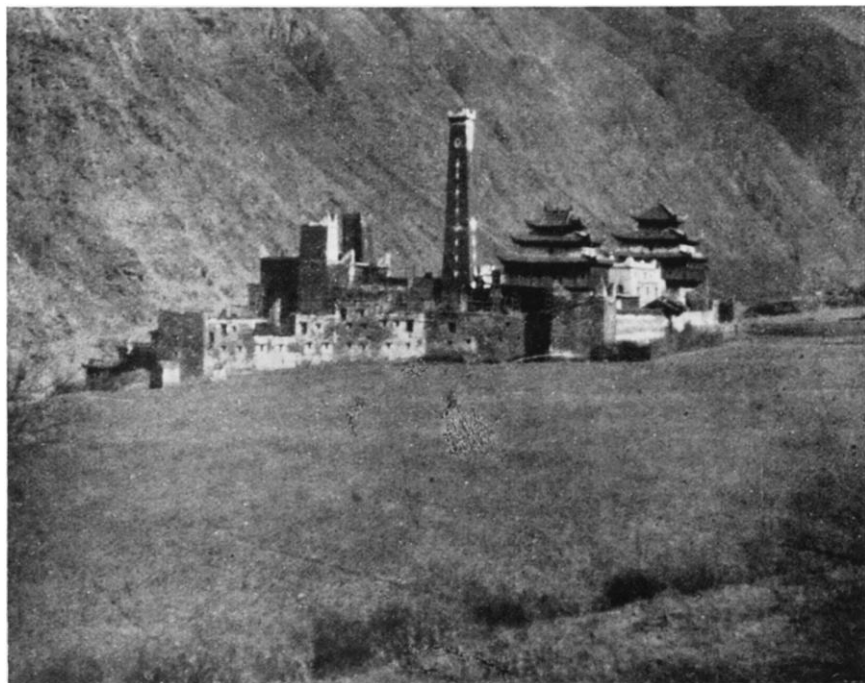
For many years it had been General Pereira's ambition to reach Lhasa from the east. A chance occurred when the Chinese conquered Tibet, as the Chinese Amban at Lhasa was a personal friend of his, but unfortunately he was not free at that time to make the attempt.

With the advent of the Chinese Republic in 1912, the Chinese garrison of Lhasa murdered the Amban; and, left without a leader, the Chinese troops were either massacred or driven beyond the Tang La Pass which is on the range which now constitutes the Chino-Tibetan frontier, or else driven south into Sikkim. The Chinese only retained their hold on the easterly Tibetan province, known as Koko Nor in Tibetan or Ch'inghai in Chinese, both names in English meaning "Blue Lake."

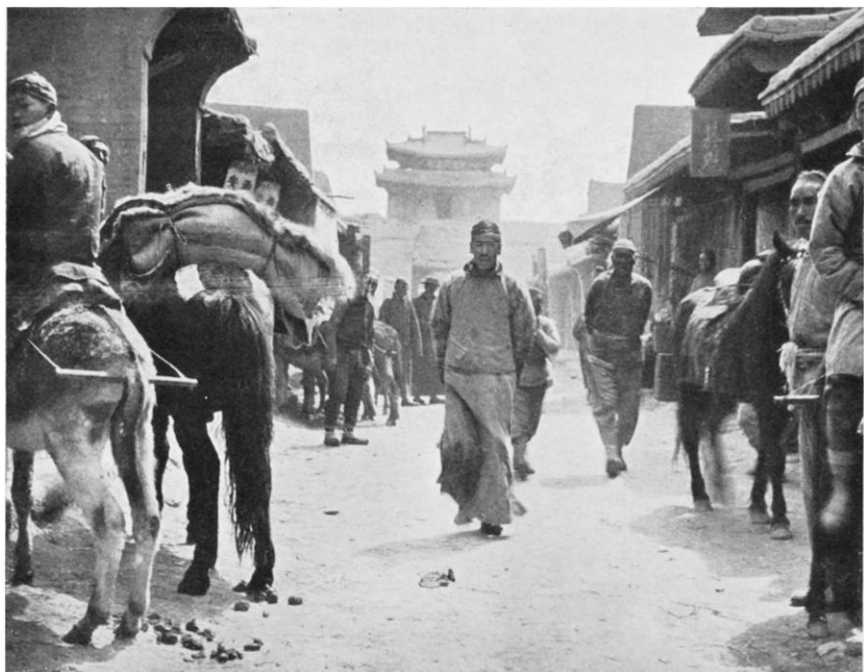
The roads leading from Tangar to Tibet had been closed for many years by Golok raids. The Goloks, a Tibetan tribe, were at one time very powerful, with their headquarters near Amné Machin. The Chinese had made several unsuccessful attempts to subdue them, but in 1921 a Chinese general, Ma Ch'i, tackled them and showed distinct genius. His successful attack on the Goloks is most like Gideon's successful attack on the Midianites, when he took three hundred Israelites and armed each man with a trumpet, a pitcher, and a torch which was concealed in the pitcher. They approached the Midianites after dark, and at a given signal they all sounded their trumpets, smashed their pitchers, and waved their torches, and in the confusion the Midianites slaughtered each other. The Chinese general knew that the Goloks always waited for the Chinese to attack them in some position selected in rocky precipitous mountains. As soon as they were attacked they descended upon their enemies and invariably inflicted a heavy defeat upon them. The Goloks were a fine fighting lot and his troops were not reliable. He therefore decided to rule out the fighting qualities of both sides, as they were so adverse to him, and substitute some tactics that would be wholly in his favour. He took some mountain guns with him and a fifth of his force was composed of buglers. When his force was drawn up under the Golok position the mounted guns opened with rapid fire and the buglers sounded their bugles and the Chinese troops charged. The din of the discharge of the guns echoing among the hills, the bursting of the shells among the rocks, and the terrific noise of many bugles struck the Goloks with panic; the Chinese were on them before they could recover, and hemmed in in their mountains a great part of their force was wiped out; the Chinese had practically no casualties. The general who can mystify, mislead and surprise his enemy and who destroys his



LOOKING ALONG RIDGE TO PEI-FENG



PALACE OF CHIEF OF OOJE; KWANCHAI



THE START FROM TANGAR



LOOKING SOUTH UP THE VALLEY TO HSI-FENG

fighting forces accomplishes everything necessary. The Chinese general had done all this, and had permanently opened the road to Lhasa.

But there were other difficulties, the chief one being how to get permission to enter Tibet. Without this permission there was no hope of accomplishing the journey. Travellers had always been turned back at the frontier. One of them, Mr. Sorenson, reached Tangar when General Pereira was there and gave him a lot of very useful information as to the routes he had traversed up to the Tibetan border, and made him an invaluable present, a boiling-point thermometer.

Father Schram, a Catholic missionary, accompanied General Pereira from his mission station at Sinning-fu to Tangar to help in arranging the caravan. He is a fluent Tibetan scholar and he wrote letters in Tibetan which were sent on ahead to important Tibetan officials asking for permission to cross the frontier. There was also a friend in headquarters who probably persuaded the Tibetan Government to give the permission, and the official sanction was received later on in the journey after further correspondence.

Then there were the actual difficulties of the road to be considered, high plateaus and lofty passes to be surmounted, accompanied possibly by great cold, strong winds, and deep snow. This entailed providing tents, one for himself and one for his followers, thick clothing and blankets. No food or forage was obtainable before reaching Jyekundo, this therefore had to be carried. The men's food consisted of Chinese vermicelli called kua-min, flour, butter, dates, and salt. Mr. Sorenson had crossed one long waterless stretch of country.

