

MULBEKH MONASTERY

THIS MONASTERY OVERLOOKS THE VILLAGE OF MULBEKH WHICH LIES HUDDLED AT THE FOOT OF THIS SPIRE-LIKE ROCK.

The
STORMSWEPT ROOF
of ASIA

BY YAK, CAMEL & SHEEP CARAVAN IN TIBET
CHINESE TURKISTAN & OVER THE
KARA-KORAM

BY

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&c., &c., &c.

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THE STORMSWEEP ROOF OF ASIA

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C H A P T E R O N E

The Journey to Leh

AT one o'clock on the afternoon of 23rd April 1927 the steamship *Trifels*, of the Hansa Line, left Antwerp, and being a dull, rainy day our departure from Europe was made with few regrets. After the enormous amount of work and the various excitements which had accompanied the last few weeks the voyage to India was a veritable rest-cure. Neither de Terra nor I was undertaking this journey for the first time, but this did not make it any the less enjoyable, and we eagerly greeted the places we knew so well. We reached India on the 30th of April, spent eight busy days in Bombay, and then took the train to Rawalpindi, from whence, a day later, we reached Srinagar, the capital of Kashmir, the starting-point of the expedition. There we met Bosshard, who had been in Kashmir since February making preliminary arrangements.

High up in the north-west Himalayas lies the "happy vale" of Kashmir. Towering, snowy peaks, ranging from 16,000 to 23,000 feet, are silhouetted against the blue horizon, and the temple ruins lie dreaming of the olden days of pomp and splendour.

Numbers of canals and waterways thread their way through the fertile plain on which lies Srinagar, the "Venice of the East." The rather gimcrack wooden houses, with their highly decorative balconies, are grouped picturesquely along the banks, while the long narrow gondolas give life to the waterways, the whole forming a richly coloured scene.

Unfortunately our time was so fully occupied with preparations for the expedition that we had very little time to see Srinagar or the surrounding country. The buying of the remainder of our equipment and the packing was a lengthy proceeding, and would be too wearisome to describe in detail. Everything had to be thought of, for in the heart of Asia one is entirely cut off from the world. Provisions, clothes, tents, fire-arms, ammunition, scientific and photographic equipment were among the most important things which had to go with us. We also engaged our chief servants in Srinagar, and it was our cook Habiba and the boy Abdul who throughout our travels proved the most useful. For the journey to Leh we hired pack-ponies and porters, whose rates of pay were fixed by the Indian Government, so we were therefore not obliged at the beginning to buy pack-ponies of our own. We received valuable help in purchasing our equipment from a Kashmiri merchant called Ahamdu Seraj; he was a skilled man and was not exclusively interested in what he was going to make out of it all, which is generally the case with Kashmiris. Bosshard here introduced us to our four-legged travelling companion, our little dog Kurrum, who was called after its

home, the Kurrum valley, on the North-West frontier of India.

We left Srinagar at last on 22nd May. Habiba had been sent on ahead two days ago to Ganderbal with the heavy baggage. In spite of this, however, we still had a considerable number of cases and boxes with us when we left at midday in a large wagon for Ganderbal. Ahamdu accompanied us in order to help us right up to the last minute. Bishop Peter of the Moravian Mission from Leh, whom we had met in Srinagar, recommended to us as a travelling companion a young Ladakhi who had been a boy at the English Mission in Srinagar and who spoke fluent English. The heavily laden wagon rolled slowly through the narrow streets of the bazaar to the mouth of the Sind valley. At Wild's Bridge we found the five pack-ponies and the three riding-ponies which we had ordered beforehand. The baggage was quickly loaded up. We mounted our ponies, shook Ahamdu warmly by the hand, thanking him again for all his help and energetic assistance, and then rode off into the Sind valley. The country was magnificent, continually reminding us of Alpine scenes. The aromatic air of the pine-trees was glorious as we rode along the banks of the roaring Sind river. We enjoyed to the full the sight of this deep green vale, for too well we knew that once across the Zoji La we should not see trees and woods for many a day. At dusk, as we drew near the bungalow at Kangan, Habiba and the porters, who were ready for us, came out to meet us, and led our ponies away.

We did not get under way the following morning

till late as we had to weigh all the loads. The caravan drivers asserted that in order to load up all our voluminous baggage they would need at least fifty pack-ponies. We knew that each pony was capable of carrying about two *maunds*, or 140 lb., so that, having ascertained the total weight of the baggage, it would then be possible to work out exactly how many animals were necessary. The result of the reckoning showed us that everything could be loaded up on to thirty ponies.

In Gund I studied the rocks just behind the bungalow, which were scratched and striated, and clearly showed the action of a diluvial glacier. We arrived at Baltal on 27th May, and on the first high pass we found thick snow still lying. Large avalanches had fallen down the steep slopes into the valley and had in places blocked the path leading to the top of the Zoji La. The crossing of the pass in winter presents great difficulties, for it is impossible to use ponies, so that travellers have to wait for a long time before they succeed in obtaining carriers, who demand a wage of twelve to fifteen shillings a day. Steep and nearly perpendicular are the sides sloping down to the deep ravine which opens out into the main valley.

On 28th May, as we were crossing the pass, the peaks were veiled in blue-grey clouds, while a storm was raging down below. There was distant rumbling of thunder from the mountains overhanging Baltal as our caravan slowly worked its way up the pass. The crossing of several avalanche slides did not delay us at all. Just before we reached the summit a driving snow-storm set in, but the thick snow, lying at an altitude

of 11,000 feet, was still fairly hard, so that we were able to make good progress on foot, though the caravan was left farther and farther behind. The storm grew steadily worse and the snow became soft and slippery, so that we frequently sank in up to our knees. We arrived late at Mechoi, as we left Baltal only at midday. Suddenly, like a ghost, appeared a *dak-wallah*, or post-runner, out of the midst of the whirling snowflakes—for the Government has inaugurated a regular postal service between Leh and Srinagar, which is maintained by these runners. At last we caught sight of a dim light coming from a primitive wooden hut. The caravan did not arrive that night, which meant that we were without cooking utensils, provisions and bedding. Gergan, our young Tibetan friend, however, produced a few slices of bread, some butter and tea, which tasted good after our strenuous day. We then took down the window-curtains and door-hangings and wrapped ourselves in them, and thus passed the night by the flickering flames, while outside the snow fell in thick flakes.

A wonderful winter's scene lay before us next morning when we opened the door of this desolate travellers' hut. It had snowed so hard that we were able to distinguish only a few black rocks rising out of their soft white blanket. The great Himalayan peaks stood out against the vivid blue sky, so dazzling that they seemed to be modelled of snow. Our caravan arrived about nine o'clock, and after an hour's halt we all left, and began to descend again in a northerly direction, following the banks of the Gumber. By

ten o'clock the sun had melted the snow which had fallen overnight. In many places the pasture-land on the mountain-side was carpeted with small blue gentians and many-coloured primulas. The weather was very uncertain; at times there was brilliant sunshine and the next moment we were fighting our way in a hail-storm. We were therefore glad to reach the rest-house at Matayan in the afternoon and drink a very welcome cup of hot tea. Our food then consisted of chicken, rice, potato and egg dishes, as our tinned food had to be kept for the summer and autumn journey across the desolate and uninhabited high plateau of Northern Tibet. In contrast to the mountain-sides in the Sind valley, which are densely wooded, the mountains here are absolutely barren, the main chain of the Himalayas forming a dividing line in climatic conditions. The monsoon clouds collect on the southern slopes, bringing deluges of rain with them, but only part of the clouds succeed in pushing their way across the main chain to the north. The atmosphere at that height is exceptionally clear and the visibility so good that we could pick out quite plainly every ledge, boulder and waterway on the mountain-side or in the valley below.

The next day we came to the broad Pandras basin. The houses there seem literally to be stuck to the rocks, and built one on top of the other so that the roof of one served as the courtyard of another. The whole population appeared to be busy in the fields; both men and women, the latter wearing a hood-like coiffure, with large earrings, were taking part in this arduous work. It was possible to ride for hours through this

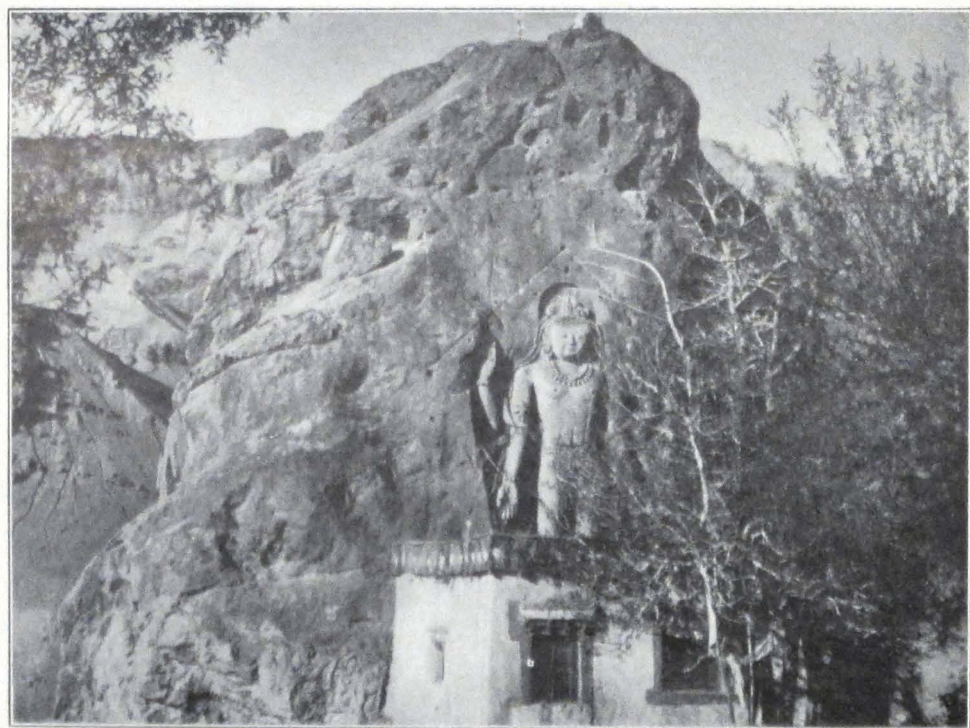
great disintegrated mountain mass without meeting a living soul. Now and then a small lizard would glide across our path or a bird of prey circle round the peaks overhead. After Dras and Kargil the road went on to Mulbekh, and on the afternoon on which we left Kargil we noticed that we were approaching the land of the Lamas. Here were long *mani* walls, or stone walls built out of finely carved flat stones, each bearing the holy inscription *Om Mani Padmi Hum*, and now and then stupa-like white *chortens*, or burial shrines. In Ladakh the dead are burnt and the bones are finely ground into bone-meal, to the accompaniment of music. Out of this bone-meal are made little tower-like images or small statues of gods, which are placed inside the *chortens*.

The mountain-sides were bathed in the rays of the setting sun as we approached the large monastery at Mulbekh, which lay hidden behind a rock jutting out over the valley. A little distance away were the red-and-white buildings, gleaming in the sun, and from them came the monotonous drone of the horn trumpet which a Lama was blowing, standing on a balcony above us. All round us were these white *chortens* and long *mani* walls, while religious flags and signs decorated the housetops. We continued on our way over one pass of 10,308 feet and another of 13,446 feet high. The desolate and rocky country-side was covered with salt efflorescences, which gave a snowy effect.

A figure of the Buddha Maitreya, or Chamba, larger than life-size, has been hewn or carved out of an isolated rock, and a bundle of twigs, from which

flew white flags, ornamented the top of the rock. Here we came across the first prayer-wheels and marvelled at the ingenuity of the inhabitants in fixing these in the form of small windmills on the roofs of houses.

The march from the summit of the Fotu La—13,446 feet—leads through strange scenes. The hard weather and the occasional heavy rainfall have produced small mounds like earthen pyramids. The gravels, clay and sand deposits are disintegrated into innumerable little pointed pyramids, separated from each other by narrow deep chimneys. From the reddish brown rocky subsoil rise yellow clay and loess walls, which look in the distance like old ruins. As the sun sank over the horizon the loess walls stood out, silhouetted in the curious pale light against the dark evening sky, as if one were in a gigantic theatre with constantly changing scenes. In the midst of this fantastic world lies the large monastery settlement of Lamayuru. One building rises above another, with prayer-flags fluttering from high masts, and the monotonous drums beat forth from the monastery. On the balcony of the highest building were sitting the red Lamas, who gazed at our caravan with inquisitive eyes as it went by. On our return journey we had an opportunity of seeing over this monastery. The path then curled steeply down to the Indus river. The Hangru stream has cut its way deep through the purple rocks. We then had to wind our way for two hours through a narrow gully, where on either side rose steep walls of rock, which frequently allowed us to catch only a glimpse of the sky.



OUR CARAVAN CROSSING THE ZOJI LA

THE ZOJI LA IS ONE OF THE MOST TREACHEROUS PASSES IN THE HIMALAYAS ON ACCOUNT OF ITS BLIZZARDS AND AVALANCHES.

A ROCK HEWN STATUE OF THE BUDDHA MAITREYA

THIS STATUE IS LARGER THAN LIFE-SIZE. IN THE FOREGROUND IS A SMALL MONASTERY.

We awaited with great excitement our first glimpse of the Indus valley. Behind each rocky wall we expected to see the great river, but again and again we turned the corner to meet yet another obstacle. Dusk was falling when we finally reached our objective, but alas, what a disappointment! The Indus river here has made its way through a mass of bare and jumbled rocks and stones, and was far narrower than we had expected. What a contrast to its course lower down, where under Attock Bridge flows that vast amount of water, dancing down through a wide valley! The next day's marches led us up the great Indus valley. For hours at a stretch our road lay between scorching rocks, with scarcely a sight of anything green. In the middle of the day the heat was almost unbearable. Our horses, worn out, moved slowly over the dusty and often stony path, while Kurrum looked vainly under each rock for some shade. The valley then widened again, and the tiny settlements seemed to quiver like oases in the desert.

The road from Srinagar to Leh is divided into fifteen stages, and at each of these is a rest-house for the traveller, where for a trifling sum he can obtain shelter. In these bungalows there are two or three rooms, furnished with deck-chairs, a table, a washstand, a bed and a zinc bath. There is always a supply of fresh water in the vicinity, and in most cases it is possible to purchase provisions from the caretaker. Beyond Leh, however, one has to use one's own tent. We ourselves left Leh on our left as we wished to pay a visit to the Hemis monastery, which lies hidden away

in a rocky, gully-like ravine of the Upper Indus valley. Here, as in all Buddhist monasteries, there takes place on the 9th and 10th of the fifth Tibetan month the great religious plays which are given in honour of Padmasambhawa, the founder of the Buddhist religion.

On 8th June we followed the path which led across a stony desert to the famous monastery, where a camping ground was put at our disposal in a small poplar grove. In the afternoon we paid our respects to the abbot, the Skushok. We clambered up along dark passages and up uneven stone steps to the top storeys. Many of the rooms were mysteriously dark; very little light managed to penetrate through the gloomy windows, and the only other light came from the oil lamps which were burning in front of the sacred images. Dressed in a dark toga sat the High Priest, with his back to the window, in the presence of a number of Lamas. He was an elderly gentleman with short grey hair. He shook each of us by the hand and asked us to sit down facing him, and then inquired in great detail about our plans, our various undertakings and any particular wishes which we had. About the room we could just discern some extremely quaint objects. Behind his chair was an electric bell which had been presented to him by a European, but which no longer worked as the batteries had run down some time ago. On a shelf stood various different coloured images of Buddha, small oil lamps, an alarm clock, a pot of vaseline, amulets, and also a papier-mâché figure of a tiger which could nod its head. The walls were decorated with beautiful temple flags.

The Skushok is a man of many interests; he is a geologist and a mineralogist, and showed us various types of stones. While we were talking to him, Ladakhi women arrived with their children, whom he blessed, laying his hand on their heads. Next to him, seated on the floor, sat the former King of Ladakh, who also has become a Lama. After the audience we made another tour of the monastery and then went back to our tents. The following morning we woke to the sound of the trumpets, and as we walked up to the monastery we saw the spectators who had been unable to get seats inside already sitting very close together on the roofs and balconies of neighbouring buildings waiting for the play to begin. A gay crowd of people, among which were women wearing the distinctive Ladakhi head-dress, had forgathered here in order that they might see the play.

Two jesters first appeared, whose duty it was to amuse the audience during the intervals. The Lamas, who were providing the music, had seats in a covered gallery, while a richly decorated throne had been prepared for the Skushok. The music grew louder and louder with the beating of the sacred drums, the striking of the brass cymbals, and the notes of the flutes and trombones as the devil dancers emerged from the precincts of the temple into the large inner courtyard of the monastery. The dancers represented the wicked demons who bring ill-luck. Expensive Chinese silk materials were used for their dresses, and their masks were absolutely grotesque. The heads of lions, stags and oxen charged about, all making the most terrifying

grimaces. The dancers performed mostly in groups, though there were occasional solo turns.

The festival reached its height on the second day. The first item was a sacred ceremony which took place in the large hall of the temple, to which, however, we Europeans were not admitted. The beating of deep drums, the clanging of the big temple bells and the murmuring of loud incantations came forth from the sombre hall, in which the crimson wooden architecture of the columns produced an eerie effect. The Lamas again and again blew their deafening trumpets. In the meantime two courtiers had brought into the inner courtyard three richly caparisoned horses and three dogs, which belonged to the monastery, dressed in coloured blankets. After the ceremony in the sacred hall was over, the animals had their coverings removed, and horses and dogs alike were painted red. Then, amidst the howling of the crowd, they were chased three times round the courtyard and lashed with whips. Perhaps this ceremony is in the nature of a sacrifice, for before the introduction of Buddhism into Tibet, at the time when the Bon religion was prevalent, sacred animals were sacrificed as well as human beings. There is another explanation, which is, that the red represents the sins of the people, which are by this means conveyed to the animals.

A Lama next drew on the ground in the middle of the courtyard a magic triangle, and placed therein a small blood-red image of a human being made of clay. The figure is supposed to represent the evil spirits, the enemies of Tibet as well as Lamaism. In

some books it is said that in the great ceremonies at Lhasa pieces of flesh as well as blood from criminals are mixed with the clay. While this was going on, the devil dancers performed until the Lama cut the figure into pieces and threw parts of it to each of the dancers. They then left, and their places were taken by four Lamas, wearing amazingly realistic death-masks, who performed a dance on the spot where the image had lain, in order to exorcise the evil spirits.

The meaning attached to this play varies as much as the audience differs. The play itself is not always the same in the different parts of Tibet. Waddell is of the opinion that it symbolises the driving away of the evil spirits of the old year, and that because of the sacrifices the God of War and the other gods will become favourably disposed towards them in the new year.

The path from Hemis to Leh lay along the right bank of the valley, with the picturesque monastery of Tikse, which stands like a castle on a steep rock, on our right. We came to Leh on 15th June, where we were heartily welcomed by the Moravian missionaries, Bishop Peter and the Rev. Mr Kunicke and his wife. We had received permission from the Resident in Srinagar to pitch our tents in the large garden which belongs to the British Joint-Commissioner for Ladakh. We then set to work, which involved getting together a caravan for the first great stage that would take us across the western Tibetan highlands. The first thing to consider was the engaging of our personal servants and the buying of the baggage animals, both of which presented great difficulties. After lengthy negotiations

we at last succeeded in hiring a caravan and ten porters. Our leader, Habibullah, a relative of the famous Mahomed Isa who died on the Hedin Trans-Himalayan Expedition, unfortunately turned out during the journey to be absolutely useless. The most efficient of them all was undoubtedly the widely travelled Sabur Malik, a small but extremely tough Ladakhi, who proved of the most inestimable value to us. He was especially useful to me as he could read and write Tibetan, Turki and Hindustani, and I was therefore able to improve my knowledge of these languages considerably. He was indeed the only one of our servants who could understand and work with Asis Sheikh and Puntsok in dealing with the troublesome yaks. What amazing animals these grunting Tibetan oxen are! We found that the loading and unloading of them could be done only when the servants sang a monotonous tune, and they would go only when the porters sang or whistled. It was the first time I had ever used yaks, but I had been told that these animals are the best suited for the raw Tibetan climate, and in particular for high altitudes. However, some travellers seem to have found yaks satisfactory, others not so good. Reports about horses showed that many losses must be expected, and of course they are much more expensive, being about three or four times the price of yaks. As economy was a vital question for us, I did not even consider the question of taking a large number of pack-ponies. Mules are the most suitable animals, but they were practically impossible to get, and also we could not afford to buy them. We had to run our

expedition with a sum of money which amounted to about half the amount that other expeditions had had at their disposal. I made up my mind to take seventy sheep because I knew that an officer called Biddulph and also Sven Hedin had both written very favourably about sheep as carriers. Little did we realise then that of all our animals the sheep would survive the best and be the means of saving our lives.

It was also necessary whilst in Leh to lay in a supply of provisions and stock. I had calculated that we should be travelling for at least three months in practically uninhabited parts, and we were therefore compelled to take ample provisions not only for ourselves but for our staff. Saddle-bags had to be made and innumerable loads had to be packed. There was a never-ending pile of correspondence to be dealt with, astronomical observations to be worked out, and an ethnographical collection of Tibetan religious and other objects of daily use had to be packed and sent home. Bosshard kept all hands busy developing photographs and some eight hundred yards of cinematographic film which had been taken at Hemis.

We were also concerned with the question of being able to negotiate and obtain money, which, as it happened, proved much easier than we had anticipated. It appeared that in Chinese Turkistan we were allowed to negotiate cheques on Indian banks, and we were thus able to get all the money we wanted. The Indians in Kashgar, Yarkand and Khotan who cashed our cheques naturally had no guarantee that these would be met, which would only be presented for payment

a couple of months later. Luckily, however, they did not seem to mind. It is very difficult to carry about with you large sums of ready cash, but this difficulty can be overcome in another way. For example, we paid over a large sum to a merchant in Srinagar, who in turn gave us a *hundi*, a kind of letter of credit, which he made out to dealers in Leh and in Chinese Turkistan. The Indians in Chinese Turkistan are mostly money-lenders or bankers, and they certainly do a good business by charging for borrowed money at interest as high as 50 per cent. The rate of interest for those who borrow money from the Chinese Government in Turkistan is 35 per cent.

While we were in Leh we had many a pleasant and unforgettable hour's chat with Colonel Berry, who is in charge of the Missionary Hospital, and his wife. At last, on 12th June, our caravan was ready to start. We had no baggage animals, as we were taking over our yaks only in Tankse, and intended purchasing our sheep from the last Ladakhi settlement on the Tibetan frontier. We could hire pack-ponies as far as Tankse. De Terra, with Abdul and another porter, had started a week ahead of the rest of us in order to carry out certain geological observations in the Tankse district. The first two days' journey, which took us past Tikse, was very familiar, and we looked forward eagerly to the crossing of our first really high pass, with a height of nearly 17,716 feet.

Our First High Pass

BEFORE us lay the Indus valley bathed in sunshine. The air was fresh and clear, but soon the boulders and sand grew so hot that it seemed to quiver about them. The white-washed *chortens* of the old monastic settlement of Njerma were so glaring in the sunlight that we had to put on our smoked glasses. We were able to get a glimpse inside one of the large *chortens* through a hole at the foot of it. The walls were decorated with sacred pictures painted by the Lamas. This place is now deserted; there remain only countless *chortens* and the ruins of the old cloistered buildings to tell the tale of the life which once prevailed, when Lamas in their red togas told forth the hours of prayer from the towers of the monastery. It was founded by Rintschen Sangpo, and was later robbed of all its treasures and jewels, the greater part of which it is alleged was carried off to Cheh. The *dukang*, or the main room in a monastery, gave one a very poor impression, the fine old wall-paintings being replaced by indifferent stencilled pictures of gods, which had been done by the Lamas.

We then continued our way slowly uphill over the scorching sand and boulders, past the towering rocks of Takna, on which a monastery is built, and by mid-day reached the cool poplar grove of Karu. After our

hot dusty ride the halt under these trees beside the rushing Tankse stream was doubly refreshing. Magnificent bushes of dog-roses hung over the crystal-clear bubbling water as it leaped and poured over the great boulders. Our camping ground was picturesquely situated on the banks and hidden by tall trees. We now had a few yaks with us, which however did not seem to have much liking for the midday heat. Just as we were about to have our supper we heard a rumbling like distant thunder coming nearer and nearer. The servants ran to the edge of the terrace and shouted and gesticulated to the porters on the bank of the river to warn them of the approaching danger. Down rushed a roaring mass of dirty snow-water, hurtling into the valley. Night fell without any warning. A full moon appeared, its silvery rays piercing the leaves and casting its beams on the place where we lay sleeping.

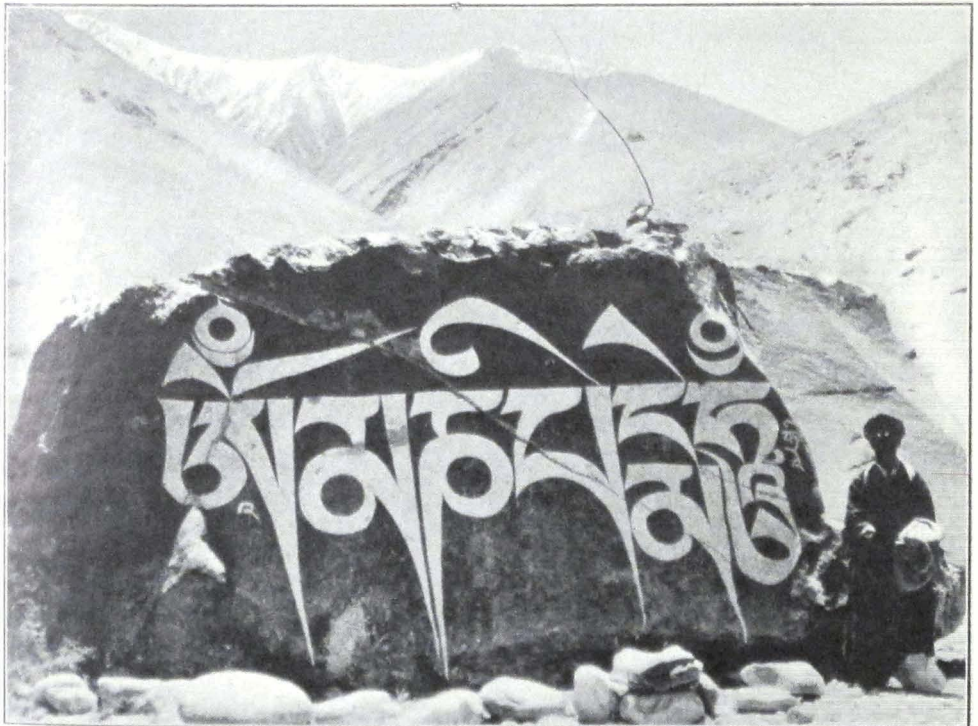
At Sakti, where we purchased barley and maize, we began the ascent of the Chang La. Up a small side valley of Sakti, stuck as it were to the sides of the rock, is the monastery of Taktagh. We climbed up some rough steps and from one of the balconies had a glorious sweeping view across the valley. Clear and deceptively near lay the snow-capped Himalayas; one glistening peak in particular, 57 degrees to the southwest, attracted our attention. We discovered a whole set of beautifully modelled images in one of the sacred halls, and recognised the thousand-handed Chenresig, and also the green Tara and Yamantaka with their terrifying look. On the other side of the hill a hermit had built his cave. The Lamas from the monastery

take him his food, and he lives now entirely cut off from the world, and is not even allowed to talk to the Lama who comes to him.

We were thrilled at the view from the summit of the Chang La, which was the first really high pass that we had to cross. The ascent is gradual, the path zigzagging up the valley. Tiny stone huts appear below us, standing in the midst of the rich green fields, which are irrigated, and often swamped, by innumerable small canals. We climbed higher and higher, getting a wider and wider view. I walked until we reached an altitude of 14,435 feet, and I then swung myself astride my grey pony. We came to a large moraine, which showed us that at one time during the ice age glaciers protruded far into the valley. On we went over pasture-land on the mountain-side, diagonally across a flower carpet of the most beautiful forget-me-nots, primulas, yellow ranunculas and large dandelions. Gradually the height and rarity of the air became noticeable, and horses and yaks were forced to stop every minute to get their breath, so we dismounted and went on foot, taking slow steps. In bright sunshine we pitched our tents in a restful green field at an altitude of 16,400 feet. The animals were quickly unloaded and turned out to graze. The yaks wandered far afield, and soon looked like black specks in the distance climbing the steep sides of the hills, while the horses roamed about the meadow and near the brook. In the afternoon the heat of the sun in the tents was practically unbearable, and it needed a good deal of energy to write up my diary and to carry out any

topographical work. The farther one gets from civilisation the greater is the feeling of freedom; man is forgotten, nature is all-sufficient. The rocks by the wayside, the moss and edelweiss bravely forcing themselves to grow at these altitudes, the tiny blue and large white butterflies which flit in the sunshine from bud to bud, all seemed to open their hearts to us. The higher we climbed the darker became the blue sky, and the pure white cumuli clouds seemed to rise sharp against the azure background. Everywhere is this marvellous clearness, this great purity and visibility of the atmosphere. When one has once seen the glorious colours of the Tibetan highlands, though in some respects desolate, then in Europe, even on the clearest day in the Alps, one seems to be gazing through a gauze veil which hides the real colours.

Next morning when Habiba woke me at four o'clock the moon was still in the sky. At five o'clock the caravan was working its way among gigantic blocks of granite up the summit of the pass, about 18,000 feet high. The night before the temperature had fallen below freezing-point, and we often crossed streams which were ice-bound. At seven o'clock we reached the summit, which was marked by a pile of stones, over which fluttered countless prayer-flags, crowned by the bleached skull of a horse. There was snow on the northern slopes as well as on the summit, but when the sun came out it began to melt. An hour later it had become so soft that moving forward was a matter of some difficulty. The animals frequently broke through the deceptive ice covering and slid and plunged



1. A DEVIL DANCER : THE DEVIL DANCERS ARE ONE OF THE CHIEF FEATURES AT THE MYSTERY PLAY AT HEMIS AND WEAR A FIERCE DEMON-LIKE MASK. 2. A MANI STONE : A LARGE BOULDER WITH THE HOLY FORMULA "OM MANI PADMI HUM" INSCRIBED ON IT IN TIBETAN.

all over the place. We had all hoped that we should have a glorious view from the top of the pass, but unfortunately there were some neighbouring spurs in the way. Some tiny marmots with their golden fur lay basking in the sun, but there was no other animal life except for a few hermit-crows flying overhead. We passed over the snout of a moraine to the edge of the small blue Tsultak Lake, beside which we camped for the night. In the afternoon I had a bad headache, but I managed to cure it with aspirin. I also noticed what other travellers have discovered, and that is, that headaches come on during the descent from high altitudes and not during the ascent. That afternoon by this tiny lake made us appreciate for the first time the real beauty of Tibet, which is incomplete without the turquoise-blue of the water, blending with the deeper blue of the sky and the dark brown of the rocks.

A short march the next day brought us to a small village of stone huts, called Tankse, where we stayed for a few days. Tankse lies at the junction of the Harong and Muglib streams, and is so hemmed in by large black hills that I suffered from a feeling of suffocation the whole time we were there. We found two sights worth seeing there: one was an ancient monastery, which is perched above the village, "stuck" to the walls of rock, and the other were some strange Nestorian and Tibetan inscriptions on the moraine rocks, at the mouth of the Harong valley. The way to the *gompa*, or monastery, lies along gloomy, rough paths. The monastery dogs tugged hard at their chains and barked loudly as we made our way into the

praying-halls. The entrance to the *gompa* is insignificant and small, but its ornamentation is fantastic. It is quite obvious that the building must be very old. The atmosphere inside is damp and impregnated with incense, and the tiny oil lamps give out a very inadequate light, which flickers in the draught, casting a curious shadow on the walls. A statue of the founder of the monastery is put in a good light; he has a curious staring expression, but when the lamps flickered it seemed as though a smile passed across his face for a moment. We were just able to make out the old wall-paintings by the light of our torches, and these, from the point of view of art, were the finest we had yet discovered. They had not been copied from anything, but were the work of an artist who had used all his skill to create an impressive effect, though what the various scenes were meant to depict I am still at a loss to know.

At the mouth of the Harong valley, among the rubble and stones, are large granite blocks at irregular intervals. The surface of these large rocks is highly polished; but, as every geologist knows, this is caused either by the rubble or by weathering. Through evaporation, caused by the capillary attraction of the moisture in the stone, or so-called "mountain dampness," the salts and their component parts, dissolved in water, become separated from the surface, particularly iron and manganese oxide, which results in this polished effect. There are curious inscriptions on these rocks, which, unfortunately, are often too badly preserved to be intelligible. Among the various inscriptions the

one in Iranian is the most important, as it shows us that at one time some Nestorian Christians had lived there. There was also a *gupta* inscription, lately discovered, with a few lines from the Sutra of Mahayana school.

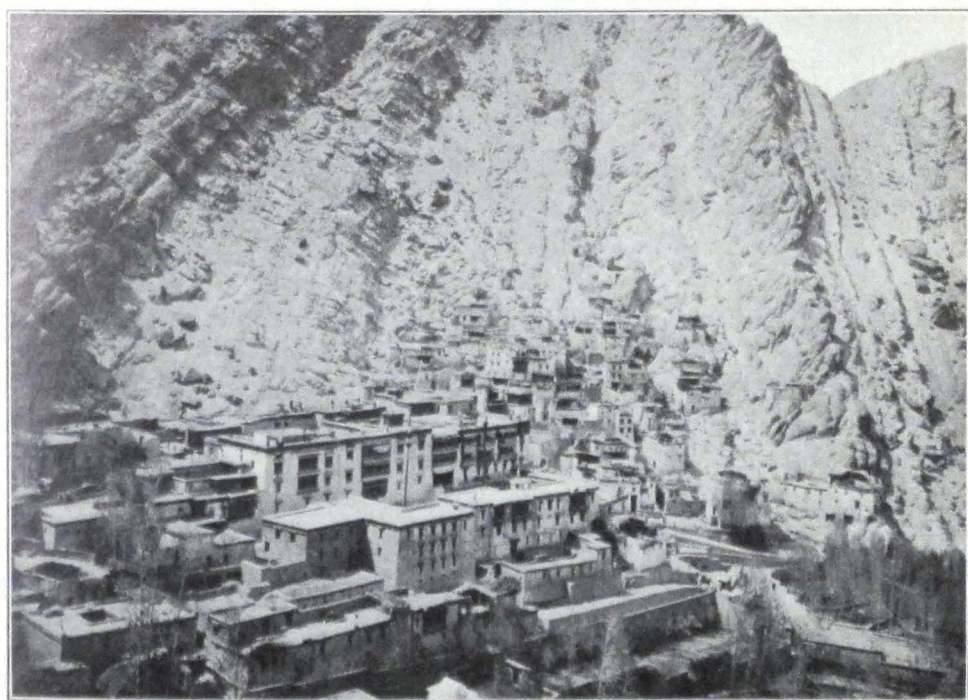
We had much to do in Tankse. Sabur Malik appeared one day with some fine yaks, which he had purchased in Hanle, to be used for the journey across the Tibetan plateau. The servants had to get busy stitching and sewing the yak packsaddle-bags, which wanted mending, and redividing the loads. Abdul, who had a high fever, and was apparently suffering from mountain sickness, had to be doctored. We ourselves were fully occupied with our photographic and topographical work and the dispatch of a voluminous post. Abdul grew steadily worse, so we made up our minds to send him back. One evening the servants appeared, headed by Habibullah, who begged that a sheep might be sacrificed to Allah to restore Abdul to health. We sanctioned this, because the servants would have less to do if Abdul got better and they also could satisfy their hunger with the mutton.

We reached the Pangkong Lake, by way of Muglib, on 22nd July, and spent a few lazy days on its banks, which we shall not forget. The lake lies sunk between golden mountains like a deep blue fiord. Its basin, carved out by glaciers of the ice age, has a length of fifty miles and a width of only three to five miles. To the north lie yellowy red mountain ridges, while to the south rises a steep chain of mountains crowned with glaciers, overlooking the Harong valley. The

yellow clay terraces are evidence that the level of the lake was higher at one time. One could sit here for hours watching the play of colours on the mountains and the lake, which one would look for in vain in Europe, even on the Adriatic. I tried to make a water-colour sketch, but every quarter of an hour the colours changed, so I gave up in despair. The atmosphere was incredibly clear, particularly after the heavy downpour of rain which had veiled the distant hills in a violet haze. As the lake varied, so did the sky. Nature seemed in a continual state of unrest. At one time the sun shone and then would follow a hailstorm; for hours all was peace and then suddenly out of the blue came a storm which threatened to blow down our tents. There were serene nights, with the moon sparkling on the snowy peaks, then again great black clouds would push across the silvery face of the moon.

I had a pyramid of stones built on the southern bank of the lake as a landmark for my survey work, with which Juma, one of the servants, used to help me. We rarely met anyone on these trips, except occasionally *changpas*, or nomads of northern Tibet, and men from the province of Kam. These folk are a bad lot—thieves and robbers—so Juma told me, who had spent a year in Lhasa and had there learned all there was to know about the inhabitants of the province of Kam. We had pitched our tents near the edge of the lake, and the play of the tiny waves breaking on the sandy bank reminded me of the many quiet hours which I have spent dreaming on the shores of the North Sea.

We said good-bye to the Ladakhis at the small settle-



LADAKHI WOMAN AND HER HUSBANDS

A SYSTEM OF FRATERNAL POLYANDRY EXISTS IN LADAKH WHEREBY IF A WOMAN MARRIES, HER HUSBAND'S BROTHERS AUTOMATICALLY BECOME MINOR HUSBANDS AND LIVE WITH THE WIFE IN TURN.

HEMIS MONASTERY

THIS MONASTERY WAS FOUNDED IN 1644 A.D. AND LIES UP A SMALL SIDE VALLEY OF THE INDUS

ment of Phobrang, while ahead of us lay the unknown region of the north-west Tibetan highlands. Phobrang, at an altitude of 14,658 feet, consists of a few poor stone huts standing in some fields. But we were not the only guests in this out-of-the-way spot; there was also a merchant from Leh staying there, in order to purchase the expensive *pashmina*, or fine wool from sheep. The final preparations involved purchasing ten more yaks, a few horses and seven sheep, which were loaded up with barley and maize as well as sugar and flour. The porters had to work hard, for they had to make sacks for the sheep, mend the yak saddle-bags, shoe the horses, and look after the loads and divide them up.

At an altitude of 18,700 feet up a steep side valley of the Phobrang river lies hidden the weird little lake of Togumtso, which I went to look for on 2nd August. Two *changpa* families had pitched their black yak-hair tents here, which were guarded by large dogs. Yaks, asses and goats were grazing in the green valley, and the country-side, bathed in sunshine, was still save for Kurrum, who would insist on chasing the young donkeys. This game had an unfortunate ending for him, for as he was pursuing one wretched little animal, who was frightened out of its wits, the mother suddenly lashed out and caught Kurrum a violent kick, which sent him limping back to me. In several places we saw marmots busy digging their holes, which were all over the ground, and who continually let forth their shrill little whistle. Kurrum would suddenly make a dart for these little creatures, and be utterly astounded and completely puzzled when they suddenly vanished

into the blue! We clambered up over large rocks, old moraines and boggy pasture-land. The sky was of the clearest blue, with not a breath of air. Close to the moraine which dams the lake was standing an enormous black yak, which did not move a muscle even when we came within thirty yards of him. Perhaps he was a cat that walked by himself.

We were somewhat exhausted when we arrived at last at the tiny blue-green lake. We lay down on the grass among the flowers, and my porter, Tsang Tsang, brought me lunch. A few wild-geese watched our movements anxiously from the water, but Kurrum was too tired to chase them. He lay down, all four paws stretched out, in the brilliant sunshine, and was soon fast asleep; only now and then did one paw twitch, or he gave a little grunt in his sleep. The servants, too, were asleep, taking their afternoon siesta. When I got back to our camp that night I discovered that I had nearly run into Bosshard up by the lake; he had followed another side valley south of the hills which surround the lake.

C H A P T E R T H R E E

A Land of Storms

WE left Phobrang on 3rd August, under an angry sky. Hail, snow and rain vied with each other as we ascended the valley, with terraces on either side, leading to the Marsemik La. On the way I took charge of the goats, which had hitherto been driven by Gulam Kadir. Poor Gulam Kadir! Little did he think then, as he went his way whistling and singing with his flock, that in three weeks' time he would be a victim of the cold of Tibet. The hills at these altitudes are nearly all smooth, but the rocks are disintegrated and crumbling. As we neared the summit of the pass we noticed the first *kiangs*, or Tibetan wild asses. They stood motionless at first, very much surprised to see us; they then trotted along with us a little way, stopped suddenly and finally hurried off.