The next question was transport. General Pereira was badly advised, and he purchased his animals, eight riding horses and fifteen pack mules. We shall see later that this involved him in endless trouble and anxiety on the road during the first part of the journey. His troubles began with the buying. He describes how the wiles of the horse copers are just as prevalent at Tangar as they are in other parts of the world. As to the actual purchase, both in China and Tibet the buyer places his hand inside the loose sleeve of the seller and indicates his offer by the number of fingers he presses with, so that no one else knows the amount offered.

For the latter part of the journey he used the Tibetan "ula" system. Villages or districts in Tibet are bound to provide transport at fixed rates, the head man of the village being responsible for collecting the animals. Where there are no villages on the route there is a house for an official who requisitions the transport from the nomad caravans grazing in the district. To avoid delay in these cases, as animals may have to come from a considerable distance, word is sent on ahead of requirements.

Yaks are nearly always provided, but sometimes a few extremely small donkeys, and on one occasion General Pereira had a few natives to supplement the animals as a sufficient number were not available.

The diary constantly refers to the comfort and lack of anxiety when travelling with "ula" transport; the animals turn up punctually and there are no sick or tired animals. The lengths of the ula stages vary to meet local convenience, and they may be for half a day or for several days; they always stop short of a big river to save the difficulty of getting animals across. The yaks are pure bred, and very different from those found in the Tachienlu area, where the half-bred predominate. White is the predominant colour of the horses, but the most highly prized are dun horses with black tails.

"Ula" transport is very cheap. The cost of an average of twenty yaks from Jyekundo to Chamdo, a distance of 260 miles, was about £12. The cost from Chamdo to Lhasa worked out at £20 10s., about 8s. a mile for the whole caravan. The personnel of the caravan was picked up at Tangar; he had his boy and cook, and he engaged as interpreter a Chinese who spoke Tibetan, a head man, and four muleteers.

Before beginning an account of the journey I will refer to the difficulty of getting correct names for places. There is the double nomenclature over a great part of Tibet, where the Tibetans and Mongols roam over the same country; and in addition you have Chinese names for certain places. Where it is necessary to rely on the local pronunciation it is difficult to ensure accuracy; it was at times difficult to ascertain which were Tibetan and which were Mongol names as written down by previous travellers. Before leaving Chamdo, General Pereira got a complete list of the stages from Chamdo to Lhasa in Tibetan and in Chinese, and he constantly noted in his diary how, when compared with this list, the Abbé Huc was far more accurate than subsequent travellers or the Indian map.

By May 11 all was ready and the caravan started from Tangar, the first objective being Jyekundo. On May 12 they passed Sharakuto, the last Chinese town, and soon afterwards passed from Kansu into Ch'ing-hai Province. This was the old frontier between Tibet and China, the actual frontier now being the Tang La Range, south-west of Jyekundo.

The second camp was situated in typical Tibetan grassland scenery, hills and valleys, and large herds of yaks grazing in the distance, but not a house or tree to be seen.

The country presented no difficulties during the early stages of the journey, but the days' marches were arduous all the same. It was necessary to rouse the caravan at 4 a.m., and then wait about for two hours so that all was ready for the start at 6 a.m. For example, on May 13, they travelled 24 miles and reached camp, after travelling continuously, at 3 p.m., but some of the mules, including those with the tents, went astray and only reached camp at 5.20 p.m. Those who have had experience of caravan travel will remember that it takes a little while before the time spent between rousing the caravan and starting on the march gets speeded up to within reasonable limits, and it also takes several

days on the road before straggling and going astray is prevented. In fact, the first few days with a new caravan are always tiring and discouraging until everything becomes a matter of routine.

This stage on May 13 was across the large plain which is bounded on the north by the great Koko Nor Range. A little north of the route lay the small salt lake, Wayen Nor, which was formerly worked for salt. There are on this plain a few very small Chinese farming villages; the other inhabitants are the nomad Mongols and Tibetans with their flocks and herds.

Ch'a-pu-ch'a, a village of seventy-five Tibetan and nineteen Chinese families, was reached on May 15. No food—not even an egg—could be bought here.

On May 16, General Pereira was ahead of the bulk of his caravan, with his interpreter, and two mules with their drivers; as there were no signs of the rest of the caravan he sent his interpreter to find them. The interpreter found the caravan but lost him, and, consequently, General Pereira was left in the open foodless and resourceless. A good rest is always useful, and so, using the tent which was on one of the mules as a bed, and borrowing a rug and a coat from the muleteers, he put in eleven hours' sleep. They picked up the caravan the next morning, but he was practically foodless from breakfast one morning until 7.30 p.m. the next day.

Failure to realize that the track divided into two was the cause of this mishap: a longer route to the north with water all the way, which the interpreter knew, and a southern route, shorter, but with a long waterless stretch, which the rest of the caravan followed. Sorenson had been along the southern route when he tried to reach Lhasa.

With the exception of an occasional nomad camp with flocks and herds, a few gazelle, hares, and red-legged partridges, and duck on the lakes, there was very little life seen on these big plains. The grazing is good only in places, as there are large areas of poor soil bearing only scrub, and elsewhere there are sandy dunes.

On May 19 they crossed the Hu-k'a-ya-hu Pass, 12,000 feet, and entered the large Ta-ho-pa grass plain. The Ta Ho runs through a great canyon 600 feet deep, and above the river is a Chinese garrison of seventy Muhamadan soldiers, who lead a desolate life seeing only a few nomads and having an arduous descent and climb for every drop of water they require. No forage was available here, and the caravan was out of beans for the mules. There were a few trees in the Ta Ho Valley, the first trees seen since leaving the Sining Ho Valley.

The weather up till now had been warm during the day but cold at night; but on May 21, the day they left Ta-ho-pa, they were delayed by a snowstorm. However, by the evening all the snow had gone.

The mules had not thriven during the journey, and now with no forage for them they began to fail. The Tibetans in the camps near by

would not hire out their yaks, as there was no escort with the party. Owing to a scare of a raiding Golok party reported to be in the neighbourhood, the Tibetans were drawing close to Ta-ho-pa to be near the protection of the Chinese garrison. In the circumstances General Pereira decided to return to Ta-ho-pa to wait for an escort that General Ma-Ch'i had promised him, but which he had not waited for at Tangar. The escort arrived on May 25, and it consisted of thirty ununiformed men armed with rifles.

On May 25 they crossed the big Chasura Pass (14,600 feet, B.P.) through the Yalung Range, and crossing a plain with poor pasturage and soft going they camped at a height of 14,000 feet. The day had been dull and cloudy, and during the evening there was a strong west wind and sleet. In this area they saw herds of wild asses and occasionally wolves. The transport question was becoming very difficult, and it was necessary to reduce the loads on the mules, and to use some of the horses for transport. General Pereira found that steep climbs, or even long uphill gradients at these heights, were very trying.

On May 26 they crossed the Chu-ri or Chi-da Pass through the Chu-lung Range, 14,500 feet. The going was stony or boggy, the higher hills were snow-covered, and they descended through gloomy valleys to the sandy Luan-ch'uan Plain. It was on this day that he saw Amné Machin Peak, possibly 70 miles away to the south-east, when he was at an altitude of 13,000 feet. He estimated that the height must be at least 25,000 feet, and might be anything; it dwarfed all other mountains near it.

When General Pereira was lying ill at Calcutta at the end of his journey he was interviewed, and the optimistic reporter made him say that Amné Machin might be higher than Everest; but his studied opinion, based on what after all could only be the roughest of estimates made by a traveller who had seen many of the world's highest peaks, was as I have just stated.