The last part of the day's march led through a mass of gigantic rocks. We were continually enveloped in a thick fog, and the ground and the rocks were steaming as the blanket-like atmosphere closed in on us. We spent only a few minutes on the summit of the pass, which is 18,350 feet high, and covered with large black rocks; we then had to descend the north side by a rough path, beside which ran a small stream. The weather was most unsuitable for topographical work, and it was only now and then that we caught a glimpse

of one of the high snowy peaks. It was, in fact, a real April day, or rather a typical Tibetan day. When the sun came out it became pleasantly warm, but one had scarcely time to enjoy the sunshine before it began to hail. We entered the Spanglung valley, after crossing steep hillocks of hard rubble, and spent a miserable night there, the rain pattering down on the sides of the tents mingled with the sighing of the wind.

The next march, to the grazing-ground of Pamsal, was very tiring for the animals, and some of the yaks, in fact, received injuries to their hoofs. The rivers here have carved out deep beds, filled with boulders, and with terraces on either side, and the crossing of these streams proved at times most difficult. We frequently came across wild asses, and Bosshard later shot a fine specimen. I went ahead of the caravan, and spent the middle of the day resting in the shade of a ruined stone hut by the side of a bubbling stream. Juma soon fell asleep. I really believe that that man could sleep anywhere, at any time of the day or night. Kurrum, who found it very hot, lay down in the shadow of the wall and waited with tense excitement to see if I would throw him a bit of bread. West of us were snowy mountains, soaring to heaven with their dazzling white peaks, one of which must have been peak No. 26/52 (approximately 21,482 feet high) of the Indian Survey Sheet. The stream which we were crossing was in flood, and I was rather worried about Kurrum, but he managed to fight his way across in spite of the waves.

We had a few days' rest in Pamsal. There were a

few tamarisk-trees growing in the valley, so we were still able to have our evening bonfire. The beauty and grandeur of the mountains increased as we rode up into the Chang Chenmo district. Standing out against the blue sky like a sharp pyramid was a brick-red peak, while in the foreground were massed great yellow and brown rocks. Twice we had to cross the clayey foaming Chang Chenmo torrent, which was no easy matter, with the swirling water roaring round the horses. Abdul rode his pony into a whirlpool, and was on the point of having to swim ashore when at the last minute the pony managed to get a secure foothold. At Kyam we pitched our tents close to the hot springs, which other travellers have already visited. Bosshard here put up an improvised bathroom with the help of some tent cloth, but when the Tibetan wind blew, with its usual bitterly cold blast, there was not one of us who was willing to make use of the world's highest bathroom. We spent a pleasant evening with Captain Garry, who had been shooting Tibetan antelopes in this district, and who was well satisfied with his share of heads.

In a few days we were to come to a more unknown district, but one which, however, Rawling and Deasy had already visited. The picture of the Tibetan high tableland remains clear in my memory. The valleys were filled with boulders, and widened out into flat open spaces, so that one could see a long way ahead, while to the south-east was an imposing array of snowy peaks, fringing the Dyaptso, which obscured our view. On 14th August the temperature fell to -4° . *Chu sangpo*, or "good water," was what our people

from Phobrang called the camping spot below the Lanak La. Like motionless waves piled up in a gigantic mass lay the coppery mountain-tops, several peaks being from 18,000 to 19,600 feet high. We came across antelopes and *kiangs* herding together, and living on the little patches of grass which grow on the few level parts. Here and there in favourable spots we were cheered by the sight of the deep blue dog's-bane. Abdul did not improve in health as the days went on. As soon as we reached our camp he would wrap himself up in his thick *posteen*, or sheepskin coat, and lie down either to sleep or to groan. Kadir, however, was in a worse condition, and during the last few days had complained of a bad headache, and would often lie motionless on the ground for hours. We looked after him as well as we could, but he could not stand the altitude.

We crossed the Lanak La, at an altitude of 17,716 feet, on 16th August. It was a stiff climb, and our march was made worse by a biting snow- and hailstorm which blew from the east. On a plateau to the east of the pass a large herd of *kiangs* and antelopes were grazing. The ground had become very soft and sodden, so that the heavily laden yaks sank deep into the mud. In front of us rose yet another chain of snowy peaks, while to the north the undulating hills were clothed in different hues. A hailstorm was coming towards us; the bleak grey clouds seemed to scurry along as though they were being chased, while the hailstones, in thick white showers, came driving over the country-side. At such times one longs for the protection of a tent and a

cup of hot tea. A long weary march brought us to a grazing-ground, which the inhabitants of Phobrang called Shum, but which, however, corresponds with Tomar on the map prepared by Rawling.

Abdul was certainly better now, but there was no hope for Kadir. He arrived at our camp half unconscious, and tied to his yak with rope, suffering from weakness of the heart, and he was in a very low state of health. We ordered a day's rest here, as the porters from Phobrang were leaving us, and the loads had to be redivided, a task which Bosshard performed quickly and efficiently. These porters from Phobrang had rendered us good service; they were fine men and entirely unaffected by the cold or the altitude. At night they always slept in the open, and in the evening squatted round their yak-dung fire stripped to the waist while an icy wind blew round us. How contented are these children of nature: they have few worries and their lives are so simple, and seem to run in such smooth channels. They went off whistling and singing, driving their yaks back to the Lanak La after they had received their pay and *baksheesh*. We asked them to take Kadir back with them, but they declined to do so.

I set out from Tomar with Puntsok and Juma on a reconnaissance to discover the path leading up to the eastern Lingzitang plateau, which had not as yet been visited by Europeans. I soon discovered that the map drawn by Rawling was inaccurate and I therefore took a great deal of interest here in my topographical work. I next went in the direction of the green Sumjiling

plain, on which herds of wild asses and antelopes were grazing. The view was magnificent; one could never grow tired of gazing at those glorious brick-red mountains, the glistening chain of snow-peaks and the turquoise of the salt lakes. I reached a height of about 18,372 feet and there I was able to get a clear view to the north, where, through a gap, I caught a glimpse of the Lingzitang plateau. I saw here also for the first time the double pyramid which, like two Matterhorns, overlooks this plateau and forms a landmark for miles round (peak No. 1/52 Map of the Indian Survey Sheet). I made Puntsok erect a pyramid of stones on a ridge. One night while we were in camp at Tomar a wolf made an attempt to attack our herd of sheep, but Puntsok gave the alarm and soon the whole neighbourhood was echoing with the yells and whistles of our people. Bosshard and de Terra that day went out on excursions to the snouts of several large glaciers which descend from the mountains fringing the Aport-tso Lake to the south. Whilst most mountain regions of the earth are enveloped in a blue haze, caused by the dampness of the earth, which blurs and softens the sharp outlines, the Tibetan landscape is different; it is cold and clear, with a bright white light which creates deep shadows. The huge areas of bare rock and complete absence of green also increase the chilly atmosphere of inaccessibility which is such a marked characteristic of these mountains.

The following day at dawn we began another difficult climb up a steep dried-up valley. We made but slow progress, for our yaks would continually throw off

their loads. Three or four porters had then to seize these grunting beasts and hold them until the loads could be repacked. Kadir, who was tied on to a yak, seemed in a state of coma. Lobsang Tsering and Puntsok had taken over charge of the sheep caravan. Each step was taking us farther and farther into unknown country. We came upon many wide valleys, which formerly must have been the beds of large glaciers and gigantic rivers, lying amid the motley-hued hills. At times we seemed to see the smoke of a camp fire, but it was only sand-drifts stirred by the wind. Human beings simply do not exist here. The animals, the only inhabitants of these heights, are incredibly tame. Many of them have never before set eyes on a human being, for certainly no yak hunter has ever found his way into this desolate part of the Lingzitang plateau. On the afternoon of 21st August we caught a glimpse of the deep blue surface of a large lake which, according to the maps, is called Sirigh Jilganang Köl. A curious stillness lay over this lake. No European had previously set foot on its shores, for its name is not mentioned in any travel book. We discovered, however, that the name of the lake is given on old maps, though the shape is not accurately drawn. In all probability members of the Yarkand Mission of 1873-1874 saw the lake from a distance and were told that the lake was called Sirigh Jilganang Köl, or the lake of the yellow gorge or valley, from the golden-hued terraces which surround this expanse of turquoise water.

C H A P T E R F O U R

The Last of the Yaks

THE 21st of August was a red-letter day, as we were forced to make a definite change in our plans. Dawn was breaking as the cook burst into my tent with the news that our horses were just visible on a distant spur of a hillside and were rapidly straying farther afield. We roused the porters at once, and Juma and Sabur Malik set off in pursuit. After two days' fruitless search they returned to camp again in low spirits; but in the hope of still being able to find the animals we again sent out two parties of porters, with food, bedding and cooking utensils, and orders to search for eight days. Many a weary day's journey lay ahead of us during which we should never be below 16,000 feet, and consequently we had grave doubts as to whether we should be able to endure long marches in these altitudes. We therefore did not feel disposed to give up our horses as lost without making every possible effort to find them. It might perhaps have been better had we pushed ahead at once, but the grazing was good and Habibullah thought that the yaks would benefit by the rest. It was not till later that we learned from Sabur Malik that the *burtisar* (*Eurotia*) which grew near our camp was totally inadequate for the yaks. *Burtisar* is a short, uncultivated species of growth with thick wooden roots, suitable

for firewood, and when the bushes are not too small, yaks devour them eagerly; but whether a yak can live solely on *burtsar* is a debatable point. Yaks eat a vast amount, and I doubt if ours during the days' marches could satisfy their hunger from *burtsar*.

We generally used to set off at eight o'clock in the morning, and continued marching till late in the afternoon. The animals were then turned out immediately to graze on the so-called "meadow," and usually had to search the stony valleys or the sides of the hills for isolated clumps of *burtsar* or the thin grass of the plateau. As night came down the animals were brought into camp. At one time we used to allow them to graze during the night, but we soon realised that the rounding up next morning entailed such an enormous waste of time that we were never under way till ten o'clock. One must take into consideration the fact that a laden yak never, or perhaps very rarely, partakes of nourishment during a march. Sheep, on the other hand, are different, and will eat unceasingly while there is a blade of grass within their reach. Grazing-grounds on the north Tibetan plateau are few and far between, and one may travel for two or three days without encountering good pasturage. Animals, for this reason, become very weak and out of condition, and often succumb. Sheep are the most suitable, being the toughest and most self-reliant. On the other hand, when on a scientific expedition, where definite planned work has to be carried out, and in which covering ground rapidly is not usually necessary, then yaks as carriers are preferable.

It was at the Sirigh Jilga Lake that our grunting oxen began to die, and for some time we could not discover the reason. We made post-mortem examinations of two of them and found that the walls of their stomachs had been eaten through by either worms or leeches. The animals had therefore suffered from a lingering disease, which became worse as the grazing grew poorer, and this was what had befallen the animals. Curiously quiet and peaceful were those days by the blue Sirigh Jilga Lake. Every morning at early dawn Sonam Tsering left with his herd, while two other porters took the yaks to graze. Each of us also used to take a porter on reconnaissances, for there was much to do and see, and the time we were halting here was far too short for me. The topographical survey of the lake and the surrounding mountains kept me busy every day. The realisation that one is the first human being to penetrate a region has a peculiar fascination, and I eagerly explored the whole neighbourhood round this lake, and found my way up the dried river-beds and climbed some of the rocky crags. I also made a study of the animal life, and watched the black daddy-long-legs sidle about the golden terraces and marvelled at the small butterflies, of the *Macroglossa* species, which flew from flower to flower. There were masses of deep red flowers growing on the southern slopes of a siliceous limestone hillside. I used often to wander down to the edge of the lake, which lay like a finely polished turquoise in the midst of this yellow clay plateau. The water was a little brackish, but drinkable nevertheless, and it is therefore

not a salt lake, as the old maps tell us. Water-plants also grow in it, but are driven over to the eastern bank, and there form what looks like a solid mass of peat. A few water-birds, wild-ducks and sandpipers, were to be seen most days, and large white-tailed eagles often circled over the blue water. To the east a mighty grey rocky mountain rises in the form of a gigantic crag, while to the south a brick-red mountain ridge stands out against the golden sand-tinged plateau and the blue lake.

We had pitched our tent at the foot of one of the terraces so that we should get a certain amount of protection from the wind. The porters' camping ground was on the ridge itself, and Habibullah had parked himself there too with his herd. Kadir seemed to be a little better, but we were still very uneasy about him because he was continually spitting blood. One morning when he was sitting in front of his tent in the sunshine, and was taking a little more nourishment, I thought that, thanks to de Terra's excellent medicine, he had really turned the corner. When I returned to camp that night I found that the wretched man had died quite suddenly that afternoon, after a hæmorrhage. We were all very quiet that evening, and the porters went about their work with troubled hearts. Kadir was buried the next day. The grave was dug on the east bank of the lake, and there he lies in the shadow of those brick-red hills overlooking the blue water. On 3rd September the porters who had been sent off returned to camp, but without the horses. They had followed the tracks and had ascertained that these all led to the vicinity of a snowfield. Here the tracks

went off in different directions, as though a fight had taken place. Snow fell the next day, which made their task impossible, and they were forced to give up the search.

It was now a case of proceeding on foot. We were all lucky in being able to say that none of us was suffering from the effects of the high altitudes. Our path lay to the south of the lake which had given us so much pleasure as well as so much trouble and sorrow. We passed at the foot of the rocky citadel, in the shade of which I had so often rested and watched the playing of the tiny waves when they were driven by a westerly wind against the eastern bank. By midday we had found a tolerably good camping ground, with some *burtsar* growing near by, and at three o'clock Tsering arrived with his animals, who at once hurled themselves at the *burtsar*. It was the yaks who made the slowest progress; again and again we looked for signs of them through our field-glasses, but it was not till six o'clock that they arrived, one by one, and we learned the sad news that yet another two had succumbed. The loads had in consequence to be lightened considerably. We therefore buried our reserve supply of barley and petroleum. We also decided to be very economical with our tinned food. The worst day's march was still to come—next day. De Terra and I went on ahead in order to find the easiest path over the hills which lay in our way, while Bosshard stayed with the caravan. We climbed gradually in the early morning sun, and before long the blue-green surface of the Sirigh Jilga Lake lay before us. We looked back several times at

the caravan, which was, however, making very slow progress. One yak was lying on the ground, apparently unable to go any farther; and, while we watched, the load was taken off and we heard the sound of a shot as Bosshard gave him a merciful release.

We were now in a region entirely devoid of all vegetation. From a flat ridge we descended to another valley filled with rubble, through which ran a small silvery stream. Not only was there no vegetation, but we were unable to discover a single blade of grass, for the subsoil is composed of coarse rubble, gravel and very small powdered substances. At half-past five we reached a stream and found a spot more or less level on which to pitch our tents. The caravan, however, did not arrive till very much later. Several more yaks had collapsed, so that we now had only twenty left. In spite of having had a tiring day, Bosshard and I made a few reconnaissances, as it was absolutely essential that we should find some grazing-ground next day, otherwise we should certainly lose the remaining yaks. The porter Tsang Tsang was sent off in another direction to look for pasture-land. One by one we returned, and it was dark before Bosshard, worn out, came back into camp. I had found a little *burtsar* about three-quarters of a mile away, and Tsang Tsang, through field-glasses, had seen in a side valley in the distance a few green patches of grass.

We drove the weakest of the yaks that night out to this grazing-ground, while the others and the sheep had to content themselves with the rather scanty *burtsar*. Bosshard just before sunset climbed a high ridge, and

from there had a fine view of a large plain, the Aksai Chin, which was our next objective. During the night we were awakened by a curious rumbling and snarling sound, and something appeared to be entangled in the ropes of the tent. By the dim light of our lamps we could make out the form of one of the yaks, who looked at us accusingly. How we wished we could do something for these poor animals! But we were helpless in the matter. One can take provisions for horses and for camels in cases of emergency, but yaks must have fresh grass.

The following day we left half our baggage in the camp and set off with the other half and the remaining yaks to a camping ground where there was grass. I had to climb a peak about 17,400 feet high in order to carry out a topographical survey. It was tiring but well worth the effort, as I was able to get a specimen of black limestone containing some fossils of the cretaceous age, to the great joy of the geologist. Below me I saw the caravan wending its way to the small ridge, accompanied by shouts of "Ribo, ribo!" from Sabur to urge on the yaks. We reached the new camping ground by twelve o'clock and there met Tsang Tsang and Puntsok, who had taken the weaker yaks overnight. At the lower end of our camping ground the pasture was even better, and herds of antelopes were grazing and playing about. In the distance were snowy peaks, and we had the finest view that we ever got during the whole expedition. The sun had already begun to disappear as we climbed another peak about 18,300 feet high. Blue-violet



STATUE OF A LAMAISTIC SAINT

THIS STATUE IS IN TANKSE MONASTERY AND PROBABLY REPRESENTS THE FOUNDER OF THE MONASTERY.

shadows were slowly creeping up the sides of the hills, while the highest peaks were tipped with gold by the last rays of the setting sun. A deep feeling of peace seemed to have settled on this mountain world; there was not a cloud in the sky, while in the west the vault of heaven was bathed in gold, against which rose the dark outlines of the Kara-koram peaks. The moon was already casting its silvery beams over this scene as we reached our tents once again.

We moved our camp the following day to another side valley where the grazing was even better. In the meantime we had sent for the baggage which we had left behind. This valley widens out to the north into a broad plain, and we saw for the first time the Kunlun range, with its many snow-capped peaks. It was a glorious, clear autumn day, as the day before had been, and in addition we were lucky enough to have all we wanted—water, pasture-land and firewood. We need not have given up hope that our yaks would never recover their strength, as even the long march to the Aksai Chin had been completed without loss. According to the map our camp appeared to be quite close to the Bitter Salt Lake, on the banks of which Sir Aurel Stein and Sven Hedin had halted.

The next day I saw the blue-green lake, which previously had been hidden by a small ridge. We were able to observe from here several curious mirages. Sometimes we seemed to see blue patches of water in among the boulders, in which were reflected the peaks above. One afternoon we saw the edge of a cumulus cloud tinged with all the colours of the rainbow. The

sky at night was fantastically beautiful, the black heavens being aglow with a radiance which I have never seen anywhere else.

Antelopes and *kiangs* were grazing in the plain, and Bosshard shot a large wild yak. We were now in the wide long valley which borders the Kunlun to the south. In the west rose a most impressive chain of peaks, about 21,190 feet high, which must have been those that lie to the south-west of Lake Lighten. One day we learned from Abdul that Habibullah was trying to retard our progress as much as possible. He reckoned that, provided we reached Yarkand late enough in the year, we should be unable to send our people back over the Kara-koram pass to Leh, for it would be closed. Habibullah as a caravan leader was in every way an utter failure, and we were thankful that we had Sabur Malik. Habibullah was practically useless, and his only real accomplishment was to make incredibly funny faces, and, in addition, he had the most revolting habits. Subhana likewise was no asset, for he was very young and extremely lazy. Juma was no fool, but he worked only when someone watched him, when he tried to give the impression that he was very busy. Our best men were Sabur Malik, Asis Sheikh, a small, tough lad, Tsang Tsang and the two Puntsoks.

On 13th September I went to the edge of the Aksai Chin Lake, where the water is absolutely bitter. Large blocks of salt lie all over the ground, so that at one time this lake must have covered a far wider area and is now undergoing a process of drying up. Here again, especially on the southern banks, very fine yellow

terraces have been formed. The weather here was always blustery ; in fact, daily about ten o'clock a west wind would rise and blow steadily till sundown, though sometimes it veered round to the east or north. To the east of our camping ground there was a jagged peak of a deep red shade, while in the background was that magnificent group of snow-bound peaks rising from the banks of Lake Lighten. A curious misty light lay over the country-side as I set out on 14th September on a reconnaissance in an easterly direction. It was again very stormy, and when I was going against the wind I found it necessary to hold a handkerchief against my mouth.

It was here that we made our momentous decision to go to Chinese Turkistan via Shahidulla, as we hoped to be able to get help sooner from nomads in the upper Kara-kash river valley than in the regions to the north of Lake Lighten. It was with a heavy heart that I abandoned the trip to Lake Lighten, which I had for many years looked forward to seeing. Often during the evenings we sat with our maps fixing various distant landmarks. Travelling in a westerly direction, we ought to come to human settlements in about fourteen days, and the country did not seem to be difficult. We therefore moved our camp to the south bank of the Aksai Chin Lake ; but even during this small march three yaks collapsed. We had lost all faith in our yaks. We now had to come to a decision and take definite steps in order not to endanger the lives of the whole caravan, and for that reason we were compelled to leave the greater part of our baggage here, for

the loads were too heavy for the surviving animals. At the foot of a hill south of the lake we made a dump and, as a protection against the rain, covered it over with the inner lining of a tent. The scene round us was grand: the lake, with its little bays and peninsulas; the broad valley in the distance, where the white sand-drifts are blown about, and would be chased yet farther by the storm; while in the background towered the stern features of the Kunlun mountains. To the west of the lake the red mountain-tops, which later we should have to cross, stretched away to the south.

We pushed along the south bank of the lake on 17th September, and eventually pitched our camp on a ledge on the west bank. The terraces on the south bank of the lake have been cut through by torrents of rain, so that small ravine-like rifts have formed in the clay. These dried-up gullies often end in blind alleys, nine or twelve feet high. On one of my expeditions I once found myself in one of these gullies, where a curious scene met my eyes. Everywhere lay the mangled remains of antelopes, and in the midst of these bones I noticed one or two bleached skulls of yaks. What could have happened here? What tragedy had taken place? The explanation was not difficult to find, because all over the place were the tracks of wolves, who used to drive their prey to this spot, from which there was no means of escape. I could easily picture the tragic end which these wretched antelopes had met with here. There can be no doubt that many animals, either through fear of the wolves or despair, have stumbled in the snow and there died in misery.

In spite of a comparatively easy march over the old bed of the lake, eight more yaks succumbed. When at last the rest of the animals had reached the camp the prospects for the next day were indeed bad. However beautiful the country round us might be, and the icy mass of the Lake Lighten peaks aflame in the rays of the setting sun, we were unable to appreciate the beauty of it all, as we were so worried about our animals. There was also not a drop of water in this camp. Late that night the porters tried to dig a well, but the water proved to be salty. The following day it was imperative to find water. I studied the map. If by midday our search proved vain we should have to go to Stein's camping ground on the northern shores of the lake, where he had found water. I therefore made the following arrangement with Bosshard and de Terra: both should set out at half-past three next morning to carry out a reconnaissance. Bosshard was to go to a possible spot in the mountains to our west, while de Terra was to look in the vicinity of Stein's route for some water. Each took a porter, whom he was to send back at eight o'clock with a report, to a small black hill where I should be waiting for news with the caravan.

Next day at half-past eight I saw de Terra's porter slowly approaching over the level ground by the shores of the lake, but he brought bad news, for they had found no sign of water. It was nearly ten o'clock but there was still no sign of Bosshard's porter. Had he made a mistake or had some disaster overtaken him? I now left one porter behind to tell Bosshard that we

had pushed on to Stein's camping ground, where we were sure to find water. I then went on ahead and followed de Terra's tracks, though the going in the soft clay was very tedious, as one sank in deep at every step. It was appallingly hot in the middle of the day. I met de Terra in an arid valley, where we tried to eat our lunch, but the cold meat and stale bread were so unappetising that we confined ourselves to apricot jelly, of which we had each brought a ration in a small tin. Afterwards we set out again for our objective, which was not difficult to find, though the path was more tiring than we expected. There was no sign of the caravan, and probably it would be dark before it arrived. We got a great shock when we found that here, too, there was no water; the river-beds were dry and the ground parched. I went with Habiba up a valley which led into the Kunluns, but again there was no sign of water. About five o'clock our sheep caravan arrived, but there was a long interval before the yaks came. Some of the porters who were carrying loads appeared, and told us that several more yaks had collapsed. Nobody knew anything about Bosshard. Then suddenly his porter, Subhana, appeared, with the news that Bosshard had sent him off with a written message at eight o'clock. Subhana said that he had lost his way, but had eventually picked up the tracks of the caravan and had followed. Puntsok, whom I had left behind at the black hill, likewise soon appeared. Our first thoughts naturally were for the safety of Bosshard. Where was he? The nights were bitterly cold and often the thermometer fell to -12° . We

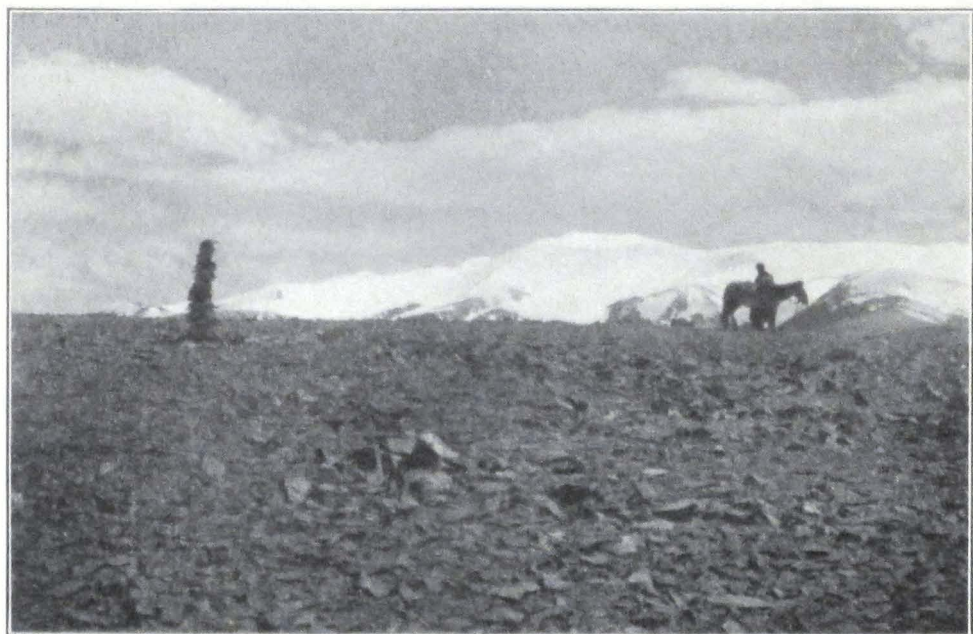
therefore sent back Subhana and Puntsok with woollen blankets, Cognac and tinned food, as they could easily follow the tracks back again. The rest of the porters began at once to dig a hole for water.

We were all feeling thirsty after our tiring day's march. We found a small bottle of concentrated lime juice in one of the provision chests and each of us drank a drop, though later we bitterly regretted it. The sun was setting as we searched the hills to the west through our field-glasses in the hope of being able to see Bosshard, but it was in vain. Night soon fell and the stars above were incredibly beautiful. We kept a large fire going, and now and then fired off shots in order to help Bosshard to find us. He would undoubtedly be able to see the lake from the hills to the west of us. At half-past eleven the moon rose, with the result that it was almost as clear as daylight. At last, very late that night, we had something to eat; we still possessed a tin of beans and bacon, and, as luck would have it, a tin of jam. At two o'clock Habiba came into my tent and told me that the porters had found water and that he had made tea. Unfortunately the water was so salt that we were unable to drink it. Sleep was out of the question. At four o'clock Kurrum began barking, so I guessed that Bosshard must be somewhere near. I was right. He had arrived after tramping for twenty-four hours on end. He had come to the conclusion that, as Subhana did not return, the caravan would reach him in the afternoon. As this did not happen, there remained nothing for him to do but to go and look for us. Luckily he had discovered our

tracks, but darkness very quickly overtook him and he was forced to wait till the moon rose before he could continue his journey.

The next question we had to consider was that of finding water for both men and animals. To make quite sure, we made up our minds to go back to the camp where we knew there were wells. De Terra and I started off very early in order to follow round the east bank of the lake and also to obtain an outline of the shore, during which time Bosshard could take a rest. He, in the course of the day, was to follow the known west side of the lake and meet us at the Well camp. The weather was favourable, the sun was warm, and fortunately it was not windy. The surface of our path was very rough and treacherous, as in some places we encountered an uneven salt clay bed, which at best could be compared only with a newly ploughed field.

About nine o'clock we saw in the distance a streak of silver, which seemed to be a little stream rushing down into the lake. Was it yet another mirage? Our throats were parched and we were all wondering whether we should come to water before going all the way to the Well camp. This time, however, we had not been deceived. The stream was frozen in places and the water was icy cold. We drank slowly and deliberately, but each of us in fact emptied about six mugfuls. We then pushed on ahead, and about one o'clock we had another surprise, for we suddenly found ourselves confronted with a broad river in which flowed an enormous volume of water. There were great blocks of ice floating down, which made the crossing no easy



HABIBA AND ABDUL

HABIBA, A KASHMIRI, WAS AN EXCELLENT COOK (LEFT). ABDUL, A YOUNG BOY, WAS A GOOD LINGUIST AND WAS INVALUABLE THROUGHOUT THE EXPEDITION (RIGHT).

TIBETAN PLATEAU

VIEW FROM A HIGH RIDGE ON THE WESTERN TIBETAN PLATEAU WITH SNOW-CLAD PEAKS OVER 20,000 FEET HIGH, IN THE BACKGROUND.

task. Habiba and Standsin were with us, and our worthy Ladakhi had to enter the icy cold water first in order to find a suitable place for us to cross. We then waded into the water, which came nearly to our knees, so that we were half numbed when we reached the other side, and had to massage ourselves vigorously to bring back the circulation. In spite of the fact that the Aksai Chin is a salt lake there were flocks of geese on the waters, and several fine herons. We got back to our old camping ground about three o'clock, and drank copiously from that glorious spring water. Now hunger made itself felt, and we turned our attention to finding *burtisar* and yak dung, so that we could build a large fire for Habiba to prepare his simple but most welcome meal. As there were no signs by five o'clock of either Bosshard or the caravan, and dusk was slowly creeping over the country-side, we had to consider making some arrangements against the cold night by finding a nook or refuge. The inner lining of our tent, which had been left behind here, now came in useful. We fetched it from the dump, and with the aid of two ice-picks tried to dig out a cave-like hole. The ends of the tent-lining had to be weighted down with stones and earth so that the wind would not blow the whole thing away. Our draughty shelter was just big enough for de Terra and me, provided we sat with our knees drawn up. It grew colder and colder as night came down, and the thermometer fell rapidly to 21°. We kept a large fire going with yak dung in front of the tent-opening, but the smoke nearly suffocated us. Standsin and Habiba had squatted down in front of

their fire, and we thus awaited the night. I kept looking at my watch, but the time crawled by. It was now nine : what could Bosshard be doing? Possibly more yaks had died. Everything was pitch-black round us, and we searched in vain for any signs of a light. We grew colder and colder, for we had had to let the fire go out some time ago. Sleep was impossible, so we shifted over to the other fire where Habiba and Standsin were sitting. We each wrapped ourselves in our tent-lining and huddled round those flickering flames. Eventually sleep overtook us. About eleven, whilst I was dozing, I thought I heard the sound of footsteps and whistling. I woke de Terra and the others, who were rolled up like hedgehogs asleep on the ground. Out of the darkness emerged two yaks and a few sheep, accompanied by Puntsok, who gave me a letter from Bosshard, in which I learned that more yaks had succumbed and that he would not be able to join us till next day. He had sent us a tent, our sleeping-bags, and also a case containing cooking utensils. Even in spite of the fact that we tucked ourselves up well and drank cups of steaming tea we were unable to get warm that night.

20th September was an endless day. The wind was blowing so fiercely that we could hardly go out into the open, and the gusts sometimes were so strong that we had to cling on to the tent. In order to pass the time we got out books and old newspapers from the dump, and read or did crossword puzzles and slept. I waded through Deasy's book, and obtained a little consolation for our position from the fact that other

Tibetan travellers also had suffered casualties. It was not till late that a few yaks turned up, bringing my tent and various other things, but Bosshard himself did not arrive till next morning, when he reported that the caravan was in dire straits.

We were about to unpack all the loads and redivide them when we discovered that the porters had left behind a whole quantity of baggage at our ill-fated camp. Habibullah and Juma, therefore, as a punishment, were made to go back with some yaks to fetch it, and they did not return till half-past three. We now had to turn our attention to deciding the amount of baggage we could take with us, as anything which was in any way unnecessary had to be left behind at our dump. Of the eleven surviving yaks, three had one foot in the grave, so we came to the conclusion that they would be better dead. The three corpses looked just like black rocks on the ledge above the lake, and the ravens that night held a death watch. We left camp on the morning of 24th September with very mixed feelings. We were parting most unwillingly with our possessions which had to be left behind here, wondering if we should ever see them again.

A march of about fifteen miles took us a good stretch forward. We passed our unlucky camping ground and halted in a broad but desolate valley hemmed in by weather-beaten rocks. It was through a neighbouring valley that Sir Aurel Stein passed on his way to the Kara-kash river, and we had hopes of striking his route next day. We found no water, but we had taken from the Well camp a store of ice to last for three or

four days. The weather had changed again and a grey mist clung to the peaks of the Kunlun. As luck would have it, we found a few small patches of grass in the vicinity which gave the animals a grazing-ground. In the course of the day yet another yak died; but the remaining seven, in spite of the long journey, arrived in good time. We were also able on the following day to cover a good distance, and it was a miracle that another yak did not succumb.

Early next morning, as the sun was rising, we set off, and we had fine weather all day. We had to cross a chain of mountains to the north-west in order to reach the next plain, in which were several salt lakes, but the crossing was not difficult and the ascent was gradual. From the summit of the pass we had a view over the plain, which was covered with salt crystals, in the middle of which were one or two deep blue pools of salt water. The descent was difficult, inasmuch as at every step one sank deeply into the sandy surface. We camped on the northern side at a spot where, in 1908, Sir Aurel Stein had pitched his camp No. 475. It was a bleak spot—no grass, no water and no fire-wood.

On the following day we pushed on in a westerly direction, in the large valley which borders the Kunlun to the south. The nights were bitterly cold, the minimum reading of the thermometer being 16° Fahrenheit, and at five in the morning it registered 15° Fahrenheit. We therefore saw to it that we wasted no time in getting started in the mornings, but it always took us about two hours before we could get our feet warm. The

original outline of the salt lake was clearly visible on many of the clay terraces. The path over the old dried-up bed of the lake was again very hard going, because at every step one sank about four inches into the clay and the yaks were making very slow progress. At midday we turned into a side valley leading to the Khitai Dawan, which Johnson, in 1865, and Sir Aurel Stein, in 1908, had already followed. At the mouth of the valley we were able to recognise the remains of old firestones and the traces of carvings on the rocks. We went farther up the valley after lunch. Gigantic quantities of water must flow down here at the time when the snows are melting, though then the only sign of this large river was a small stream, which, however, we welcomed gladly, as we had come to the end of our store of ice. We noticed some isolated clumps of *burtisar*, which the sheep made for at once, as they had had nothing to eat for two days. Beyond the valley we saw a mighty array of snowy peaks, which must have been those lying in the main chain of the Kunlun. Towards four o'clock a heavy storm arose, which stirred up the sand, driving it down the valley. We lay down under a small rocky ledge which afforded a slight protection from the wind. We saw a little grass on the opposite valley, so we sent off the sheep at once to graze.

We had arrived rather late in the afternoon, and it grew darker and darker, with no sign of the yaks. Several times we climbed to a high rocky ledge behind our camp in order to look round through the field-glasses, but it was all in vain. Fortunately we had the

small kitchen-tent with us, which had been carried by one of the strongest of the sheep, and we also had divided up the provisions into separate loads. As night was falling, we lit a fire to guide the caravan. About nine o'clock we crawled inside our small tent, dead-tired, had our simple supper, which as usual consisted of tough yak-flesh, and then settled down to sleep on the sandy ice-cold ground. It was so intensely cold that Abdul and Habiba joined us in the tent, which made things a very tight fit, and we had to sit wedged together, with our knees drawn up. Our sleeping-bags and blankets were with the caravan, and the cold did not permit much sleep, though Abdul and Habiba were soon snoring away in competition.

The interior of our tent, lit by one small stearine candle, presented a curious sight. It reminded me of pictures one sees in travel books of polar expeditions. I do not know if my companion slept that night, but I myself lay awake, gazing at the weird figures outlined against the sides of the tent by our poor little candle. I thought of the caravan and wondered how the whole expedition would fare. It was a curious feeling, here at an altitude of 16,900 feet, entirely cut off from the rest of the world, spending these night hours in a ragged tent. I suddenly realised that in Europe dusk would be falling over the country-side and the first lights would be twinkling in the twilight. We had still a long time to wait before a mail could arrive, and anything might happen between now and then. About eleven o'clock I heard voices, and the porters appeared with two yaks, so that at all events we were

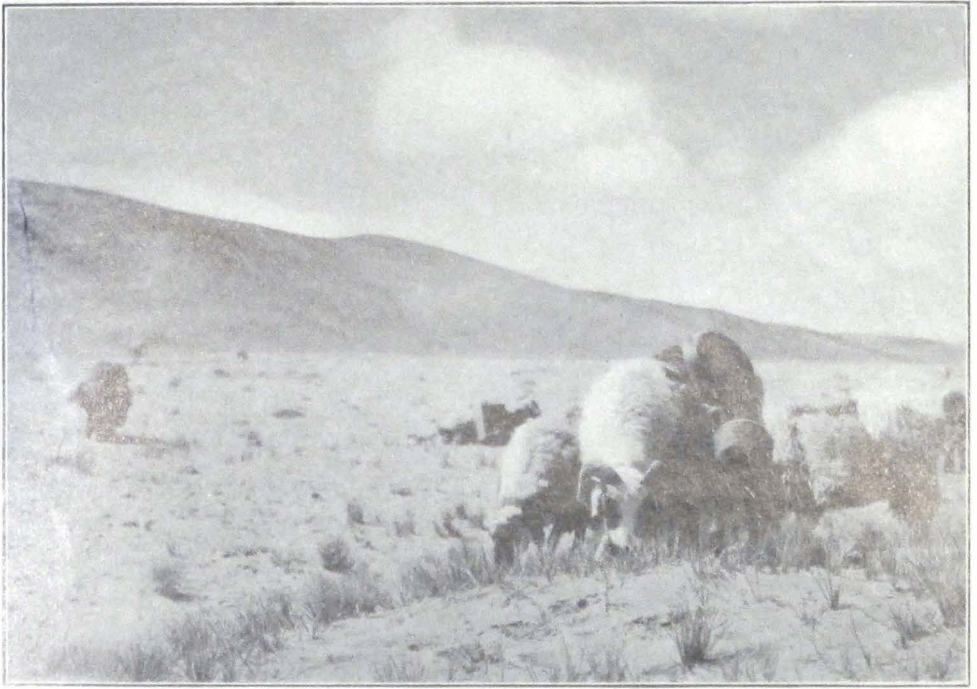
able to have our tents and sleeping-bags. We stayed here as the pasture was fairly good and the animals seemed to be in need of a rest. I made use of that day—27th September—to make an excursion up the valley to get as near as possible to the great Kunlun mountains.

I left our camp at half-past eight, but I took till one to climb the large moraine ridge which barricaded the upper part of the valley, for, owing to its great height and steepness, I could advance only very slowly. From the highest point which I reached I was able to get a very instructive insight into the topography of the Kunluns. There were mighty glaciers down the sides of the mountains, which did not, however, reach the bottom of the valley. These valleys and large moraines speak to us of the gigantic ice streams which during the ice age poured down in full flood. I was able to add considerably to Stein's map, and made a complete series of photographs of this region hitherto not visited by a European.

Saved by Sheep

WHEN we woke on the morning of 28th September it was snowing hard and the ground was quite white. It was curiously quiet and still, save for an occasional shout of a porter or the crunching of footsteps in the snow. The loading up of the sheep and the two yaks took much longer than usual; however, when we did get under way, about half-past six, the weather had begun to clear. We turned into a side valley which leads to the Khitai Dawan, the summit of which is 16,505 feet high. Before long the sun was shining so brightly on the snow that we had to put on our dark glasses.

The ascent to the summit of the pass was not difficult, the path being clearly shown by old stone signposts. On the summit is a large pyramid of stones, and here we halted. Looking back, we saw our tracks curving like a black snake in the snow. Our tired sheep were not far behind us, but the last two yaks, who died that evening in camp, did not arrive for some time. Through field-glasses I was able to see that one of them had again collapsed, and I felt that it was the last of him. However, they loaded him up again and he plodded on, and at last these two animals reached the summit. Habibullah and Sabur Malik, who were with them, greeted the stone pyramid with cries of "La Illaha il Allah!" and



SHEEP TRANSPORT

THE STRONG TIBETAN SHEEP CAN CARRY UP TO 30 LBS. AND ARE MOST SUITABLE BAGGAGE ANIMALS FOR A JOURNEY ACROSS THE TIBETAN HIGHLANDS.