On May 28 he crossed the Tung-ri Pass, 13,867 feet. All these passes so far were easy to cross, and there was no considerable climb to reach the summit. From the top he got a view of the beautiful blue Tung-ri-tso-nak, a Tibetan name meaning the Lake of 1000 hills, less poetically named by the Mongols the Butter Lake. At their camp this day they met the first people they had seen since leaving Ta-ho-pa. They found a large encampment of Tibetans of the Gaba tribe and a Muhamadan Tibetan merchant, by name Ma Hua, all bound for Jyekundo.

On May 29 they passed through a gap in the Ch'ang-shih-t'ou Shan Range, which appears to connect up with the range in which is Amné Machin. It was a gloomy day with strong winds and sleet during the afternoon, and the thermometer inside a tent was down to 38°. Several of General Pereira's mules were now absolutely done, and through the good offices of Ma Hua, the Tibetan merchant, he hired four yaks to

supplement his transport as far as Jyekundo. It was a great stroke of luck to have met the Tibetan caravan bound in the same direction, as there was no other possible means of getting the loads along.

The character of the country remained the same, large plains divided by mountain ranges with easy passes and usually very poor pasturage. On June 2 they crossed the West Malayi Pass, 14,500 feet, and later forded the Hwang Ho, or Yellow River, here only a small river 30 yards wide and 2 to 2½ feet deep.

There are not many Europeans who have forded it. The Tibetan name for it is Ma Chu; otherwise General Pereira said that, as far as he was aware, it is the only river in China that keeps its name throughout its course. He said that possibly the Han River kept one name, but he had not seen so much of it as of the Hwang Ho. The other big rivers have different names as they pass through different districts, and small rivers usually have a different name in each village that they pass. Ma Chu, the Tibetan name, means "Mother of Rivers."

The weather conditions were extremely remarkable, and General Pereira's diary often describes them as consisting of a collection of samples. The following describes the weather on one day. At noon, sunshine and summer, followed by a thunderstorm to the south and a hailstorm in camp; two hours later the wind veered round from north to south and there was a snowstorm; during the evening there was again a strong wind from the south and some sun.

The next stages continued across plains and through low passes, with nomad Tibetans, where there was good pasture; and on June 11, having passed over the Cha-la Shan Range, which is the divide between the Hwang Ho and the Yangtze, they camped on the Ch'a-la-ping Plateau at a height of over 15,000 feet. To the south-east lay a range of hills called Mu-mo-di-ya, shown on maps as Bayantukmu, which is possibly a Mongol name, as the Tibetans did not recognize it, neither did they recognize the name Oring Nor for the lake, another Mongol name. They pronounce Amné Machin, Anye Machin.

General Pereira stated that he was the only one in his caravan who appeared to be affected by the altitude, and that a climb of 200 or 300 feet made him gasp for breath, though he was not inconvenienced on the flat.

On June 13 they crossed the Ch'a-la Ya-kou, the highest point between Tangar and Jyekundo, and soon after forded the Ch'a Ho, a stream which eventually becomes the Yalung River.

There is a particular interest in this part of the journey from the fact that from not long before reaching Jyekundo to shortly after leaving Chamdo, the Hwang Ho, Yalung, Yangtze, Mekong, and Salween were all crossed, some of them insignificant streams at this stage, but the mighty Yangtze at Jyekundo is already a river of considerable dimensions.

Ju-chieh Gomba, or monastery, was reached on June 17. It is a

monastery of the Red Sect with one hundred lamas. These buildings and the barracks at Ta-ho-pa and Ch'a-pu-ch'a and the small villages near them were the only buildings seen since entering Tibet.

By this time the mules were at the end of their tether, and fortunately it was possible to make use of "ula" transport. Five yaks were engaged for the three stages to the Yangtze ferry near Jyekundo for 15 ch'ien for the lot = about 3s., which cannot be considered exorbitant as it works out at 1s. per 100 miles.

On June 19, near Hsiu Gomba, General Pereira notes that he came across scrub and small bushes 2 to 3 inches high, the first he had seen since leaving Ta-ho-pa, but no sign of a tree. He thought the absence of trees might be due to the severe winds that blow so constantly over this exposed area.

They were now down at 12,750 feet and a few miles from the Yangtze. He notes in his diary what a luxury it was to put up in a room in the monastery, and to be free of the gales and cold to which he was exposed in his tent, and he calls attention to a phrase in our military handbooks that "the best bivouac is not equal to the worst billet."

At Hsiu Gomba they halted a day for the hired yaks with the Tibetan caravan to catch them up. One of the loads contained 900 taels in silver and it was delivered perfectly intact.

The Hsiu Gomba, or monastery, is approached by a very narrow path winding up the hillside, and the monks' houses are built in tiers on uneven terraces, are made of mud, have flat roofs, and are painted grey with red and white borders. Below the monastery is a small village of twenty houses.

On June 22 they passed two more monasteries and a few Tibetan farms and crossed the Yangtze at the ferry. The river here is 80 yards wide, with some small rapids, it is muddy and has a strong current. Here the Chinese call it T'ung-t'ien Ho, or Prosperous Heavenly River. The ferry consisted of seven coracles paddled across by one or two men; the animals swam, most of them led by a rope from a coracle. The hired "ula," as is usual when a big river is reached, did not cross, and fresh "ula" was provided on the far side.

On June 23 they followed down the right bank of the Yangtze between hills rising 800 to 1500 feet above the river, passing a few small villages, and saw trees for the first time since leaving Ta-ho-pa—fir trees, willows and others. Jyekundo was reached during the afternoon.

The journey from Tangar had taken thirty-six stages, and the distance was 519 miles. The height of Jyekundo is 12,928 feet, it contains two hundred Tibetan families, and forty either Kansa Muhamadans or Chinese. It is a poor city of mud-built houses on a hillside above the Pa Chu, with a military camp and a Yamen in the outskirts.

The life of the town was best seen down by the river, where it breaks into several channels, forming green grassy islands, on which were pitched

some white tents belonging to Tibetan merchants. Hundreds of small naked boys were playing about in the warm sunshine, girls were playing with skipping ropes, there were groups by the roadside, chatting or turning prayer wheels, and women spinning cotton, altogether a gay and pleasing scene after several hundred miles of very sparsely inhabited country.

General Pereira met Mme. Néel, a French lady, at Jyekundo; she had then been five years in Tibet and China, and half the time was spent in studying in Kumbun Monastery. With her he visited the Jyeku Monastery, which has three hundred lamas of the Red Sect, whose abbot is appointed from a Sakya monastery south-west of Shigatse in Tibet, and is changed every two or three years.

The houses of all Sakya monasteries are painted grey, with red and white borders, except the house of the abbot and a few of the higher monks, which are painted red. It was the second day of the annual festival, and on arrival they found the lamas collected in the courtyard of the temple sitting in a circle round the abbot.

They were reciting prayers and ringing small bells, and General Pereira described them as a villainous-looking lot, than whom it would be difficult to find an uglier collection of men. From the courtyard the monks adjourned to the temple, and when they were all seated each received a large bowl of tsamba, a sort of barley soup with rancid butter floating on it. The principal monks were on raised stools, and received special condiments in addition to the pyramids of rice and rancid butter which were served with the tsamba. Two monks with thick ropes walked about and belaboured the shoulders of any monk caught talking, and for some time the noise of whacking predominated over all other sounds in the temple, one unlucky monk near General Pereira coming in for a special dose.

After the feast a crowd of Tibetans in the courtyard, chiefly beggars, were given the remains of the feast. The horrid smell of rancid butter, besides the dirt of the narrow streets on the hillside where the monastery is situated, made the whole place most unsavoury.