INTERIOR OF A KIRGHIZ TENT

THE KIRGHIZ ARE A HARDY TRIBE OF NOMADS WHO LIVE IN "YURTS" OR ROUND TENTS LIKE BEEHIVES.

prayers were then offered to Allah in thanksgiving that we all arrived here safely. Sabur sang a verse from the Koran and also offered a gift to the gods of the Lamas by placing a few stones on the heap of stones, adorning them with a few hairs from the tail of one of our yaks. I think we were all pleased to reach this stage, for from now onwards the way led downhill, into regions where it was bound to be warm and mild.

Almost at once we came to large moraine fields and sighted grass fields again, which are marked on Stein's map. There was still no water, and as the snow had melted during the day we were forced to fall back once more on our store of ice. I do not think that any of us will forget that afternoon, which we were forced to pass in this unattractive spot before the two yaks and the porters, with the tents, sleeping-bags and covers, arrived. A heavy storm arose, and by night the temperature had fallen to 20° Fahrenheit. The cooking-tent and one other small tent arrived with the sheep. Bosshard used to sleep in this, for we had had to leave the big one at the dump at Aksai Chin. Huddled together, we three Europeans sat in this draughty abode, which at any moment might have been carried away by the wind had we not taken care to hold on to the pegs. We managed between us to light the small spirit-stove and make tea. Several times the wind succeeded in tearing loose one edge of the tent, but the servants were ready with large stones to keep it down.

The night of 29th September was bitterly cold and the temperature fell several degrees, which may have accounted for our lack of sleep. In the morning it was

still 17° Fahrenheit in the tent, but a fine bright day greeted us later. I then went across to the other side of the valley to get a view over the plateau, for Subhana had the day before sighted another lake, and, sure enough, I caught a glimpse of its blue surface, surrounded by terraces and white salt crystals. Here I said farewell to the Tibetan highlands. We were now on the downward track into the deep valley of the Kara-kash river, which leads to the Tarim basin. In spite of all the difficulties and quarrels which had accompanied our fatiguing wanderings in the highlands we held very pleasant memories of this part of the expedition. Never before had I felt so at home as in this queer, uninhabited district. Travelling alone, except for my servant, in the stillness of this mountain world, while I sketched or took photographs or made observations, I sometimes felt as though I were no longer on this earth, but on another planet. There was no one to disturb us, no one to worry us with the red tape of officialdom. Here we had absolute freedom and could do exactly as we pleased. We wondered what would happen in Chinese Turkistan when we had to reckon with the fact that every day we should be in contact with men. Should we then get our own way? As we descended the upper valley of the Kara-kash, and the Tibetan mountains grew farther and farther away, I could not get rid of the feeling that we had lost our freedom, and later I often yearned for the liberty we had enjoyed on the high Tibetan plateau.

Our path led down over large spread-out moraines and rocky fields. We passed several small stone monu-

ments and about ten o'clock came to some tumble-down stone dwellings, which must have been the Haji Langar that is marked on Stein's map. A massive peak of the Kunlun mountains, 21,750 feet high, rose boldly to the north of us. Quite close to these stone dwellings, and at the foot of a large wall, we halted at midday. The sun was beautifully warm and our lunch tasted very good. We passed a side valley which leads up to the Yangi Dawan. In the background was a mighty array of snow giants. It was here, in 1908, that Sir Aurel Stein had one of his feet frost-bitten in an attempt to find this glacier pass. We wanted to reach the mouth of the Kara-kash river that day. This, however, proved impossible, for the side valley up which we went had not a drop of water in it, although Stein's map indicated that there should be some. There was no vegetation, and we found it dreadfully tiring climbing over the rocky terraces which lie on either side of the broad, dried-up river-bed. The cliffs here are steep and come down almost sheer to the bed of the river. All that afternoon a strong westerly wind blew in our faces. At five o'clock we reached a large river-bed, which, however, at that moment contained but little water. This river has carved a mighty gorge-like valley through the mountains. It was not cold that night, and as the temperature fell only to 21 degrees we slept very well, which was perhaps due partly to the altitude, for we had come down to 14,435 feet.

The next morning, before the caravan set off, I made a small excursion up the valley. The sides of the mountains were weather-beaten and the rocks had been

transformed into the weirdest shapes by the erosion caused by the wind. Many of the large boulders had been completely hollowed out, others—as, for example, the crystalline slates—had had holes bored through them by the force of the wind, the air being saturated with sand. The weather was glorious and it turned quite hot in the middle of the day. Very soon after leaving our camp we again came across bush vegetation, which later became so luxurious that it was easy to lose oneself in the jungle. A herd of antelopes suddenly appeared, but quickly vanished into the bush. The river here has divided into many small streams, which wind their way through the broad valley. We pitched our camp near Abdul Ghafur Langar, on a grassy ledge above an arm of the river. It was still early in the day, about eleven o'clock, and during the rest of the morning we sat in the sun writing up our diaries, taking photographs and thoroughly enjoying the mild autumn air. In the afternoon, whilst out walking, I discovered a hidden valley which led far up into the Kunlun range. I utilised the early hours of the next day, accompanied by Tsang Tsang, in reconnoitring this *terra incognita*, and was able to ascertain that here was a valley by which, in all probability, one could reach the snow-capped heights of the Kunluns. This march through the valley, which was paved with stones and boulders, was very tiring and monotonous. These autumn days were beautiful; the air was dry though the sun was not strong. Vegetation grew more and more luxurious as we descended, and was dressed in autumn tints.

On 2nd October we reached the foot of a mighty

snow-capped peak, the height of which I fixed trigonometrically at 20,652 feet. As I was leaving the camp early that morning with Puntsok, in order to go on ahead, the blue shadows of night were still clinging to the valley. Then the sun rose. At first it gently touched the highest peaks, but gradually the shadows melted away till the whole of the upper regions of the Kunlun mountains were bathed in the brilliant light of the morning sun. The edges of the river were frozen, for there had been a sharp frost in the night, and small fragments of ice were floating down. At ten o'clock I started on a water-colour sketch, but before I knew where I was my canvas was covered with icicles. We were now travelling along the north bank, though often we were forced to leave the valley because the cliffs came down sheer to the river-side. At last we came to one large rocky ledge, when a fairly steep descent brought us down into a broader part of the valley where there were grass and shrubs. We had hoped to shorten the day's march by crossing the river, but the water was too deep and the current too strong. We could not afford to run any risks at all with our baggage animals as we already had far too few of them. However, we knew that we ought soon to encounter some nomads, for, some days before, the porters had found fresh marks of horses and human beings on the clay banks of the river, and also a piece of horseshoe. I had, in fact, hoped to meet some Kirghiz in Abdul Ghafur Langar, but it was too late in the year, and they no doubt had already gone back to their winter quarters.

Apart from us Europeans, no one knew that we had taken the path to Suget Qaraul. We had led the servants to believe that we should reach Polur during the next few days and then push on to Khotan. Had we in fact told them the truth, Habibullah and several others would certainly have tried to hinder rapid progress forward. They were very keen to go to Chinese Turkistan, but we, on the other hand, wished to send our caravan leader, as well as some of the porters, back to Ladakh by the quickest way, and they had been warned of this. This plan would be possible only if we succeeded in reaching the Kara-koram route in good time, for in winter this is blocked by snow. That evening some of the porters, under the leadership of Habibullah, came to ask us for a day's rest, which we granted, and the men that night had a great feast. It was a fine sight to see them thoroughly enjoy themselves, and we joined them in their feast.

The next afternoon there was a heavy storm, and that evening Abdul reported that a fire was visible in the distance, about a mile away, but we ascertained later, with the help of our field-glasses, that it was only a stretch of the river in which the evening sky was reflected. The tracks of yaks and horses became more numerous, so that human beings could not be very far away.

We suddenly came to a grazing-ground on the following morning, where we found four small yaks, but of mankind there were no traces whatsoever. We commandeered these beasts, the largest of which we loaded up with the heavy pieces of baggage, which up till now the porters had been carrying. This small herd then

accompanied our caravan of sheep. That day it was necessary to cross the Koshbel Dawan, sunk into a side chain of the Kunluns, and the march proved very tiring, for the path led over endless boulders. Here in the sun, surrounded by gigantic rocks, Bosshard and I had our lunch, and allowed ourselves a quiet hour, for the caravan was a long way behind. We searched for a level spot, cleared away the stones and had a siesta. It was then a case of pushing on again. At half-past three I was standing on the summit of the pass, when I was again able to see the Kara-kash river, which in the course of the day had vanished from our sight behind a small ridge. I had to wait a long time here for my porter, who was carrying my surveyor's table. Several times I searched with my field-glasses in the hope of seeing some signs of our sheep or of the yaks, but all in vain.

During the descent from the summit of the pass to the banks of the river a storm came up, blowing sand and dust into our faces. About five o'clock we found a fairly good camping ground among some tamarisks near the river, but we guessed that we should have to wait a long time for the caravan. We set fire to one or two bushes as it grew dark, and the wind fanned them into big flames. About eight it grew cold, and although the temperature was not very low the biting wind nearly numbed us, so that we longed for the small tent and some hot tea. Below us, near the river, Habiba and Abdul had lit a small fire; we huddled close round it, waiting. At last, about nine, the sheep and yaks appeared, and an hour later we were able to have our supper.

The 5th of October was an eventful day. Bosshard and de Terra, the evening before, had come across several graves near our camp, and as the smell was very strong we came to the conclusion that the bodies could have been buried only very recently. Making my way across flooded pasture-lands I came to the grazing-ground, but still there were no signs of human beings. I discovered a herd of tame yaks here, and later Habiba and Sabur Malik told us that they were milking-yaks, and that therefore there must be people somewhere near. A large stretch of rocky land separated us from the next valley. Our excitement was intense when we saw, from the top of the terraces rising above the river, a Kirghiz settlement. Two men noticed us at once, and came towards us. We were greeted politely and led into a tent. A carpet was spread out and we sat down. Wonderful yak's milk was offered to us in wooden bowls. There was little conversation, for although I had studied Raquette's *Grammar of the Eastern Turkistan Language* our good host could not understand a single word of what I said. In defence, I must say that I was then so hoarse that even my friends could hardly understand me. The inside of the tent was very clean, and decorated with gaily coloured wide woven strips. In the middle was the fireplace, in which stood a few sooty copper cans. The women were very stately, with their tall white head-dresses and pretty garments. Sabur Malik, who previously had travelled in Eastern Turkistan, arrived at last. He knew the local dialect, so his services as interpreter were invaluable. We learned that this settlement was called Kengshewar.

When we asked for the name of the last European who had been there we came to the conclusion that it must have been Sir Aurel Stein, who had passed through twenty years ago. These people naturally did not know his name, but they remembered that it had been a sahib who, whilst endeavouring to climb a mountain, had had one of his feet frost-bitten and had had to be carried back to camp.

It was indeed a sensation for these people when our other porters arrived with the sheep, they being in a ragged and neglected condition. I shall never forget the amazement of one of our own people when he discovered that he was not in Polur but near the Kara-koram route, and in a few days would reach Suget Qaraul, the frontier *serai*. The expression on the face of our worthy caravan leader was wonderful. I believe it must have been minutes before he grasped the fact that we really were not in Polur. When we mentioned names of places such as Shahidulla and Suget Qaraul—places which he had learned about in his previous travels—it dawned on him what a trick we had played on him. His face grew longer and longer, and he performed the manœuvre which we had before admired, of pushing his index finger as far as possible up one nostril while gazing at us in an incredibly silly, stupid manner. Having taken several photographs, we took leave of our hospitable hosts and set off on our way, escorted by a Kirghiz. An hour later we reached a suitable camping ground, and here we had our lunch in the sun. That afternoon we were visited by some Kirghiz. We offered them tea and rusks, and

gave them a concert on the gramophone. How much pleasure did its music give us, and in the course of the expedition the porters derived even more enjoyment from it. Later another friend arrived, bringing milk and fresh butter, and I very much doubt if bread-and-butter has ever tasted so good. After sixty-two days of being entirely cut off from the world we were again in the presence of human beings, and their friendly greetings made us look forward to the future.

On 6th October the Kirghiz arrived with the three yaks which we had hired to go as far as Suget Qaraul. Now we could allow our one greatly overloaded yak to go free; we did not begrudge him his rest. The journey that day was very monotonous. The valley was desolate, vegetation grew scarcer and scarcer, and the grassy areas vanished. Gigantic fanlike deposits had pushed their way into the valley. Our road for the most part lay across rubble-fields, until at about three o'clock we reached the vicinity of Gulbazar Mazar, and camped on a grassy spot at the foot of a terrace. The weather had changed slightly, the sky was overcast and in the lower valley of the Kara-kash river it seemed to be raining. On the following day, 7th October, we entered Suget Qaraul. The caravan had started off as the first rays of the sun struck the valley. The scene was the same, our way again lying across rubble-fields and alluvial deposits. Here and there we could see snowy peaks at the far ends of small side valleys which joined the main valley. About noon we came to where the main valley opened out into a broad plain and the river divided up into many

tributaries. We now had to cross from the north side of the river to the south. The water was not deep, but icy cold. It was, however, not the cold which was so disagreeable as the sharp points of the stones lying in the bed of the river. After crossing another large fan-shaped alluvial deposit we sighted the frontier *serai* on the Kara-koram route.

Everyone stared at us as we entered the courtyard of the *serai*, which was in a dilapidated condition. We first visited the Chinese customs official, who resided in a small dark room. He received us in a friendly manner, offered us cigarettes and green tea, and made inquiries about our journey. The conversation was rather complicated, being translated from Hindustani into Turki and then into Chinese. Many curious busy-bodies squeezed into the doorway in order to see us. We were then shown to our rooms, and later, after they had been cleaned, we took possession. We procured some provisions, such as apricots, bread and cigarettes, from an Indian merchant who happened to be there. We had been without cigarettes for many weeks, and then we managed to get only a few, so we divided them up equally. In the afternoon the Chinese official sent round his red visiting-card and, as a present, a fine leg of mutton and a pound of rice. The cave-like rooms which had been allotted to us did not permit the daylight to enter, so that if we wished to read or work we had to light candles even in the daytime, or have the doors open. That also had its drawbacks, for the noise in the courtyard from the harsh voices of the caravan leaders, the neighing of the horses, the braying of the

donkeys and the continual commotion produced by officious visitors put peaceful work out of the question. In addition, Suget Qaraul is situated in an unfavourable position at the junction of a side valley and the main valley of the Kara-kash. The atmosphere is always disturbed and the wind howls continually round the mud walls.

Suget Qaraul is the first inhabited spot which travellers coming from Ladakh reach after crossing the Karakoram pass. All caravans have casualties at this pass—the highest caravan route in the world—and many poor horses and mules with difficulty reach this miserable *serai*, in which, to a certain extent, they can recuperate. Numbers of animals here succumb to overwhelming fatigue, and the ground is covered with skeletons. When an animal is dying it is thrown down by the wall of the *serai*, and falls a victim to the wolves, vultures and crows. The Chinese official, who had laid out a small kitchen-garden in front of the *serai*, had tied strips of cloth to the thigh-bones of dead horses to act as scarecrows.

Our next duty was to equip a relief caravan in order to collect the things which we had left behind on the Aksai Chin plateau. It took us several days to find a man who was willing to go with a caravan of camels accompanied by two of our best porters. We broke the news to the men that they were to be sent back to Leh. We kept only Sabur Malik and Asis Sheikh. There were one or two other Ladakhis who were very worthy, but none of them could speak the dialect of Eastern Turkistan and were therefore useless for our

purpose. On our arrival the Amban had sent two messengers to Sanju, the first village in Chinese Turkistan. They were to arrange for our journey and lay in a stock of provisions and wood in the rest-houses on the way. The following day the Amban visited us, and presented us with apricots, almonds, pears and twenty eggs. We were particularly pleased to see the eggs, and were most disappointed when Habiba came with a long face and reported that not one of them was good.

We asked the Amban to dinner the next evening. Bosshard had arranged an excellent menu, for who would not be satisfied with this :

Toast and hard-boiled Eggs

Noodle Soup

Roast Pigeon stuffed with Almonds

Asparagus

Pineapples and Sweets

The room was lit by twenty small stearine candles to greet our guest, and the large candles on the table were decorated with red paper frills. Half-an-hour before dinner our guest's chop-sticks arrived, but later he tried to use a knife and fork, though not with any conspicuous success. The danger was very great, especially when he started on the roast pigeon, because we felt that at any moment the whole bird might land on our one and only spotless tablecloth. We helped him to cut it up, and he ate it with great pleasure. The conversation naturally turned on the gramophone,

to which the Amban listened most attentively. We exchanged compliments with the aid of the interpreter, and learned about the country and the people. After the customary attack of hiccoughs our Chinese guest departed. Later we talked for a while, when Bosshard said he was of opinion that the Amban had liked the pigeons, and added that he had noticed some which he intended to shoot next day, and that Habiba could cook them and we would send them round as a present. I was lying in bed next morning when I heard a shot, and at breakfast Bosshard told me that the pigeons were so tame that there had been no difficulty in shooting them. It was not till later that we discovered that the birds belonged to the Amban, and that he kept them for the special purpose of having an occasional feast.

Only one solitary soldier was stationed at this isolated frontier post of the Chinese Empire, and he spent his time wandering round most of the day smoking his opium pipe. Now and again from the roof of the *serai* he kept a look-out for new arrivals. Just above Suget Qaraul are the famous jade mines, which have existed since earliest times. We visited these. Everywhere the lower slopes of the hills are interlaced with galleries, many of which, however, have fallen in and are now in ruins.

Over the Sanju Pass

WE left Suget Qaraul on 15th October with the new caravan, which was made up of horses. The previous days had been busily occupied with the rearranging of the loads and the buying of sheep. Habiba, who had been suffering from frightful toothache, had had to have two molar teeth out, and de Terra had treated another patient, the wife of the Amban, who had cut off the top of her little finger. We were very glad to leave this unpleasant spot, though we did not then know that we should have to spend several more days in this miserable *serai*. We now had to get used to the roughly made wooden saddles—and we very soon became aware of their hardness and discomfort—having left our good leather ones behind at the dump. We frequently met Hajis—pilgrims on their way to Mecca—who, though travelling with their wives and children, were not afraid of the long and difficult journey over the mountain regions of Central Asia, in order to reach their goal. Just before arriving at our first camping ground below the Togra-su another misfortune occurred: one of the pack-ponies that was carrying the hand luggage strayed off the path in order to quench its thirst at a small pool—all that remained of the broad river which flows here at the time of the summer floods. The Turki drivers were not attending,

and before we noticed it the animal had sunk into the mud. It took the porters some time to get there and then drag the pony out. Water had leaked into Bosshard's hand-bag and damaged part of the contents. We pitched our camp near a deserted stone shelter, but were able to find only firewood near by.

We later ascertained that what is marked plainly on the map as Kilian Qurghan in reality consists only of two tumble-down stone huts and one Khirgiz tent. The farther we rode downstream the prettier became the gorge-like valley which has been carved out by the Karakash river through the granite rocks of the Kunluns. Few plants grow in this neighbourhood, and only by the side of the river did we find isolated bushes and patches of grass.

We reached Piletogatsh at noon, a place consisting of a few houses. The head villager came out to meet us, bearing a present of beautiful melons, boiled eggs, almonds, apricots and walnuts. Inside the small courtyard of the *serai* carpets had been spread out, and here we partook of our midday meal in the warm sunshine. From there the path winds steeply along the left side of the valley as far as Ali Nazar Qurghan, whose innumerable tombs we had seen in the distance. Between here and Piletogatsh we had come across the houses of cave-dwellers among the rocky terraces, who energetically assisted us to lead our heavily laden horses along the steep sides of the mountain, and showed their hospitality by offering us tea, melons, bread and almonds. Unfortunately we were not used to such fare, and de Terra and I suffered next day from violent indigestion pains.

The last important high pass which separated us from the Tarim basin lay ahead of us. We worked our way along to Tarbogas, which lies at the head of a narrow gorge, sometimes passing through granite gorges, sometimes along steep cliff-sides. We should never have guessed, had our Turki servants not drawn our attention to it, that the small patch of level rubble-covered ground hemmed in by high cliff walls is the Tarbogas which is marked on the maps. We spread rugs on the ground and ate our lunch, which, in so far as I was concerned, consisted only of tea and rusks.