General Pereira left Jyekundo for Chamdo on July 10. He still had his four riding horses and one or two mules that had not been sold, but otherwise he relied entirely on "ula" transport. The country of plains had now been left behind for one of valleys and passes; but whereas the altitude soon after leaving Tangar until shortly before reaching Jyekundo had been over 13,000 feet the whole way, the altitude in the next section was getting lower until Chamdo, 10,500 feet, was reached.

On July 11 they crossed the Shung La, meaning "Middle Pass," the divide between the Yangtze and Mekong, the height of the pass being 15,724 feet, the highest point reached so far. It was a steep climb through bleak valleys and rugged mountains with some patches of snow, followed by an awful stony descent, eventually reaching the nice grass valley of the Jye Chu with good grazing and a wealth of wild flowers,

where there were several Tibetan camps. The length of the stage had been 21 miles, and very fatiguing. Camp was reached only at 7.15 p.m., and it meant a long interval between breakfast and the next meal. This, however, was not an exceptional stage, and once camp was reached there was the laborious work of plotting out the route and writing up the description of the day's route.

On July 12 the first tree region since Ta-ho-pa was met, and hills bordering the valleys were covered with fir trees, scrub, or grass. They passed Rashi Gomba, a monastery of a thousand monks, and later they crossed the Dze Chu, or Mekong, here 80 feet wide and with a very strong current. Only a single coracle was available to ferry them across.

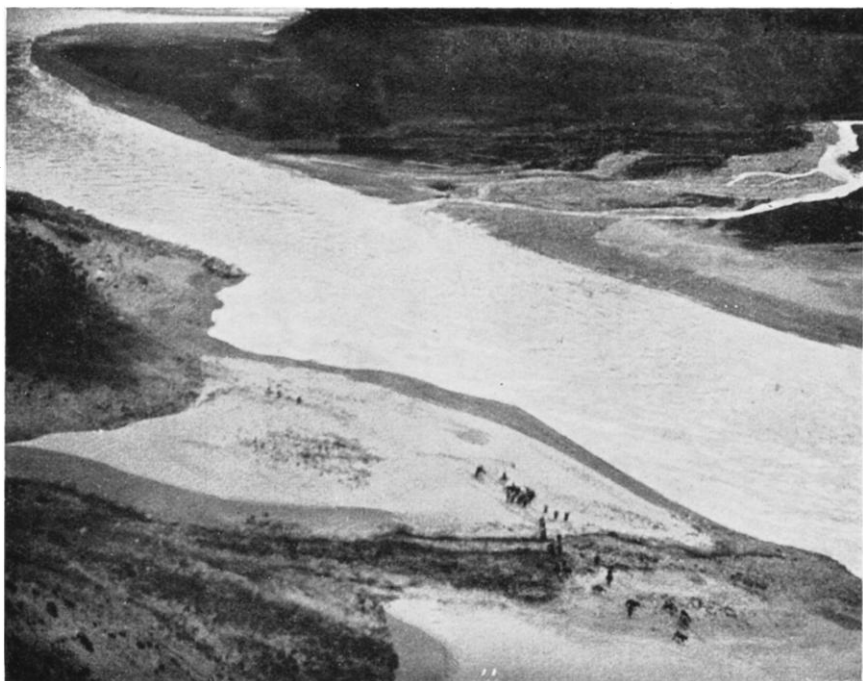
Göche Gomba, which has a small monastery, was reached on July 14. The various stages were very similar; the route lay through grass valleys, between hills rising from 500 to 1500 feet above the valley, sometimes fir-clad, sometimes grass. There were usually one or two passes through the mountain ranges to be crossed, the approaches and descents being generally through bleak valleys and over a boulder-strewn track, the ranges being rugged and rocky, and often of fantastic shapes. Many of the climbs or descents meant a rise or a drop of 2000 feet. Many of the lower valleys afforded good grazing and were covered with wild flowers. At the summits of the passes there were often extensive views over countless ranges, showing that the character of the country had entirely changed from that of the Tangar-Jyekundo section.

On July 16 the Mekong River was met again, and the route followed down its valley for 10 miles to the ferry. There were a few small villages with houses of mud and stone, and a few fields of barley still green but full-grown. The valley here runs between hills, rising to 600-700 feet above the river, and the width varies from a quarter to half a mile. There are many sandbanks with low bush. They crossed at the ferry, and again there was only one coracle to take them over. The river here was only 200 feet wide, but as after each journey the coracle had to be towed half a mile upstream, it took three hours for the caravan to cross. They encouraged the riding horses to swim across by stoning them.

On July 22 Tang-Kwa was reached, and early in the day the Chinese-Tibetan frontier was crossed; to the north is the Tibetan kingdom of Nang-chen under the Chinese, and south of the frontier the country is administered from Chamdo.

General Pereira met near here some Tibetan men whom one would liken to kangaroos, as they were carrying babies in their bosoms with the small infants' heads just peeping out.

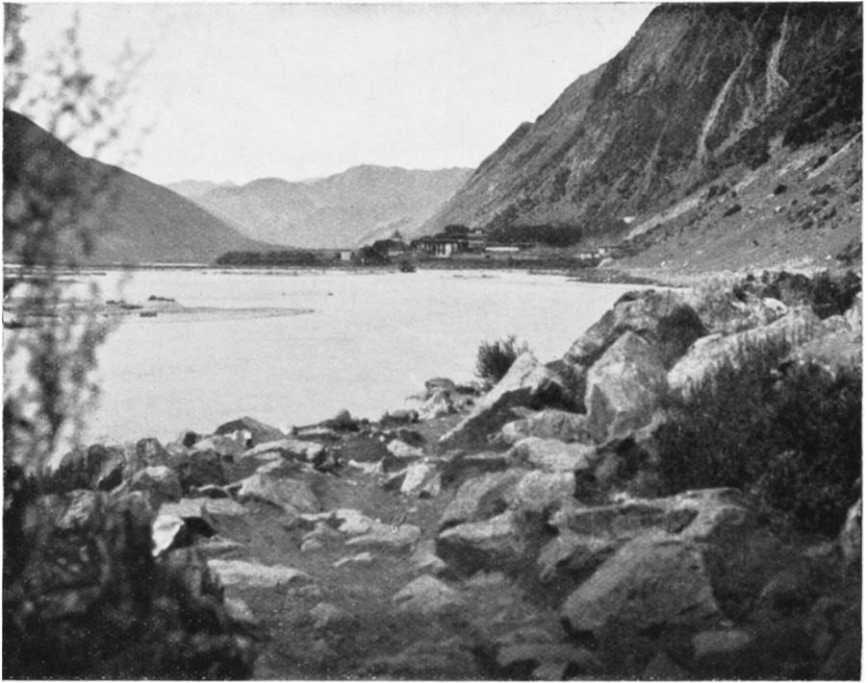
Jaraka, on the Ngom Chu, was reached on July 25, and a few miles before getting there they crossed the river by a bridge, consisting of four massive piers about 20 feet square, built of logs and stones; two of the piers are in the stream, with turret-like superstructures, and the roadway



THE CARAVAN BY THE YANGTZE



LOOKING DOWN TANG-KWA VALLEY



LOOKING N.N.W. TO PIENBAR



THE THREE-STORIED HOUSES IN WA-GE-WA

is of uneven planks. It is a wonder how they made the centre piers, as the river here is a raging torrent surging against them.

The Tibetan women in this area black their cheeks with grease, as mentioned by the Abbé Huc, and it does not add to their beauty. Wild cherries and peaches and gooseberries were not good to eat, but the wild strawberries found occasionally were excellent, and much larger than those found in China.

The villagers were all most friendly and extremely interested at seeing a European. As the caravan arrived they would troop out of the villages bowing and putting out their tongues, which has the reverse significance of what it has in Europe. They led the horses of General Pereira and his interpreter into the village, and the head man of the village bustled about to make things comfortable and to attend to the wants of the caravan.

The Tibetan houses are of mud and wattle, with uneven plank floors and log roofs which are not very waterproof. The windows occasionally have shutters, but have no paper to cover them as in China. Occasionally they are furnished with a low plank bed, stools, and rugs. When General Pereira availed himself of a room he always found it advisable to have the rugs removed. It was always a comfort to get a room instead of using a tent. There are no hens, and so eggs could not be got; milk was obtainable, but the cleanliness of the utensils in which it was kept was so doubtful that it was not sought after.

Chamdo was reached on July 28, and the whole town appeared to turn out to greet the caravan; at the stage before, General Pereira had been met by a Tibetan official to welcome him on behalf of the Siwala, the chief Tibetan official at Chamdo. Before reaching Chamdo the Ngom Chu was crossed by another fine bridge with five piers. Since entering Tibet the road had been well bridged.

It is about 260 miles from Jyekundo to Chamdo. On this journey they passed about six monasteries, all small except Rashi Gomba, and twenty-six villages of from one family to twenty-two families, but usually about six families. This is a main caravan route, and so it gives an idea of the small settled population. Of course the nomad population, with its need for good grazing, is more scattered, but the number of caravans met was quite small. A large English village would accommodate the total population met on this part of the journey, and if you scattered this population over the road between London and Newcastle, a similar distance, you would find the country a very lonely one, but as thickly populated as this part of Tibet.

Chamdo is on a little peninsula between two branches of the Mekong, in a valley surrounded by hills. When the Chinese ruled Tibet there were about three hundred families in the town and three thousand monks in the monastery, but during the fighting in 1912, when the Chinese were driven out, a great part of the town and most of the monastery were

destroyed. Now there are only one hundred and eighty families and very few Chinese and about four hundred monks in the monastery, part of which has been rebuilt.

Chamdo Province is governed by a lama with the title of Kalon Lama, and under him is a lesser official called the Siwala; a representative of the Dalai Lama, called the Drepon, commands the troops at Chamdo. Most of the troops had khaki jackets, and the words of command are in English, as they have a drill instructor who was trained at Darjeeling. More startling than hearing English words of command in this out-of-the-way place was to hear bagpipes; and at General Pereira's request one day the pipers played "Highland Laddie" very creditably.

General Pereira says that the tiny Tibetan children here are very jolly, dancing about and full of fun, but unluckily very dirty; the girls play shuttlecock, kicking it with their feet like the Chinese, and sometimes an expert will give a good exhibition, kicking it alternately with the front and back of the feet. Among the games played is stone-throwing to see who can throw the farthest.

The Tibetans are fond of flowers and have flowers in pots on their balconies; down by the river at Chamdo they have kitchen gardens with diminutive plots of cabbages, turnips, onions, and tobacco.

Whilst at Chamdo General Pereira's interpreter was taken ill and his face was covered with blotches; his Chinese boy said it must be smallpox, "t'ien-hua" or "heavenly flowers," as the Chinese call it, but it turned out to be a malady prevalent in this locality and not serious.

On September 3 a favourable reply was received from Lhasa to the letter sent from Tangar, and he started on the last section of the journey on September 6. The transport was eighteen "ula" yaks, or their equivalent, and a few riding horses.

For the first eight stages they followed the main Chamdo-Nagchuka road. Six weeks previously the Mekong had been exceptionally high, with rapid swollen waters, but now, though still a swift stream, the water had gone down a lot and the side streams were no longer fierce torrents. Two merchants, half-caste Chinese-Tibetans returning to Giamda, joined the caravan. The first day out from Chamdo they met a Tibetan woman carrying a letter from Lhasa from the Tsarong Shape, saying that General Pereira would be welcome at Lhasa and offering any assistance required, also stating that the telegraph at Lhasa was opened on August 3. An excellent English translation accompanied the letter. This friendly letter was indeed most welcome.

On September 7 some of the valleys were well wooded, chiefly spruce, and Namt'so La, 14,867 feet, was crossed after a very long and arduous climb. This range is not the Mekong-Salween divide. The natives all agree that the Dzer Chu joins the Mekong not far from Chamdo, though existing maps call it the Dzi Chu and generally show it as joining the Salween. Crossing the Namt'so La entailed a climb of 4000 feet, and

the long descent was by a track of large boulders or countless stones. The view from the top was over many ranges, some wooded, some bare. An 18-mile stage such as this at the high altitude called for considerable powers of endurance.

Ngemda was reached on September 8. Up to this General Pereira had at times followed for a short way or had crossed the routes of previous travellers—Major Bailey, Colonel Bower, Mr. Rockhill, Mr. Teichman, Colonel Kozloff and others. No European had been further west on this road since the journey of the Abbé Huc, although Mr. Coales of the English Consular Service had recently spent some time in Chamdo, and his excellent description of the town recently appeared in the *Society's Journal*.

The type of country was now entirely different from that of the earlier stages. Occasionally the valleys and hillsides were covered with spruce, maple, and acacia; sometimes they were grass-grown or covered with wild flowers, and the scenery was often very beautiful. At times the going was good, but often it was over very stony tracks. At Kama Sumdo there was a solitary house where the "ula" officials live, as there is no village for a long way and the "ula" has to be procured from the nomad tribes who are sometimes 20 or 30 miles away. Four young Tibetan girls making a pilgrimage to Lhasa joined the caravan here.

On September 10 there was a long stage of $24\frac{1}{2}$ miles to Meru Tanda through uninhabited country among bare hills, over a very stony track with $8\frac{1}{2}$ miles uphill to the top of the Mu La, 15,667 feet, the Salween-Mekong divide. Fresh "ula" which had come from 30 miles to the west was waiting here for the caravan. Only one house and a few tents were seen this day.

The stage on September 11 was 25 miles to Garmé. The Tibetans said it was an easy day, but it proved otherwise. The Tibetans are very good at geography, knowing the names of rivers and streams and where they flow; quite different from the Chinese, who are grossly ignorant and never know the name of a river. In Tibet the rivers do not change their names as they do in China; mountain ranges do, but the inhabitants know the names of the various sections.

The first 17 miles of the 25 was through almost uninhabited country. Five ridges were climbed, the highest and steepest being the Rab-che La, and they passed through high grass-covered hills, backed by rugged ranges. The last climb was over the Dung-re La, after going 15 miles; from it there was a beautiful view to the west down the Me-ru Valley, with three big monasteries high up on the hillside and many small villages down in the valley. Most of the hillsides and valleys were cultivated, and it looked more like China; it was the most fertile valley yet seen in Tibet. Forty miles W.N.W. there was a great snow-clad range called the Ture La running north and south, the only thoroughly snow-covered range yet seen with the exception of Amné Machin, and for a welcome change the hills

opened out to broader valleys. At Garmé, where they halted, there is a village of twenty-eight families and a garrison of two hundred and thirty soldiers, and it was strange at dusk to hear familiar English bugle-calls. The day's journey had been long and tiring.

Denchin was reached on September 13; a small village of twenty-three families, but an important place, as routes radiate from it north to Jyekundo, west to Nagchuka, and south to Shobando. It had been a fine warm day with hardly a cloud.