The crossing of the Sanju Pass, which in parts was covered with ice, is best accomplished with the use of yaks. We had previously ordered yaks at Suget Qaraul, and these arrived punctually during the night. The next morning we had to set about conquering this difficult pass. Everyone had advised us to ride on yaks, for these animals have a quiet and steady gait, especially when it is a question of going over boulders, snowy slopes, or places covered with ice. They have, however, their tricks, and thus our yaks had a habit of suddenly lying down. After they had gone a distance of ten or so yards they simply slid gently down; then, if by means of pushes and chastisement one was able to get them on again, after another ten yards they would again collapse. They could not be induced, either by whistling or singing, which the yak particularly appreciates, to bestir themselves, or to go any faster. We at last decided to walk. The climb for the last part was very arduous, and led over loose boulders. The difficulties of this route are manifest in the innumerable

skeletons of horses, donkeys and camels which lie bleached among the boulders. The blood-marks noticeable on the rocks also tell of the great hardships which caravans on this route have to encounter.

Just as we were reaching the summit a caravan of donkeys arrived, having made its way up from the north side. I can still see those small grey animals, which had been unloaded, shivering in every limb amidst those colossal rocks, and many of them were in a bad way after the climb. On the actual day we arrived at the top a number of other caravans were coming up from the other side, and as the path was very narrow we had to wait a long time to allow them to go by. The climb had been difficult enough, but the descent was equally dangerous. The surface of this narrow path was completely covered with ice, and as the incline is very considerable there is always the danger that animals which fall down might slip over the steep glaciers into the depths below. In places the path was completely covered with ice, and I had to crawl forward on my hands and knees. We saw several fresh blood-marks in the snow. The men had to rush hither and thither to help the animals, right the loads, and in especially bad places lead them across separately. When we reached the foot of the pass we met some Turkis trying to save the life of a pony that had had a fall that morning. This animal had knocked out one eye and also had a gaping wound in the chest, and was so badly injured that it had to be shot. It was immediately skinned and each person ensured getting a piece of the meat. While we were having

our lunch here about forty or fifty vultures suddenly put in an appearance and settled on another carcass of a horse which had no doubt met its fate that morning.

There was a marvellous view before us, and we therefore took several photographs. The descent to our new camping ground was not particularly difficult, it led over moraines covered with grass. At the Kirghiz settlement of Sospombay we were again welcomed and fêted. We had to spend the next day in this camp because de Terra and I were suffering from indigestion, which absolutely necessitated a day's rest. We therefore had to lie on our beds with hot-water bottles and confine ourselves to tea. Bosshard brought the gramophone and put it on a table in the opening of the tent and gave us a concert, combined with the musical efforts of the Kirghiz. The next day we were better and able to continue our journey. It had snowed during the night and the hills round looked as though they had been thickly powdered. We had only one riding-pony at our disposal, so de Terra and I decided to walk. We passed a number of Kirghiz and several caravans on their way to Ladakh. At about ten o'clock we halted in a small field to await the arrival of our caravan, which seemed a long way behind. It was very pleasant in the sun and we passed the time most comfortably. At last, about noon, we saw a cloud of dust in the valley, which was the sign of the approach of the camels, for we had been able to hire some in Sospombay. The path grew wilder and prettier as we pushed along, and we frequently had to cross the rushing little stream. At a small place called Korelang

we found a great surprise in store for us, for we were there entertained and offered fruit, bread and tea.

It was getting dusk as we set off on the last part of the journey to Akas Aqsi. We learned that the previous day a body of thirty horsemen had set out to meet and welcome us. Our journey the next day seemed never-ending. We had again managed to get hold of some riding-horses, and a large number of Turkis accompanied us, both on foot and on horseback, four or five of them walking ahead of us all the time. We often marvelled at the skill they displayed in passing along the steep rocky cliff-sides when we had to enter the stream and cross it on our horses. We descended lower and lower into the plain, while the valley gradually widened out more and more. The sky was of a beautiful shade of palest blue, and at midday in the sun it was delightfully warm. For the first time again we saw trees growing on the left-hand side of the valley. It suddenly dawned on us that the people who had joined us at Akas Aqsi would not let us out of their sight. As we approached the small shady oasis of Kibas yet another band met us. It was the secretary of the Beg of Sanju with his retinue, all mounted, and in a large cavalcade we approached the village of Sanju. They urged us repeatedly to gallop, saying that it was not far and that everything was ready for our reception. We therefore trotted and galloped in turn, but Sanju seemed to get no nearer.

The road led past several oases, through shady grassy avenues lined with poplars, and defiles enclosed by mud walls. Then again the scene became like the

great steppes. The country-side is well irrigated, and the poplars were reflected in the still, clear water. It grew colder as night came on. The whole picture reminded me of scenes in the north-west of India. There were large gardens surrounded by mud walls, and houses made of mud. We were, unfortunately, dead beat, and so worn out by the strenuous ride and the heat that we could scarcely sit upright in the saddle. Again and again we asked how far it was, and always came the same answer, "*As kaldi*," which means a little farther; but when our bodyguard that evening urged us to gallop we went on strike and continued at a walking pace. At last, about seven, we reached the *serai* of Sanju, having spent fourteen hours in the saddle without a break. We were given fruit and tea, after which we were left to ourselves. We were very hungry and could get nothing substantial to eat, and our caravan would not arrive till night. Later the Chinese customs official visited us to pay his respects, but as there was no interpreter available he did not stay long. Abdul in the meantime had been to the bazaar and, as luck would have it, he succeeded in getting some dry bread, with which we appeased our hunger. The caravan arrived very late that night.

We awoke on 22nd October after a good night's rest to be greeted by Habiba with a surprise dish for breakfast—a well-cooked *pilau*, with boiled eggs, good bread, beans and apples. Soon after breakfast the old Chinese customs official again put in an appearance, accompanied by another Chinese gentleman, and later the Beg of Sanju himself came to call. Having ex-

changed the usual greetings, he impressed on us what a fine place Guma was, and that as the inhabitants were expecting us we should be able to buy everything we wanted there. We pointed out that we could not go on, as we had to wait for our caravan to be replaced; but our objections were swept aside at once, for they promised to send on our baggage as soon as the new caravan arrived. It was very obvious in the course of conversation that their one desire was to push us on to Guma as quickly as possible. We finally thought it best to go, and hoped for the best, and that the Chinese Amban would carry out our wishes in the matter. We should never have been able to fix up anything in Sanju with the best will in the world, and we should certainly waste time in fruitless negotiations. It was not till our second visit here, in May 1928, that I was able to get to know the village and its neighbourhood. We were not able to leave till noon on the following day, for it was only with great difficulty that we were able to collect the necessary pack animals—in this case donkeys. The *serai* in which we found ourselves was at the extreme end of the new bazaar, which did not seem to have been finished.

We were told that the caravan that day would only reach Modji, which is on the main caravan route from Khotan to Yarkand. We were accompanied by the young Chinaman whom the Amban of Guma had sent to meet us. Our ride that afternoon lay through beautiful gardens and magnificent avenues of poplars, which were decked in their richest autumn colourings. All around people were working in the fields and gardens,

where both reaping and ploughing were in progress. The hills on either side were not nearly so high and were gradually merging into the plain. We crossed a sandy waste covered with boulders and then came to steppe-like vegetation. At about six o'clock we arrived at a small village and stopped by the local pond, which did not at all suit those who were accompanying us. They insisted that we should go on to Modji as there was no bazaar here. We told them, however, that we were exhausted and could not possibly ride all night. We had food with us, but, until the donkeys turned up, we stayed in the house of the villagers, who were most hospitable, and gave us milk, bread and beans. Abdul and Habiba had to wait outside in the main street, so that our caravan should not go past. Several times that evening I went out to get a breath of fresh air. The frogs were holding their evening concert in the village pond, where the water was not too clean, and the chirping of the crickets rang out in the stillness of the night. It was quite dark when the donkeys arrived, and the pitching of our tents seemed to take ages, as there were very few people available, and they did not understand the most elementary points about putting up a tent.

C H A P T E R S E V E N

Chinese Turkistan

WE continued our journey to Modji on 24th October, passing through cultivated areas; by ten o'clock the sun was very pleasantly warm and at midday had become oppressively hot. We felt as though we had been suddenly transplanted into summer. The fields were tilled and the gayest of autumn colours had transformed the country-side into an unforgettable picture. Just as the sun was reaching its highest point we saw the crowded mud-houses of the oasis of Modji appearing in front of us. We dismounted at a Chinese rest-house, in which we were again given the best rooms. These Chinese rest-houses are not too bad really, if only the rooms were occasionally cleaned. There are generally chairs available, and always blankets and carpets were placed at our disposal. The pillow-like head-rests also were fairly comfortable. The Beg of Modji appeared soon after our arrival, bearing fruit and tea. The pack animals had again to be changed, and the tactics of those accompanying us now took the form of trying to delay our departure till the next day. The Chinese gentlemen and the Beg of Guma, clad in a pale blue robe and a fur cap, had made themselves comfortable in a corner of the *serai*. They had invited their friends and acquaintances, and, to the strains of a guitar, were smoking the water-pipe which was

handed round to each in turn, while an incredible amount of tea was drunk. We were given to understand that the new pack animals would arrive about three o'clock; but four and then five o'clock passed and there were still no signs of them. The loads were lying about in the courtyard just as the donkey drivers had dumped them.

Our bodyguard in the meantime had also vanished, but had in all probability gone off to some corner of the bazaar. Dead silence reigned in the *serai*, save for the cries of some Chinese children who were playing among the loads. That we could want to push on that day to a point between Modji and Guma, even if it should mean spending the night in the desert, was totally incomprehensible to these men. How could anyone want to forsake such fine quarters as we had in a town like Modji for a tent in the desert? There were people here to talk to; there was a bazaar in which the finest articles could be bought; it was possible to drink as much tea as one wanted, and in the village kitchen one could get the finest *pilau*; and then these sahibs wanted to ride forth and pitch their tent in a place where there was nothing at all to be got! One can easily, therefore, understand why these men tried to prevent us starting. After we had had several rows one or two horses appeared, and were tied up in the courtyard. Then there was another long period of inactivity. Finally Bosshard's patience gave out. De Terra and I were sitting in a room which looked out on to the courtyard when suddenly we realised that Bosshard had vanished. He reappeared mounted on a snow-white horse, which was beautifully

saddled. He had simply commandeered the animal, and this had created a great stir among the inhabitants. Very soon the news of this came to the ears of our body-guard; so they came out, and, realising that we meant business, gave way more or less cheerfully.

The sun had already set when we rode out through the bazaar gate. The desert begins quite close to the oasis. At last we had come to the famous old caravan route which leads from Kashgar to China. I had often read of it, for many episodes in history have taken place on this highway, which in earlier times was an important thoroughfare for the silk trade. It was here that Marco Polo, the Venetian, travelled during the thirteenth century, and also the Chinese pilgrim Hsuantsang, in the seventh century, who describes in his diary the difficulties which await travellers on this highway. That evening, as I for the first time saw this vast desert, a feeling of satisfaction came over me that, having read so many times in my schooldays—Sven Hedin's travel books—and pictured this great sandy waste, at last it should really lie before my eyes. Our ride that evening across the ridged sand-dunes was refreshing after the heat of the day. Ahead of us were the flickering lights of fires, and soon on the horizon we saw the black outlines of the poplar grove of the small oasis of Chadda.

Night had fallen, but the stars were shining so brightly that one could recognise things close at hand. We had not expected to find such fine quarters in this small out-of-the-way place, but this newly built Chinese *serai* was really very comfortable. It was not, therefore,

difficult for our troop to persuade us to spend the night here. The Beg of Sanju and our Chinese gentlemen were exceptionally pleasant that evening to us. They carried out all our wishes and obtained everything we wanted ; in fact, our relations were so friendly that we asked our friends to have dinner with us. The Beg made us a present of yet another chicken, and Habiba used all his skill in the cooking.

The following day, after we had left the oasis, we came to a spur jutting out into the desert. The dunes here reach a height of from fifteen to twenty feet, but the ground could not be absolutely sterile, for here and there were growing a few tamarisk bushes. Then again appeared the gravel and boulders. A sumptuous lunch awaited us at the Chinese rest-house at Mokuila. We sat in the garden and were given freshly baked rolls filled with some spicy mixture, melons and grapes, also excellent coffee and cigarettes. We had now acquired quite an imposing retinue, for the Beg of Modji and his servants had also joined us. About two o'clock we saw two riders approaching, who turned out to be the Beg from Guma and the Amban's secretary, who had ridden out to greet us and give us their good wishes. The Beg of Guma made a great impression on us ; he was of a very noticeable Aryan type, with blue eyes, fair hair, fresh complexion and a long flowing beard. We pushed on again after the usual greeting. Our caravan was now composed of twenty-five riders, of which each tried to outride the rest. Enveloped in a cloud of dust we galloped ahead, and before long halted in front of the great painted wooden gateway of Guma.

Rooms had been reserved for us in a large *serai*. We were given tea, pomegranates, pears and grapes. Visitor after visitor came to greet us, and the room was soon full. Suddenly a new guest arrived; the door was thrown open and a tall Indian, dressed in a fine blue and yellow silken robe, strode haughtily into the room and presented us with a boxful of the choicest sweetmeats. The appearance of this man created a great stir, and we discovered that he was the British Aqsaqal, or representative of the Indian colony in Guma, and in direct communication with the British Consul-General in Kashgar. On our arrival we had left cards on the Amban, and he had sent word that he would visit us that evening. At eight o'clock, accompanied by a bodyguard of eight Chinese soldiers, the great man appeared, and stayed with us for about an hour. We gave him an account of our travels, and showed him photographs and some of our geological specimens. The stones were of the greatest interest to him; he was firmly of the opinion that one piece of mica schist, the mica crystals of which glittered dazzlingly, contained some silver. He assured us too that it was possible to extract gold from a piece of limestone. That we collected stones solely for scientific purposes seemed to him incredible, for the inhabitants believed firmly that every stone which we collected and took with us contained either rare metals or precious stones. The Amban, as he bade us farewell, asked us to lunch the next day.

The following morning, at eleven o'clock, the British Aqsaqal arrived to play the part of interpreter, and in his company we set off. The Yamen, or customs-house,

of Guma is very imposing, and built entirely in Chinese style. We passed through several carved archways, which divide off the different courtyards, until we came eventually to the private side where the Amban lives. He advanced to meet us, full of smiles, and led us into the guest-room, in which was a small round table covered with dishes. There were magnificent grapes, peaches, pomegranates and other delicacies, and China tea was served during the meal. The Amban himself chose the finest pieces of fruit for us, and handed them round himself. The conversation turned on grapes, and we inquired whether wine was made here from them. The Amban's face lit up, and soon several bottles of wine were brought, as well as a bottle of whisky. After the meal we smoked for about an hour and a half, and then went out and admired the garden, in which flowers and vegetables were growing. We afterwards went into a large summer-house, where we had a meal, this time with alcoholic drinks. We soon noticed that our host had a wonderful capacity for consuming drink, and, unless we broke the Chinese custom, we were compelled to keep pace with him. Scarcely had we finished a large glass of Cognac than a waiter rushed up and filled it again. Our Chinese host put his away in one gulp and then, with a most persuasive smile, urged us to do the same. He, in all probability, thought that we should not be able to stand much alcohol, and was certainly looking forward to seeing us drunk. Each of us in the course of that meal had to empty fifteen large Cognacg lasses of neat brandy, to say nothing of Chinese drinks which were handed round in little silver cups. There

was plenty of food, which was very fair, but it could not be described as a good Chinese dinner. The menu consisted of mutton, chicken and eggs, done in various ways. I should like to call special attention to the poached eggs, which were served with fine sugar and white beans boiled in sugar water. By four-thirty we had eaten all we could, and were again taken out to admire the garden. We were suffering from headache, caused by the drink, and were all anxious to get back to the *serai*. In order to say something polite we admired the vegetables, and the Amban immediately gave orders for a few cabbages to be rooted up, which were pressed into the hands of the servants. We had formed the impression that we should now be allowed to slip quietly away; but we were mistaken, for the conversation then turned on the question of our journey, which led to endless discussions. Our desire to return to the Sanju Dawan, where we hoped to refit our caravan, was not, however, allowed to mature. We decided that it was useless that day to continue negotiations, and we were very pleased when at last we found ourselves back in the *serai*.

During the succeeding days we noticed that our movements were being closely spied on: we could not take a step outside without being shadowed. We had frequent discussions with the Amban, who was more or less useless, so we came to the conclusion that it would be better in the long run to go direct to Kashgar and negotiate there with the Governor, or Tao Tai. Thursday, 27th October, was market-day in the bazaar, and I went out after lunch with Abdul and

Habiba to look round. Considering the size of the oasis the bazaar is an important one, and Indian, English and Russian manufactured goods attracted our attention. We ordered new suits for Abdul and Habiba, which worked out very cheaply, costing only twenty to twenty-five shillings. In point of fact, the price of everything in Guma was extraordinarily low : a hundred eggs cost three shillings and four chickens cost four shillings. One evening the Amban sent us a whole roasted sheep and a bottle of Cognac, perhaps in the hope that we would give up our plans. The Aqsaqal on another day asked us to his prettily constructed house near the bazaar. There we met some Indians, including the old warrior Rehimsa, who had visited ruins of towns in the neighbourhood with Sir Aurel Stein. There were present also the secretary of the Amban and one or two Turkis. The Aqsaqal had a large gramophone, and a concert was held in the garden that afternoon. He had only two Russian records as against many Indian, Chinese, Persian and Turkish ones. We spoke of pushing farther ahead, as we wished to start the next day for Karghalik.

The horses which we had ordered arrived punctually on the morning of 31st October ; we had been unable to procure any *mappas*—two-wheeled Chinese carts. Shortly before we started, the Amban sent us pomegranates, sugar, Chinese tea and cigarettes, whilst we presented him with a gold ten-dollar coin. At the gateway of the town we had to wait for him, for he had announced his intention of coming, and before long arrived with his retinue. They all accompanied

us part of the way, travelling at top speed. Our horses were fresh and somewhat wild, so much so that at one bend Habiba was thrown, but he fell on soft sand, so luckily was not hurt. We now had a body-guard of seven men, of whom two were Chinese soldiers. We came across here and there some rough stretches of ground, but on the whole the way was fairly level; we left the high sand-dunes on our right. Broad rivers must at one time have flowed long distances to the north, because frequently we had to cross wide arid channels filled with boulders. We halted at an agricultural settlement called Haji Langar, and had lunch in the midday heat, in the shade of some poplars, which had been visible a long way from this isolated oasis. I noticed here for the first time a kind of black beetle, which I found again later in the desert. The country round ranged from a dingy yellow to a deep golden colour, and to the north we could pick out some of the large dunes of the Taklamakan desert. I longed to be able to explore this sea of sand and search for the old Buddhist remains which date back to A.D. 1000, though for the most part they are now buried in the sand. We here saw for the first time the Chinese milestones, or *potai*, which are at intervals of two and a half miles apart. Generally speaking, these large four-cornered towers are in ruins. Between Modji and Guma the road has been marked by different kinds of signs, consisting of large piles of stones in the form of a pyramid. These signposts in the distance looked like enormous baskets of beans, while occasionally broken trunks of poplars have been used instead. As the sun

was declining in the west we saw ahead the great lonely *serai* of Chulak Langar, built on a clay terrace, at the foot of which was a small pond. Our bodyguard, which had gone on ahead, had already laid down carpets in our rooms, and tea was being prepared when we arrived.

There was a fresh westerly wind blowing as we rode out the next morning to the gate of the town. We could not complain about the weather, for during the last three months we had had only three days during which the sky had been even cloudy. Day after day we had travelled under a deep blue sky in continuous sunshine. To the right of us now was the Taklamakan desert, which in the early morning looked like a frozen sea, the great ridges of sand casting deep violet shadows. At noon we came to a high belt of sand-dunes. The path was, however, well defined, and would have made a magnificent race-track. We therefore put our horses to the gallop, so that we seemed to travel like the wind. The fresh morning air, the feeling of freedom and release from civilisation all combined to endow our work of exploration with a charm all its own. What a contrast to working in Europe, where one is glued to a desk in a library, museum or office, and one runs the risk of losing touch with nature altogether unless one is able now and then to travel.

Our enjoyment that day was marred by the fact that de Terra was not at all well. He had complained earlier in the day of internal pains, which about midday became so bad that he was unable to ride any farther. As luck would have it, we overtook a man driving a

large two-wheeled cart. After some short negotiations he agreed to take de Terra to our next halting-place. De Terra therefore lay down on the straw, and was slowly taken to the next rest-house in Akin Langar. The driver was a thoroughly amusing lad, and kept up a continuous stream of pleasant conversation. The wheels of the cart often sank deep into the sand, and the horses got so out of breath that they were unable to pull. In Europe a driver usually urges his horses on with the aid of a whip, but our driver pursued an unusual method. He stroked his animals, talked to them, blew in their ears and nostrils, and now and then cracked his whip. He also gave them frequent rests.

De Terra had undoubtedly developed dysentery, and we were glad to think that in two days we should be in Yarkand and would be able to get into touch with the Swedish Mission Hospital. That evening part of the Guma bodyguard went on ahead to Karghalik, to arrange for a horse and a large two-wheeled cart to be dispatched during the night so that it would reach our camp early the next morning. Bosshard and I rode on in order to get matters in Karghalik settled about continuing our journey.

A north-west wind was blowing again as we crossed great plots of land covered with rubble and were approaching the oasis of Besh Arik. We passed a Mohammedan mosque and came to another stretch of sandy waste. In the meantime the wind had risen to gale force and the air was full of dust. Here, on the extreme south edge of the Tarim basin, westerly winds

seem to prevail, judging by the formation of the sand-dunes; whilst in the centre of this desert northerly winds are customary. About noon we rode into Karghalik and called on the British Aqsaqal, a very energetic individual and most awe-inspiring, with a voice to put to shame a Prussian sergeant-major. This worthy soul, thanks to the authority he possessed, was able to help us, and before long we had four *mappas* at our disposal, as well as three carts for loads, so that we were able to continue our journey that afternoon.

Bosshard and I had taken books with us in the hope that we should be able to read, but owing to the rattling and shaking of the cart this was absolutely impossible. These two-wheeled carts are not sprung, and we were therefore conscious of every stone we passed over. We were especially shaken up when we were travelling across stretches of country covered with boulders, or over uneven ridges. When we reached our destination that night at nine o'clock we were aching in every bone. The journey had been a long one, but we had hoped to arrive about seven. However, it grew darker and darker, and the outlines of the poplar-trees on either side were sharply defined against the evening sky. Several times we dozed off, only to be awakened in a few minutes when the cart jerked over a stone. It was here that I heard for the first time the fascinating tinkle of a camel-bell, for we continually came across large caravans travelling in the cool of the night. It was uncanny the way these tall, heavily laden camels would suddenly lurch out of the darkness on top of us.

We spent that night in the tiny village of Setjin Langar. The following morning we were pleased to find a messenger who had been sent to meet us from the Swedish Mission at Yarkand. He brought us our first mail for four months; the letters were old but they gave us news from home. We set off again in fine weather, but the drive was not very pleasant, and it was during the next few days that we learned what it really meant to ride in a *mappa* through the great dried-up valleys filled with stones and boulders. We had to hang on tight to the wooden bars to prevent our being jolted out altogether. We were filled with sympathy for poor de Terra, for it was bad enough when one was feeling well, as it made one feel so sick. We breathed more freely when at last we reached the level roads near Yarkand. It happened to be market-day, and the road was crowded, but thanks to our guide we picked our way through the hubbub, and were welcomed by the Rev. Mr and Mrs Hermanson. De Terra was given medical attention, and was so well cared for that, after a fortnight's halt, we were able to push on to Kashgar.

We hired a few *mappas* for the journey from Yarkand to Kashgar. Winter was on the threshold, the tall poplars were bare and cold grey mists hung over the fields in the early morning. It was very cold and unpleasant travelling first thing in those carts. Wrapped in skins and blankets, we tried to make ourselves comfortable, but we were so chucked about that in the evening, in spite of all our padding, our bones ached. We tried every way to avoid the shaking, and I came

to the conclusion that the best way was to lie flat on the floor, or better still do what the natives do—namely, squat with their legs crossed. We saw little of the country-side, though in fact there was not much to see. Day after day we went along the broad, flat caravan route, which led through wastes of gravel and rocks, or through large oases. The axles had to be oiled and greased every hour, owing to the dust and sand, but in spite of this the wheels creaked and groaned. In places where the going was exceptionally bad the drivers walked, cracking their whips and encouraging the horses. We were received with the greatest hospitality at Yangi Hisar by the Andersens, a Swedish couple, of the mission there. We left the next morning at four o'clock, in order to be able to reach Kashgar that day. The road was considerably better than it had been, so that we made very fair progress, and reached the Mission Station of Hantsheng, in the new part of Kashgar, about five o'clock. The Rev. Mr Tornquist, to whom we became greatly indebted, placed his own study at our disposal, so that we were able to work undisturbed.

The next thing to be done was to call on the important people in the town. We visited the commanding officer of the army first, as his quarters were quite close. The General was very kind, and gave us tea and cakes. Our calls on the Chinese officials were made in the company of Mr Tornquist, who was invaluable as an interpreter. We looked forward to our interview with the Tao Tai, His Excellency Ma Sho Woo. He received us in his summer-house, attended by his secretary. He

was by far the most intelligent and outstanding of all the Chinese officials we met. We were greatly impressed by him, and the welfare and peace of his district speak highly for his methods. The soldiers in the Yamen also made a good impression on us. This conference with this powerful representative of China made me realise that I was in the presence of one who was of great importance in China. He listened with the greatest interest to our plans and promised to give us all the help in his power. I am quite certain that several of the difficulties which arose later in the course of the expedition, especially those at Urumchi, would have been settled far quicker had the Tao Tai himself been in a position to give a decision.

We paid our respects also to the British and Soviet consuls. We were frequent guests at the British Consulate, which is one of the finest buildings in the whole of Kashgar. We shall always have happy memories of the pleasant hospitality of the British Consul-General, Mr Williamson, and the Vice-Consul, Captain Sherriff. Both these men helped us as far as they could, and were always willing to do anything or give advice. Sitting in front of the flickering fire, in large armchairs, we discussed the latest political situations in India, Afghanistan and Central Asia, and the many problems with which these countries have to contend. The Russian Consulate suffers from a superiority complex. Whilst the British Empire was represented by these two men, the Soviet Consulate consisted of a large staff. The Russian Consul-General, Herr Posnikoff, also took a great interest in what we had done, and later, in con-

junction with his Vice-Consul, took immense trouble to facilitate Bosshard's journey home through Russia. I need hardly mention that the members of the Swedish Mission were most kind to us and that we were often their guests. One evening the Tao Tai gave a feast in our honour, to which the whole of the Swedish colony and the British Consulate were invited. The great dinner was timed for seven o'clock. We went with the Swedish people in *mappas* to the Yamen. The narrow bazaar streets were pitch-dark, and as our driver had no lantern I was in constant terror of a collision, but luckily all went well.

The noise of voices and the appearance of lights heralded the palace. On either side of the entrance were drawn up rows of soldiers, who presented arms as we went in. To the right and left cannon-shots rang out, which nearly burst our ear-drums, and the Chinese military band greeted us with music. On the steps of the enormous, brilliantly lit summer-house stood our host and various officials to welcome us. There were about thirty guests in all, and we were seated at a long table covered with a white cloth. The British Consul-General and ourselves were put in the seats of honour opposite the Tao Tai. Chinese soldiers ran to and fro, while the uniform of the Indian bodyguard of the British Consul added a fiery note to the proceedings.

Outside in the courtyard a Chinese theatre had been erected. The actors hailed from Peking and Kansu, and all wore the most wonderful old costumes, and fine masks. Ear-splitting music accompanied the play, so that at times we were unable to hear ourselves speak.

We were, unfortunately, a little hazy about the plot, and when the Chinese secretary of the British Consul-General tried to explain in broken English his voice was lost in the general confusion. Several times one of the Chinese actors or one of the highly made-up actresses came forward with a volume of plays. The Chinese secretary would then try to explain some of the plots, and we had to choose one for them to act.

About eight, dinner was served, and consisted of the following courses :

Oyster Soup
Roast Duck
Pigeons' Hard-boiled Eggs in Soup
Crayfish Stew
Semolina Dumplings in Milk
Smoked Fish
Mutton
Roast Chicken
White Beans in Sugar Water
Stewed Pears with Rice
Fruit
Sweet fried Rice

Each course was served in small dishes, and each guest was provided with a glass of water and a small one of Cognac. Champagne was next served in Cognac glasses. At twelve o'clock we were allowed to leave. Again guns were fired, and the soldiers sprang to attention as we drove out of the gateway. It was very quiet in those

dark streets, and as the gate of the town was locked we had to wait a long time before anyone was awakened by our knocking and shouting.

We had a great deal to do in Kashgar. Voluminous correspondence had to be dealt with and also the arrangements for my journey into the desert. Bosshard and de Terra were returning to Yarkand after they had paid the most important calls, and had arranged with the authorities to take over the caravan which was returning from the Aksai Chin plateau, while I wished to explore the Taklamakan desert. At one time I had been inclined to cut straight across the small waste districts to the west of the Yarkand river, and then I wanted to visit the Mazar Tagh. Still, on the newest maps in Stieler's *Hand Atlas*, small ridges near Maralbashi and the gigantic Mazar Tagh, to the south of Khotan, are marked as being joined by a high chain of mountains. It was of the utmost importance to collect some data about the morphology of these deserts of Central Asia, since these researches might be a clue to the question of their origin and history. I therefore waded, during these fourteen days at my disposal in Kashgar, into the groundwork of Sir Aurel Stein, and studied the map in order to work out my route. I was unable to spare more than a month for this digression, as I had planned to carry out extensive research in other parts of the desert, and it was safe to work here only till the middle of April.

I was able to work undisturbed in the pretty room placed at my disposal by Mr Tornquist. He also placed at my disposal his excellent library. The room, which was on the ground floor of the mission-house, opened

on to a garden, so I was able to get much-needed quiet and rest. One could really have imagined that one was back in Europe, for the room was furnished entirely in European style. Only the petroleum lamp and the Turki attendants served as reminders that one was in a distant land. Winter, in the meanwhile, had come in earnest. Day after day the sky was overcast, and snow fell in thick flakes. It was always dark, and often I was able to do without the lamp only for a short time in the middle of the day.

The Cold of the Desert

BY the middle of December all preparations for our first great journey into the desert were complete. I had purchased five camels in the bazaar, and fine animals they looked in their long shaggy winter coats. Two drivers were taken on to look after them, Kudret Akhon and Rosejan. Kudret Akhon was a strong lad, with a long flowing beard and dirty eyes. He later became the *mâitre de plaisir* of the caravan, as he made jokes all day long. Rosejan was a real gem! He looked an appalling knave, and was a youth who understood only too well the art of avoiding all work, but he proved very useful as an interpreter, for he could speak both Turki and Hindustani. I believe that none of us will ever forget his face or the many occasions on which we all felt like boxing his ears. Habiba during this time was a great help to me. He made all the arrangements for our journey; he took charge of the purchases, and also kept an eye on the camels, which had been housed in a neighbouring *serai*, and saw that they were well looked after and fed. I was also greatly indebted to the British Consul-General, who gave me some of the galvanised water-tanks which Sir Aurel Stein had left behind at the Consulate after his last expedition.

At last, on the morning of 16th December, we were able to start. It was still dark when Habiba came into

my tent to wake me! I dressed quickly and went out into the courtyard, in order to supervise the dividing up of the baggage and the loading of the camels, which were to start off at once, while Habiba and I were to follow in a *mappa*.

During the first few days the loading of the camels took a long time, as it was no easy matter to divide the baggage satisfactorily. The difficulty was not so much with the large pieces, such as chests, trunks and tents, as with the small odds and ends which remained over. On one occasion the coal-scuttle still lay on the ground; on another day a pail, a few spades, a lamp and some cooking utensils were left. However, on 16th December the large camel-bell was finally hung round the leading camel's neck, and the caravan, led by Kudret Akhon, passed through the gateway of Hantsheng. While Habiba was packing away the things which had been left behind I went and had a later breakfast with Tornquist. About nine o'clock we too were ready to leave. I shook my host heartily by the hand and thanked him, for it had been due to him that our stay had been so agreeable. I then got into the *mappa* and wrapped myself up well. We started off amid the clanging of bells, which were attached to the horses' harness, and passed through the gateway of the town. We took with us the servant of the Amban, who had also been engaged by us as a member of this expedition into the desert.

It was a cold and misty morning, like the dull, grey November mornings which we get at home. The ride to Khan Arik was monotonous. The bare trunks of the poplars, which lined the path on either side, loomed up

gloomily in the damp weather. Had it not been for the fact that we occasionally met one or two Turkis we might easily have imagined that we were travelling in North Germany. We followed the Faisabad river for a part of the way, which had a certain amount of water in it, and later crossed it by means of a roughly constructed wooden bridge. We overtook the caravan about midday, and at half-past four reached a small *serai*. The Amban's servant collected some firewood, and it was not long before a fire was blazing in the fireplace. I lay down on my camp-bed, glad to be once again on my travels. It was dark by half-past four, and the long evenings were often very difficult to while away. I used to read the books of Sir Aurel Stein and picture with eager anticipation the time when I should actually be able to see with my own eyes the places he mentions.

The ride from Khan Arik to Jupoga was very monotonous. There were, however, signs of sand-dunes, so that the desert could not be far off. We had to make all our final preparations in this village for our march across the desert. The first thing was to fill the water-tanks, and this was undertaken by the local water-carrier, who had to fetch the water from the river in skins. We also added another goat to our menagerie. I was compelled to speak to the Amban's servant, who intended to take his horse with him. I warned him that we should be about four or five days without water and that we should therefore not be able to spare him any of our supply. I also told him that there would be great difficulty in finding good grazing-ground. He, however, would not change his mind,

and decided to come with us. He bought a few bundles of hay and started off with us next day.

I had planned to cut diagonally across the small desert which lies between the Kashgar river and the Yarkand river, as we knew practically nothing about this district. According to the map there was an absolute barren waste there. We left the small *serai* at seven o'clock next morning. It was a bitterly cold day but beautifully clear. To the left the Pamirs rose, touched by the pale rose of dawn. They were visible for only a few minutes and then were shrouded in a blue cloud, and I could see only the white tips of the peaks rising above the mist. We watered the camels at the village pond and then set off into the desert.

I had already told Habiba to take a dog, since we had had to leave Kurrum behind in Yarkand on account of his injured leg. He had been unable to find a suitable animal in Kashgar, but I came across, sitting in front of a mud hut, a dear little puppy who could not have been more than a few weeks old. I bought him for three shillings and christened him Bobby. During our first day's march he did not seem to be very pleased with our company, for he cried when I led him along on a lead, and howled when I gave him a ride on a camel. He soon grew accustomed to us, however, and was a source of great amusement. He was very fond of burrowing in the sand and rolling down the dunes, or chasing after hares or an occasional bird.

At eight o'clock we left the main road, which leads from Jupoga to Yarkand, through Merket, and turned east. The path led through steppe-like regions, and

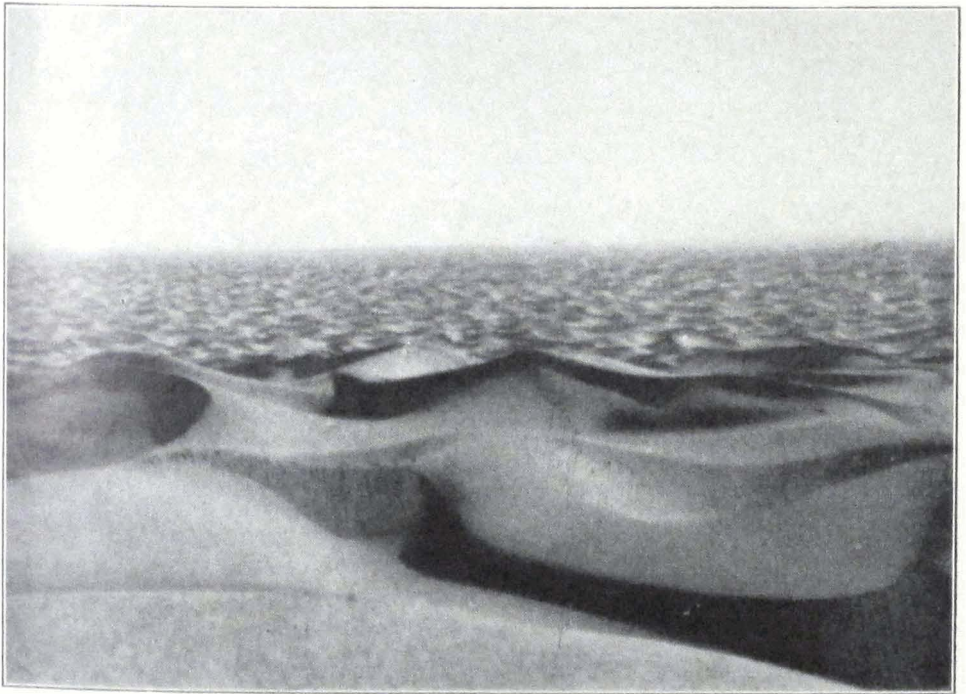
we came across several people. The ground was covered in many places with a crust of salt. About eleven o'clock we came to the first high sand-dunes, and then the desert stretched before us. I found the riding of a camel not so bad, at any rate my driver had fixed me up very comfortably. One soon gets used to the swaying movement, and I cannot understand how people can feel sea-sick under these circumstances. I had so much room in my airy seat that I could spread out my maps and notebooks as well as have Bobby beside me. He was now delighted with riding on a camel, and soon learned how to counteract the swaying movement. Whenever we met any other dogs he would bark furiously and could with safety take many liberties. About three o'clock we caught a glimpse ahead of two oases among the sand-dunes. We saw small salt pools, the banks overgrown with thick reeds, showing that the water could not be very deep. We pitched our camp on the edge of a high sand-dune as the sun was sinking, against which the gigantic peaks of the Pamirs and the Tien Shan stood out like sentinels. Night came down quickly, and by five it was quite dark save for the marvellous star-spangled sky. The hours between tea and supper were always a very busy time. We had to put down our impressions of the day's work, write up our diaries, make meteorological observations, take specimens of the sand and study our maps.

I often joined the servants round the camp fire and discussed our future route and plans. When I told them that evening that we should be going to Khotan, Kudret Akhon and Rosejan grew very enthusiastic, for

this town is noted for its beautiful women and, further, it is permissible there to contract a temporary marriage.

I slept very badly the next night, which was due to the intense cold, as the thermometer showed 22°. There was a thick mist hovering over the desert the next morning. The yellow disc of the sun rose, casting its pale beams over the golden sand. The few tamarisk-trees were thickly covered with frost and looked like decorated Christmas trees. We had to cross a sandy ridge, that morning, which was about thirty or forty feet high. It is difficult at times in a desert to keep one's direction, for one sees a ridge ahead which suddenly vanishes into a hollow. On these occasions the only thing to do is to use a compass. While the caravan is making a steep descent down a sand-dune great care has to be taken of the camel. In fact, it is necessary to be something of an acrobat in order not to lose one's own balance. I had on several occasions to go on foot in order to lead the party by compass. I was, of course, anxious to find the easiest way in order to avoid any unnecessary expenditure of energy in so far as the camels were concerned. We used to climb up the windward side of a sand-dune and then endeavour by some means or other to reach the windward side of the next dune.

About midday we came to a high sandy plain which was overgrown with rushes, which rustled and creaked as the caravan forced its way through them. The camels snatched at the stalks, and it was always a source of wonder to me how these animals managed to swallow them, for they were about six feet long,



OUR CARAVAN IN THE DESERT

THE CAMEL IS A STEADY AND RELIABLE BAGGAGE ANIMAL.

THE TAKLAMAKAN DESERT

THIS DESERT IS A VERITABLE SEA OF SAND EXTENDING AS FAR AS THE EYE CAN SEE.

without pausing in their stride. We lit a fire in a fairly open spot and ate our lunch there. One of the water-tanks had sprung a leak in the course of the last few days, and the water dripped down the sides of the camel and froze at once into icicles. There was no doubt that we should have to stop at one of the large towns, possibly in Yarkand, in order to get some washers put in to make the covers absolutely water-tight.

We came to more dunes that afternoon. The desert appeared to extend as far as the eye could see. Our small Bobby was very funny, for he blustered about in exactly the same way as Kurrum used to do, and naturally got so tired that I had to put him on the back of one of the camels. We pitched camp at four o'clock among the sand-dunes, and for the first time I allowed the brazier to be taken into my tent, with the result that in a very short time my draughty shelter became comfortably warm. The heat attracted Bobby, who soon became a permanent occupant of my tent. While I was eating my supper he used to sit on my bed, blinking at me with his enormous black eyes in such a beseeching manner that I could not resist feeding him. At night he slept at the foot of my bed, and acted as a hot-water bottle. My servants grew very uneasy after we had been travelling for two days in the desert without a sign of water. The Amban's servant was especially concerned about his horse. In the evening I heard the words *jengle*, or wilderness, *kum*, or sand, and *su yok*, or no water, from my tent.

Our march on 19th December brought us a surprise.