During his stay here General Pereira saw a specimen of Tibetan justice. Hearing the bugles sound the officers' call, he looked out of his window and saw a party of soldiers escorting an unfortunate lama to the outskirts of the village to undergo a sentence of having his right forefinger cut off. Later the soldiers returned headed by pipers playing "The Campbells are Coming," and behind them was the unhappy lama carried on a man's back. They sent round to General Pereira for medicine, and he provided boracic ointment and lint.

He had found the Tibetans a joyous race, always laughing but very servile. They always passed him anxiously, but if he nodded to them they beamed and put their tongues out. They have none of the tiresome Chinese etiquette, but they have an annoying habit of giving you presents and tipping your servants, all which generosity has to be returned.

General Pereira's stroll through the village of Denchin caused the greatest excitement, for all the inhabitants turned out and followed him, but not offensively like the Chinese. He described Denchin as being very prettily situated with lovely surroundings.

At Lachin, near the end of the next stage, he came upon many instances of stone posing, a favourite Buddhist devotion, presenting the most marvellous feats of equilibrium, sometimes with one stone, sometimes with three or four, and they seem to select the most impossible stones for this purpose. The same custom exists in China.

Forming piles of stones with prayer flags on the top is also a very prevalent custom. There is always a small one on the top of every pass, and it was these that General Pereira really appreciated, as they denoted the end of a generally arduous climb. Nearly every day there was some big pass to surmount with wonderful panoramic views from the top over bare, partially snow-covered hills in the distance, the lower hills generally covered with bush or fir trees.

Near the end of the stage on September 16, following a track along the hillside 800 feet above the valley, they got a wonderful view of the mighty Salween called in Tibet the Gia-mo-ngui Chu, coming in from the west, winding through a narrow valley between hills which rose 2000 feet above it. They had an extremely steep descent over stony and rocky ground to Zinda on the Salween, the height of which is 11,090 feet.

On September 17 they did 17 miles to Ru-a-tung, following the Salween all day, the path keeping mostly high up on the hillside, and at the end of the day's journey gradually descending to the river and across what for Tibet is a small plain with a monastery and about a dozen farms. They crossed the river by coracles, the horses swimming. The caravan had now crossed the Yangtze, Mekong, and Salween and various big tributaries and had forded the Yellow River and Yalung, and they were shortly approaching the basin of the Tsangpo or Brahmaputra. The Salween is full of fish, but the Tibetans, being Buddhists, do not catch them.

Shobando was reached on September 19; it is a comparatively large town of three hundred families, and there is a monastery of three hundred monks. The caravan, which up till now had been following a side route to Lhasa, joined the main route at Shobando, a dirty town with narrow winding streets, partly paved with big uneven cobbles. The houses are of mud and generally two-storied. The altitude of Shobando is 11,700 feet. There was a good variety of supplies here, turnips, lettuce, potatoes, eggs, butter, beef, and mutton.

From here on to Lhasa there are milestones called "melli"; the interval appears to be about 2000 paces.

Pien Ba was reached on September 23. It is the Pian Pa of Abbé Huc, who laughs at the Chinese for saying it is on the biggest plain in Inner Tibet, and says it is no plain at all; but General Pereira considered it the flattest piece of ground he had seen since leaving Jyekundo, though of course it does not compare with the great plains to the north.

On September 25 there was another hard stage of over 20 miles, over the Dor-ji La, 14,600 feet, as a preliminary to the Shiar-gung La. Following a snow-covered path they eventually came to a very steep ascent to the summit of the second pass. There were 2 or 3 inches of snow on the top and all the surrounding mountains were covered with snow, but as it had snowed two nights previously, it was impossible to tell if snow was normal up here or if all had fallen recently. There was a jumble of mountains all round, one towering peak to the south-west in shape like the Matterhorn, which must have been well over 18,000 feet.

The Shiar-gung La is the Salween-Tsangpo divide and is reckoned the worst pass on the road. Abbé Huc, who calls it M. Tanda, crossed it at the worst season, and gives a very graphic account of the difficulties that he encountered. The height of the pass is 16,528 feet. The descent was steeper than the climb, and they soon got out of snow, but the route in many places lay over huge boulders and stones and it was a relief when they reached a beautiful gorge all covered with scrub, where they camped at 5.30 p.m. Fortunately it had been a bright sunny day.

Judging from Abbé Huc's account of the stage to A-la-ja-gung on September 27 General Pereira expected to find the path high up on

narrow ledges with yawning precipices below, but he found nothing alarming, and said that unless you were bent on committing suicide you could hardly fall off the path except in a few places; but the road was shocking, and General Pereira says it was the worst he had ever met in 40,000 or 50,000 miles of travel in the Far East. There were compensations in the magnificent scenery of the Nok Chu defile with hills rising 2000 feet up on either side covered with fir trees. Often the path lay through delightful woods and there were some waterfalls descending from a great height. During the next stage to A-la-dor-ta the deep abysses which Abbé Huc said abounded were not met with. They had a chilly camp at the end of the stage at a height of 15,200 feet.

September 29, 18 miles to Sa-chu-ka. General Pereira said in his diary that this was the very worst stage he had ever done, owing to the appalling going. They at first followed the well-wooded Nok Chu valley for several miles and then travelled between barren, stony hills over the boulders and rocks that had fallen and rolled down into the valley. It was a regular sea of boulders; they eventually crossed the Nur-gung La. Unfortunately spirits of wine ran out and so no more boiling-point altitudes could be taken, but the altitude of this pass by aneroid was 16,800 feet, the highest point yet reached. Abbé Huc called this pass the Chorku La.

On reaching more level ground the route passed the beautiful blue Serpentine Lake, the Tso-dung-wu-nyi, a mile long and 300 yards at its widest point. The camp that evening was at 14,800 feet near the hot springs mentioned by Abbé Huc; it had been warm and sunny during the day, but very cold in a tent at night.

On September 30 they had an easy stage to Lhari-guo through narrow, barren valleys and easy going, and only one hill to cross.

This place is marked Lharung Giachug on the Indian map, and is called Lhari by Abbé Huc. It is a poor village of fifty families and a monastery of sixty monks, but is important, as several routes radiate from it. After ten very strenuous days a rest was taken here, and General Pereira enjoyed the comfort of a nice clean room. The Chief Official called on General Pereira in his robe of state, bringing a supply of eggs and vegetables. Judging from what the official said, Abbé Huc did not exaggerate the terrors of the passes in winter when the Shiar-gung La is the worst and most difficult pass on the road, and he correctly describes how forty unladen yaks are driven ahead of a caravan to make a path through the deep snow. Merchants cannot afford this luxury, and it is usually only officials on the most pressing business who attempt the journey in winter.

On October 2 they crossed the Banda La, the Archa Pass of the Indian map, and Mount Lhari of Huc, whose height is 16,000 feet. It is the third highest pass on the road, with a final climb of fourteen zigzags to the top, which was extremely trying; though snow-covered, the path

was clear. In descending they soon got a view of the Adza Lake of a beautiful light blue in a valley surrounded by snow-covered mountains, the end of the valley being blocked by a range of 17,000 or 18,000 feet. Here they camped at 13,000 feet.

The following day their route lay below this range, and only a few nomads were seen. They camped at Guo-Le, where there were three stone hovels, and had an extremely cold night at a height of 14,450 feet. General Pereira was feeling weak from the great exertions of the steep climb, and walking was a great effort. On the other hand it was extremely cold riding, and it was always a choice of one of two evils whether to suffer from fatigue or cold. Abbé Huc related that there were unicorns here.

On October 4 the Tro La was crossed, 16,050 feet. This, the last of the four big passes, crosses the very high ground broken by deep valleys extending to east of the Shiar-gung La. There were some very steep zigzags and a final easy rise to the top of the pass, the last 500 or 600 feet rise being through snow. It had been cold at the start of the march, but in the camp at Giamda it was sunny and quite pleasant with a fur coat at 5 p.m.

Lara, 12,400 feet, was reached the next day, a village of twenty families. They saw from the road several square towers about 40 feet high. They were the defensive towers put up at the time when the Jungar Mongols, also known as the Eleuths, were powerful in the Koko Nor region. They invaded Tibet several times, and were finally crushed by the Chinese Emperor Chien Lung, who banished part of them to Chinese Turkestan, where a tract of country is still known as Jungaria, and General Pereira had met remains of this broken race whilst shooting in the Tien Shan.

Giamda was reached on October 6. It was a relief to be camped again at a lower altitude of 11,750; it had been a glorious sunny day and the scenery had been very beautiful, the evergreens mingled with the yellow and brown autumnal tints. A clear stream often ran parallel to their path, sometimes passing over rapids, and occasionally forming islands covered with trees, prominent among which were dwarf cedars, and a blue flower very common in Tibet.

Inner Tibet, with high mountains everywhere and its deep valleys, is a beautiful country in September and October. General Pereira had never seen country to surpass it for grandeur. At this time of year, except at great heights, it is as mild as an English autumn, with sun most days, and there had not been a drop of rain since leaving Chamdo. There was generally a frost at night.

Abbé Huc mentioned that there were two colossal temples at Giamda, but there is no sign of them now. He also mentions a colony of natives from Bhutan; General Pereira found two in the village.

Jinda was reached on October 8, and from here the road now ran due

west to Lhasa with only one big climb ahead. Leaving Jinda they followed down the Siap Chu Valley, the river, 20 yards wide, flowing over a bed of boulders through a valley 300 to 500 yards wide. The hills were mostly covered with trees and bush, now very beautiful with their autumn colouring. The journey was now more enjoyable, chilly starting in the morning and then gloriously warm and through beautiful scenery, between hills rising 1500 to 2000 feet or more above the valley, at times passing through pleasant woods.

The last pass on the road was crossed on October 11, the Gung-bu-ba La, 15,300 feet, by far the easiest pass of the lot. Whilst going over the pass there was a bitter head wind and ice on the streams, but there was only a little snow on one or two of the hills. Abbé Huc described the crossing of the pass in winter as very difficult, "five days winding in a labyrinth of ravines and torrents." It is probable that the winter crossing made the configuration of the ground seem worse to Abbé Huc than it really is. The caravan halted at Ren-jin Ling, 14,800 feet. It was cold there, but General Pereira secured a room in one of the four hovels that comprise the village.

It was a great satisfaction to have no more passes to negotiate, and from here to Lhasa it was all downhill. Me-jo-kung-gar was reached on October 14. There was a great change in the country, and the route lay down a broad flat valley $\frac{3}{4}$ mile wide at the start and opening out to 2 miles, the flattest and most open bit of country seen since they were north of Jyekundo. The bordering hills were lower, rising 500 to 800 feet above the valley, grass and scrub covered, with practically no trees except a few round the villages, of dwarf cedar, and small evergreens along the banks of the river. Eight small villages were passed this day and some big, square, two-storied, flat-roofed houses of better class. The last of the barley crop was being gathered. The route followed the Shung Chu, which changes its name to M'e Chu, and later to Song-hu Chu; this change of name of the river seems different from General Pereira's experience in Eastern Tibet.

Three more stages following down the Song-pu Chu Valley and Lhasa was reached. The journey had been done in 37 stages from Chamdo, 670 miles, and the distance from Peking was 6360 miles, of which General Pereira had walked over 3500. He had successfully accomplished the big journey on which his heart had been set for many years, and his cablegram home, "LHASA, ENGLISHMAN FIRST," showed his pleasure that the credit of this journey should come to England.

General Pereira had a charming residence at Delinka, outside Lhasa, put at his disposal by the Tsarong Shape, the Commander-in-Chief of the Tibetan Forces, and he had an extremely interesting audience with the Dalai Lama. He met all the big Tibetan officials and four Rugby boys, Tibetans who had been educated in England, one of them a lama.



LOOKING EAST FROM THE DOR-JILA



LOOKING WEST DOWN ME CHU VALLEY



LOOKING WEST TO NGUI-CHOR-KE



LOOKING DOWN ON TSC-DÜNG-WU-NGI FROM THE NUR-GÜNG LA

After a short stay at Lhasa, General Pereira travelled to Calcutta, a part of the journey now so familiar that I will not refer to it. He reached Calcutta on November 23, and was carried off to a nursing hospital suffering from thrombosis, or clots of blood in the left leg brought on by the severe exertion of his journey. As soon as he was well he started off on 2 January 1923 on further arduous journeys.

In concluding my lecture I wish to explain that I was emboldened to undertake the task by the number of letters I received from friends of my brother who were anxious that an account of his travels should be published. These letters showed what great friendships he had formed. I have had them from all parts of China, from officials, missionaries, and civilians; and his friendships were not confined to Europeans, for his diaries constantly show the mutual trust and interest there was between him and many Chinese of high rank.

Also I wish to emphasize this point: the difficulties of carrying through such a journey as this are obvious, but General Pereira was over fifty-eight years old when he started on it. He was lamed in a hunting accident soon after joining the Grenadier Guards, the lasting effects of which would have deterred most people from undertaking arduous journeys on foot, and he suffered from the effects of frostbite incurred during his shooting expedition in the Mu'ping district. A will of iron and an unshakable determination to overcome all difficulties were the cause of his success.

Before the paper the PRESIDENT (the EARL OF RONALDSHAY) said: A certain melancholy attaches to our proceedings this evening, for the traveller of whose journey we are to have an account to-night is no longer alive to tell the tale himself. We are greatly indebted to Major-General Sir Cecil Pereira, the brother of the late Brig.-Gen. George Pereira, for compiling from his letters and diaries an account of his last great journey from Peking to Lhasa. It may be that the general public have up to the present time known little of the many journeys of the late General, but those who have had the advantage of reading his reports officially can testify to their great value, particularly from a geographical point of view. I am told that although the late traveller spent the greater part of the last two and a half years of his life in out-of-the-way places, his brother never once during the whole of that time failed to receive a regular mail from him. Sir Cecil Pereira is well qualified, therefore, to give us an account this evening of that great journey from China to the heart of Tibet which in its entirety has not been performed by a European since the days of the Lazarist missionaries, Gabet and Huc. I now have much pleasure in calling upon General Sir Cecil Pereira to give us his account of the journey.

Major-General Sir Cecil Pereira then read the paper printed above, and a discussion followed.

The PRESIDENT: We are fortunate in having with us this evening General Anderson, who has travelled with General Pereira in former days. I will ask him to add a few words.

Brig.-General ABBOT ANDERSON: It was my great privilege in 1911, on leaving the Legation Guard at Peking, to accompany Brig.-General Pereira

on a trip for shooting and exploring in the Altai and Tien Shan. We were together for nine months on this journey. Starting from Peking, we went to Omsk by the Siberian Railway, and from there *via* Semipalatinsk, travelling up the River Irtysh for fourteen days in shallow-draft steamers to the Russian outpost of Zaissan. I need not weary you with details, but in nine months one gets to know a man pretty well. I had previously seen a great deal of Brig.-General Pereira when he was our Military Attaché in Peking, and I can only say that from what I knew of him I am not the least surprised that he succeeded in this great effort of travel from Peking to Lhasa, for a man with more grit (he was lame, as Major-General Pereira has told us) I have never met. He had travelled all over China, and had been in every province there; but the amount of work he had done and the reports he had sent in are known to very few. I only wish, judging from a letter I had from him last year, that he had been able personally to tell us of his journeys and to have given us the interesting lecture which we have listened to to-night.

The PRESIDENT: The account of the journey which we have heard to-night recalls another great journey which was made from Peking to India many years ago by an ex-President of this Society, Sir Francis Younghusband. I will ask him to address the meeting.

Colonel SIR FRANCIS YOUNGHUSBAND: As one who has travelled both in China and Tibet, I should like to take this opportunity of expressing my high opinion of that fine achievement the record of which we have listened to. We are impressed by the grit and determination which General Pereira showed, and it is all the more remarkable that at the time he made that journey, travelling 3500 miles on foot, he was a lame man and had been lame for many years. That, as General Anderson has said, emphasizes his grit and determination. But to me it seems that the most valuable result of his journey is the good impression which he left behind. He had to find his way through China at a time of civil warfare when one province was at war with another, and when the whole country was overrun with brigands; and it stands to reason that no man travelling by himself, as General Pereira did, could have got through if he had not possessed in a high degree the capacity of getting on with the peoples, both high and low, whom he met. That evidently was the case with General Pereira. With high Chinese officials, with high Tibetan officials, and, I should gather also, with high British officials he was able to find his way. The result was not only a feat of great physical endurance, but the gathering of much valuable geographical information as well, with maps and photographs. Probably the most striking geographical feature which he met with on his journey was that high mountain which the exuberance of some journalist in Calcutta put higher than Mount Everest. When we read of that in the papers we made allowances for the optimism of journalists. Knowing General Pereira we knew that he would not have committed himself to such a statement unless he had very good foundation for it. It is not likely that a mountain over 29,000 feet would stand up by itself without some other very high mountains as satellites by it. Mount Everest itself does stand head and shoulders over the other mountains round; all the same there are peaks of 26,000 feet and 27,000 feet close by, and so it was not likely that anything higher than Mount Everest would stand out without being accompanied by satellites something like it in height, and we do not hear of any considerable cluster of peaks. But from the good impression which General Pereira left behind, we hope it may be possible for some future expedition to go out there and measure the exact height of that mountain, and probably it will be in the order of 25,000 feet, as General Pereira has surmised.

It was very fortunate for General Pereira that he had the good-will of the Tsarong Shape, the Commander-in-Chief of the Tibetan Forces. Evidently the attitude of the Tibetan Commander-in-Chief has changed since I was in Tibet twenty years ago. The commander at that time said that as a rule he did not eat meat, but he would be exceedingly glad to eat the flesh of us Englishmen. That was his attitude in this very month twenty years ago, when he was with 8000 men engaged in besieging us in a small farmhouse, whilst we had only 500. So that there is a considerable change for the better now—though perhaps not entirely for the better, for we have heard of the advent of bagpipes into Tibet, and about “The Campbells are Coming.” The Campbells did come when I was at Lhasa. The colonel of one of the regiments of the escort was Colonel Campbell, who lived in the same house with me at Lhasa, and he had bagpipes playing all day long and most of the night as well.

I am glad to have heard the many references in the lecture to the French travellers Gabet and Huc. Theirs was really a very remarkable journey. I asked the Regent with whom I was negotiating whether any Europeans had been there before us. He said he could quite well recall when he was a small boy having pointed out to him two Europeans walking through the streets of Lhasa. From the dates which he gave it was evident that they were Huc and Gabet. All that General Pereira has said confirms the good work which those pioneer missionaries did in Tibet.

Major-General H. R. DAVIES: I will not detain you long at this late hour, though I am very glad to respond to the call of the President, because of the great admiration that I have felt for General George Pereira, both as a man and a traveller, during many years' friendship. I know there are a few people who realize the important work that he did even before his great journey to Lhasa, but so modest was he and so averse to putting himself forward in any way as a great traveller, that I think there were many to whom his name may hardly have been known when the news came through that an Englishman had arrived in Lhasa from the East. It was a great feat. Many had tried before, but no previous traveller had succeeded since the 'forties of the last century. I think also the great work that he did previously should not be lost sight of. He had, I believe, travelled between 40,000 and 50,000 miles in the Chinese Empire. He had visited every province and every part of every province, and he had not only travelled in China proper but in Mongolia, Manchuria, Chinese Turkestan, and Tibet.

I may say without any fear of exaggeration that no European who ever lived has made such extensive journeys in the Chinese Empire, and I may also add that I do not believe that any Chinese has ever had such a great geographical knowledge of his own country as General Pereira had of China. The President has alluded to General Pereira's great thoroughness. I have had the opportunity of seeing many of his reports, and know how true that remark is. No more thorough observer ever travelled in China.

Those who did not know him might imagine that he was a very robust man who felt no fatigue and could stand any climate. But this was by no means the case. He was not a very strong man. It was not bodily strength that carried him through; it was the great spirit within. His great heart carried him through all obstacles and all physical disabilities. I do not think there is any better example of this than what happened when he arrived in Calcutta. He was suffering, as the lecturer has told us, from clots of blood in the leg, was fifty-eight years of age, and had just done a journey that no European had done for eighty years. A less resolute traveller might well have

been content to say that this was sufficient, and go home ; but this was not his way. He had determined that he would do other travels in China, and knowing full well the risk of his leg breaking down, he started off again into one of the most mountainous provinces.

One more qualification I have for speaking of General Pereira here to-night, and that is that during the war he was at one time commanding a battalion in the brigade that I then had. I need hardly say to any one who knew him that the more dangerous the position he found himself in the better he was pleased. He was a great example of courage and enterprise to all those who served under him. I feel we have lost not only a very great traveller but a very gallant soldier.

The PRESIDENT : At this hour of the night I do not propose to add anything to the discussion which has taken place on the paper. I merely desire, on your behalf, to express to our lecturer our sense of admiration, both for the character and for the achievements of his late lamented brother, and to the lecturer himself the sense of our gratitude for the manner in which he has compiled from the traveller's letters and diaries so admirable and accurate an account of his brother's great journey. Finally, we assure him that after listening to his description of that journey we shall all look forward with the greatest interest to the more detailed account in the publication which he has foreshadowed.

THE PROPOSED ADOPTION OF A STANDARD FIGURE OF THE EARTH

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Read at the Afternoon Meeting of the Society 12 May 1924

THE question here propounded for discussion has first to be stated in terms of scientific precision. On the Earth there are many obstacles militating against precise definition : mathematical uniformity is not to be expected in the phenomena of Nature. In considering the dimensions of the Earth it is essential to fix on some kind of regular surface ; what is the surface to be adopted ?

At the outset we are faced with (1) the *actual* surface of the Earth with all its irregularities ; obviously it would be impossible to speak in precise general terms of the dimensions of the actual surface. There is (2) the surface of M.S.L., such as would be apparent to the eye were it possible for the ocean to interpenetrate the land through frictionless canals of great capacity. This surface is known as the *geoid*. There is (3) a surface described as the *ideal*, being the external form of an earth in a state of permanent hydrostatic equilibrium. Finally, there is (4) the *geodetic* surface with which we are chiefly concerned at the moment.

The geoid may be popularly described as the surface to which the plumb-line is everywhere perpendicular. It is found to be of irregular curvature within the continents, and it is fairly certain that the curvature of the oceans themselves is not quite regular. The surveyor is directly interested in the geoid—an equipotential surface on which he works