There had been a severe frost overnight and the dunes were all white. There was thirty degrees of frost at seven o'clock. At eleven o'clock, after a tiring march across sand-dunes, we came to some large frozen lakes, stretching north and south, which were probably the remains of a river. The smooth black stretches of ice formed a curious contrast with the reeds on the banks, which were white with frost. We met a party of woodcutters who were collecting wood from the dead stumps of poplar-trees. The sight of the lakes and the meeting with the human beings did much to raise the *moral* of our people, but their spirits fell just as quickly when, after half-an-hour, we left and set off again into the desert. Seated on my camel, I acted as guide. Waves of sand appeared one beyond the other. Even as a ship rides on the crest of a wave and then sinks into the hollow of it, so we made our way over the crests of the dunes and down into the hollows. About three o'clock they grew lower, and developed into a series of undulating little ripples. We pitched our camp among some dead poplars, with the result that we had an abundant supply of firewood. After the camels had been unloaded they were tied together to form a circle, so that they could not run away or get lost. This apparently is the customary thing to do, and is called a "camel circle."

We came to quite a dense poplar wood the following morning. The sand-dunes were here about fifteen feet high; they stretched in a north-westerly to south-westerly direction and made our progress very difficult. About nine o'clock, however, we reached fairly open

country, and at times it seemed as though we were travelling through an enchanted forest. A deep stillness reigned save for the tinkling of the camel-bells. The effect was eerie, for each branch was hung thick with icicles. We came across the wheel-marks of a cart and several tracks of men, and about eleven o'clock we heard sounds of the chopping of wood. We went in the direction of the sound and found two Turkis chopping wood and putting it on a large wagon to cart away. The Amban's servant was very anxious that the men should leave their work in order to show us the way, for he was in a perpetual state of fear that we should never find our way out of the desert. I was, however, against this, for these men told us that the main road from Maralbashi to Yarkand was quite near.

We made our way in the direction of the isolated farm of Poltaki Langar. The Amban's servant had become absolutely mental in the course of the last few days. At last he implored me to let him ride on ahead and meet us in Maralbashi in ten days' time. I agreed to this, as not only had he become quite useless to us but was a positive drag, and his perpetual fear of the desert was having a bad effect on the other men. He left at once, and we soon saw him riding away. There was no doubt that he did not like going off the beaten track; but I had warned him of the difficulties that we would encounter, and in spite of this he had not brought enough provisions. He had run out of food the day before, so that we had had to give him some of ours, and his horse was likewise suffering from hunger

and thirst. We would have had great difficulty in finding Poltaki Langar had not my attention been drawn to a signpost perched on a sand-dune.

We ate our lunch in the warmth of the sun after travelling a short way along a well-defined highway, leading in a north-easterly direction. We met scarcely a soul, only four falconers, each carrying a large eagle. The weather was glorious, and the sun quite hot, like a spring day. We had taken four days to cross this small desert, which hitherto had never been visited by Europeans, and had managed to keep our proper course in an easterly direction in spite of having to zigzag on account of the sand-ridges.

We pitched camp among some tamarisks, a little way off the main road. We later followed the path leading to Maralbashi. I had planned to cross the Yarkand river at Saryk Buja and then to head straight for the Mazar Tagh. The maps which I had with me let me down, so we often had to ask our way, and people always gave a different answer. We passed through the large village of Chong Kuchak about mid-day, and this is not marked on the map at all. I was very curious to know where we really were. In Chong Kuchak I made a point of having the large water-tanks filled with ice. We went down to the village pond, and Kudret Akhon had to break the ice with an axe so that the camels could drink.

I made up my mind not to search any more for the Saryk Buja but to steer an easterly course to the Yarkand river. From now onwards I went on foot, and guided with the help of a compass. In the distance I could see

flat tracks of country covered with tamarisks and reeds. We now travelled until half-past four, after which it was too dark. Just at this time we saw from a hillock two small lakes ahead of us, beside which we camped. The first thing I did, while the servants were putting up the tents, was to take an axe and hack through the ice to discover whether or not the water was salt. Our luck was in, for the water proved to be sweet. For the last five days we had not been able to wash at all, as every drop of water had been precious, but here we had an abundant supply of water and it was no longer so necessary to economise. Late that evening we noticed a fire burning to the east, so we were not the only people camping in the jungle near the Yarkand river.

A glorious sunrise greeted us on 22nd December, though it was bitterly cold and all the bushes were again covered with frost. The sun as it rose was like a cannon-ball. A thin mist crept gradually over the shores of the lake where we had been camping. I again led off in an easterly direction, but about nine o'clock our progress was stopped by a frozen trench, until we discovered a small wooden bridge. We were able to guide the first camel across successfully, but the second one fell over, broke the ice in the trench and got stuck in the mud. Eventually, after using our combined strength, we succeeded in extricating him from his pitiful plight. Shortly after this incident we came to a few huts, and learned from the inhabitants that there was a ford across the Yarkand river, not far from Aka Dong. We could not possibly afford to fail to make use of this

opportunity of crossing this river, which was large and frozen.

At midday we reached the ford, and again had to cross by means of a small wooden bridge. We took extra precautions in leading the camels over after our experiences that morning. Camels, however, are always clumsy brutes, and the same beast which had played that trick in the morning slipped again. I saw it put its right foreleg over the side, lose its balance and fall. Unfortunately it was impeded by its load, and was in great danger of being drowned. Rosejan and Kudret Akhon took off their clothes and worked feverishly in order to save the animal, eventually succeeding in dragging it up over the muddy bank on to firm ground. The two men, who had had to stand in icy water with the temperature at 12° , were practically numb. As luck would have it the camel had been carrying my kit-bag, blankets, sheepskin coat and the small tent which was used for cooking. The load was in the water for a quarter of an hour, and was naturally soaked through, and the camel was covered with mud, which quickly turned to a kind of frozen crust, with the result that both he and my luggage had to be thawed.

Some Turkis were watching this performance, and one, who realised that the whole of my bedding had been involved, asked me to spend the night in his house. I eagerly accepted his kind invitation. We soon reached the ferry by means of which the caravan would cross the river. These ferries are large pontoon-boats, large enough to take carts, camels and horses. The

whole of my caravan was taken over for the vast sum of one-and-sixpence ! A man made me buy some beautifully sweet juicy melons, which, though frozen, tasted delicious. Later I had to pay heavily for this indiscretion, for during the night I suffered intense pains.

The Turki took us to his house, where two rooms with large carpets were placed at our disposal. A bright fire was burning in the small fireplace, so that we were able to warm ourselves as soon as we arrived. Anyone who has spent the whole day in the cold open air knows well how to appreciate the warmth of a fire, and I never grow tired of sitting round a camp fire, watching the play of the sparks. We had a large fire in Habiba's room in order to dry the things which were wet. This proved very difficult, and it was only after they had been out in the sun for three days that they were again fit to use. The kitchen-tent was still a block of ice, and Habiba spent many days wrestling with it before it could be used again. After a restless night I stayed in bed till seven o'clock, had tea and oatmeal for breakfast, and left at nine o'clock.

It had snowed in the night and the sky was grey, with an unpleasant damp mist. Our departure was watched by some Turkis, and one of their women presented us with a chicken, as well as an apronful of eggs. The women and girls here were of a peculiar type ; they were most of them tall and slim, and their features resembled those of Italian women, though they had somewhat more of the Mongolian type of eye. The day's march was monotonous, as we passed mostly through areas covered with tamarisk-trees, and we came

across one or two solitary farms. We were unable to reach the last outpost of the desert, Bir Aghiz, before it grew dark. We therefore pitched our tents in the midst of some dead poplar-trees, the splintered trunks of which were bleached, so that they presented a curiously ghost-like appearance. We set fire to a large tamarisk bush and tried again to dry the wet things. I shall never forget those camp scenes in the desert—the red flickering flames and the tall camels all huddled together like creatures from another world. The servants sat round the fire, eating their simple food and helping the cook to prepare my supper. Bobby often tried to attack the cooking-chest, but Habiba had a watchful eye.

Christmas was at hand, and we left the camp early on a fine morning. We reached Bir Aghiz at eight o'clock, which turned out to be a bigger place than I had expected. The village dogs made a frightful noise as we passed through, and I had to take Bobby up on to my camel or he would never have come through alive. We then had to pick our way through thick bushes of tamarisk, from six to nine feet high. These bushes, covered with frost, had a fairy-like appearance, and the camels, as they knocked against them, grew white with snow. At eleven o'clock it was very pleasant, and by midday, while we were eating our lunch beside a pool surrounded with reeds, the sun was quite hot. The stillness of the air was a remarkable change after the cold Tibetan plateau, when every day we had to fight the icy blast. While we were having our midday rest three shepherds appeared from among the bushes with

a large flock of sheep. We ascertained from them that not far from where we were was a good spring where we should be able to fill our water-tanks, and one of them led us to the well, which we could never have found by ourselves. We also bought a sheep, which was killed at once and then placed on one of the camels. We were now, therefore, well provisioned for our journey, for we were told that we should not meet anyone for some time. We pitched our camp in an open space in the jungle, where we again found firewood.

We did not have the typical Christmas weather, for the day was quite spring-like, and it was difficult to realise that at home Christmas was being celebrated and Christmas-trees were being decorated. At first there was a slight north-easterly wind, but later it seemed to grow colder than it really was, for the thermometer registered only ten degrees of frost. During the previous night there had not been such a severe frost as usual, but when we awoke the sky was overcast, and the sun did not come out till the middle of the day. I spotted the lonely farm of Achik Tugmen from the top of a sand-dune which lay beside the salt swamp of Achik Akin Köl, which we left on our right. The country here was very desolate, and grew even more depressing when we came to a forest of dead poplars. In some cases only the outer shell of the tree remained, inside the trunk was hollow. The wood was bone-dry and very brittle; in fact, by kicking a tree it often fell away to dust. The desert seemed to be completely waste. On one occasion we were extremely surprised when a hare tore past and vanished behind a sand-dune.

About eleven o'clock we reached a thick jungle where the reeds were so tall that it was not possible to see over the top even from the back of a camel. I had read in travel-books that tigers still existed in the jungle of Maralbashi, and the shepherds whom we had met the day before had confirmed this. We, however, found no traces of these animals, and an encounter with one would have been excessively unpleasant, as I had no gun with me. I later discovered that many years had elapsed since a tiger had been seen, and a hunter told me that the last one had been shot about twelve years ago. I myself, however, am of the opinion that it is not at all unlikely that there are still a few specimens living in the jungle on the banks of the Yarkand river.

At midday we came again to sand, and according to Stein's map should have reached the well at Jai Khotan a long time ago, where I intended filling up the water-tanks, which had been only partially filled the day before. I also ascertained that the servants that morning had used up all the water and there remained only sufficient for one cup of tea. I had made up my mind, in order to celebrate the day, to arrange for a delicious meal, but the state of affairs was not favourable. Our rest in the middle of the day was made as short as possible, after which we continued to follow the path, which in my judgment was bearing too far to the east. The sand-dunes became higher and higher and the vegetation scarcer and scarcer. Two hours passed and the sun began to sink. Was I really to have such a dreary Christmas Day?

I climbed a sand-dune, from which I was able to see

some distance ahead. For the first time I caught sight to the north-east of the main ridge of the Mazar Tagh, the peaks of which were turned to a pale rose in the sunset, forming a sharp contrast to the violet background of the evening sky. To the east stretched a sea of sand as far as one could see, but there was a certain amount of vegetation visible everywhere. To the north and west the desert was dotted with woods. There was no doubt but that we had come too far east. I decided, therefore, to follow a northerly direction during the last half-hour before sunset, in order to get nearer to the Yarkand river, where possibly we might be able to get water by digging. I then climbed down from the ridge on which I was standing, walked a few steps through some bushes, and found myself standing in front of a spring, with fresh water flowing. This was indeed a Christmas present. We pitched our tents in a small clearing, camp fires were soon blazing and coffee was served. I chose a tin of Hungarian *gulasch* and a tin of asparagus, and Habiba prepared me a worthy Christmas dinner. Afterwards I studied Stein's entrancing travel-books, and his maps, until, worn out by the long march, I went to bed and was soon asleep.

Dead Poplar Woods

ON 26th December we had to refill our water-tanks and load up a camel with firewood. We therefore did not get under way until ten o'clock, when we set off in a northerly direction by the compass. We had to cross a high sandy ridge twice, after which we came to a dead poplar wood. The *otunchis*, or woodcutters, appear to make fires in the trunks of trees, as several were completely burnt out inside, and the trunks protruded from the greyish sand like black posts. Absolute silence reigns in these dead forests, and it seems as though one is passing through a gigantic cemetery. There was no sign of life, and the air was so still that it increased the silence. In the afternoon we discovered a passable grazing-ground, with rushes and small trees, and there we camped. I took charge of the water-tanks and always had them in my tent, as I foresaw that we should not get a fresh supply till we reached the Chöl Köl, about six days later. I therefore divided the water into six rations. I likewise kept an eye on the provisions and, owing to the fact that fat Kudret Akhon always ate more than his share, I decided to look after the servants' food, for it was necessary to ration everything on economical lines. In addition, that afternoon I sent out Kudret Akhon to collect reeds and leaves in large sacks for

the camels, in case we should have to go several days without finding another grazing-ground.

On 27th December it was still dark when we left our tents early in the morning, and the sky was very cloudy. It was not, however, really cold, as the temperature was only 14°. The wonderful sunrise foretold a beautiful day, the cirrus clouds floating in the sky like a rosy veil. The scene did not change during the day. We again passed through a dead poplar wood and then over sand-dunes and large clay-beds. Several times we came to level plots of ground composed of very fine particles of dust, which made walking exceedingly difficult. The Mazar Tagh came nearer and nearer, and we were soon able to distinguish the peaks and dried-up valleys. I had taken as my goal the most southerly spur. To the north we saw smoke, which, undoubtedly, indicated human beings, but this lay so far off our path that we could not go there. Except for this, the land was dead, with not a sign of life, save for an occasional raven which circled overhead.

The morrow was a bitterly cold, overcast December morning, with thirty degrees of frost. It was misty, though a sharp north wind was blowing. Our ears became frozen at once, in spite of our thick woollen helmets, and several of the men had their moustaches covered with icicles. We were compelled to travel by the compass, as we could not see our way because of the fog. This was very inconvenient, because holding it out, even for two minutes, resulted in one's hand becoming numbed. Fortunately, the night before, I

had worked out the direction of our march, so I was able to lead the caravan unerringly through the thick white mist. About eleven o'clock the sun came out, but shone palely, without giving any heat. An hour later the mist had cleared, and we saw in front of us the chain of the Kum Tagh, composed of reddish purple stones. Behind rose the bright limestone crags of the Chokh Tagh, which appeared only now and again through the mist that had formed between the two chains of mountains. During that day's march we had not come across many high sand-dunes, so we had been able to make good progress. I had hoped to reach the lake which lies between the Kum Tagh and the Chokh Tagh the following day, but unfortunately we had still another ridge to cross.

The weather was bad on 29th December. It was not very cold, being only about 18° , and owing to that there was a mist all day, and we never saw the sun at all. During the early hours the fog was so thick that it was barely possible to see more than fifty yards ahead, and once again we had to seek the aid of the compass, as we could find none of the surrounding landmarks. We took a north-easterly direction over large flat areas of sand, on which grew a few bushes and isolated tamarisks. We noticed how the small sand accumulations became real sand mountains, about 300 feet high. The caravan could proceed only very slowly. It was most aggravating that the fog should blot out all landmarks, and even from the top of a sand-dune one could not see the top of the next. It was therefore very difficult to find the way in order

not to overtake the camels. I pushed on ahead with Habiba, as the servants could easily follow our footsteps. Bobby came with us and thoroughly enjoyed climbing up and down the dunes. We rested on the summit of one for a while and watched the camels working their way up. I played with Bobby meantime, rolling him down the side of the hill, which thrilled him. When he got to his feet again he raced across the sand, barked at the camels and then tore back to me, and lay down panting.

Whenever we succeeded in happily reaching the summit of a dune we generally found that the descent was too steep for the camels, which meant turning back and finding another way round. We discovered in the midst of these mighty ridges deep funnel-shaped chimneys, sometimes as much as 120 feet deep, which naturally blocked our way. On one occasion when we had reached the edge of one of these deep crevices a camel took it into its head to go over the edge. Advice was then at a premium. First we had to unload him, and two hours elapsed before both animal and baggage were safely back on level ground. At midday we left the sand, and found ourselves on a plain covered with reeds and bushes. To the east lay brownish red mountains, of which it was possible to see only the foothills, as a thick fog covered the peaks. I wondered whether these hills formed part of the Kum Tagh or the Chokh Tagh, but I could not make up my mind, as clouds and mist surrounded us. In the middle of the day we came to a small frozen lake, on the banks of which we camped. Here I decided to have a day's

rest, for we had now found some ice and a good grazing-ground, and I wanted to explore the neighbourhood without being hurried. We would also be able to fill up the water-tanks and Habiba could bake some bread. He had wisely brought some yeast from Kashmir, and the bread was baked in square tins. He used a large iron pot for an oven, which he filled with sand, and in this he placed his baking-tins. He then put the pot over the glowing embers of the camp fire.

When the mist cleared, that afternoon, I discovered that we were at the foot of the Kum Tagh, as I had guessed. Nothing had been known till now of the existence of this clay plain and this fresh-water lake. I made a sketch of this curious scene of the mountains half buried in the sand, but it was a chilly undertaking unless I sat very close to the fire. The thick fog continued next day, so I whiled away the time by working out my topographical observations and by reading Mason's report on his expedition to the Kara-korams. I also studied Raquette's *Grammar of the Eastern Turkistan Language*, and played with Bobby, who seemed to be bored but was up to every kind of trick.

I set off in the afternoon on a reconnaissance to the Kum Tagh, accompanied by Rosejan. I took an easterly direction, as I wished to cross the chain in order to get a view from a high part of this range. I soon saw the volcanic nature of this district. Large black trappoid and granite blocks, which had changed the red sandstone into a brownish hard quartz, is the geological formation of these mountains. In the deep black crater-holes we saw queer-shaped yellow crescents

of sand clinging to the sides. I eagerly collected many geological specimens, and Rosejan had to carry them in the ruck-sack, groaning heavily under its weight. A little work, however, never did him any harm. The summits were still covered with clouds and banks of mist. We had to climb some fairly large sand-hills, which had formed at the foot of rocky crags, until eventually, about two o'clock, we reached the top, and gazed down on the sea of mist stretched out below us. Now and again in places we could see the blue surface of the Chöl Köl through the mist and the white cliffs off the Chokh Tagh.

We moved camp the next day to the other side of this queer desert lake, which in 1895 was the starting-point for Hedin, on his adventurous journey across the Taklamakan desert. It had snowed overnight, and the dunes which we were about to cross were covered with snow. The weather was indeed wintry, the sky was a bluish grey, and the thermometer registered 18° below freezing-point. After we had crossed this sandy ridge we marched along the bank of the great lake, which for the most part was frozen. When we reached the first yellow reeds the camels could scarcely be controlled, and we therefore ordered a halt for an hour, so that they could satisfy their hunger.

We discovered foot-tracks about midday, and saw ahead the smoke of a fire. We came to a cave-dwelling, constructed of earth, reeds and twigs, so low that I was unable to stand upright inside. A woman was seated at a spinning-wheel; two small and attractive children, dressed in rags, were anxiously watching her

as I entered with Habiba. I was given a seat by the small fireplace, on a kind of rug and straw mat. The old lady offered us tea, and told us that her husband was working in a neighbouring salt mine, but would soon be home. There are many fish in the lake, which are caught and sent to market in Kashgar. When we asked this lady to sell us a chicken and some flour she would not hear of it. She continued to spin, and we had no further opportunity of discussing the matter with her. About two o'clock her husband arrived, and he greeted us with a loud "*Salim Alaikim!*" We asked him if he would sell us a chicken and some flour, and he agreed. My plan was to move camp next day to the other side of the lake so that we could carry out our geological researches in the Chokh Tagh. I wanted to go round the lake by the north side, but we soon saw that large sheets of ice and swamps blocked our way. We were pleased when our fisherman came and advised us to camp on this side of the lake. Next day he wanted to guide us round the lake while the camp remained on the west side. This plan seemed to be reasonable, for it would have been impossible to have taken the camels across that stretch of ice.

When we had put up one tent I sent for the man and told him to point out the way across the ice, as I was not certain as to whether he would turn up next day to act as guide. We had to make a wide detour in order to cross the southern part of another lake, the Sorun Köl, because the water between the two lakes was not frozen and was very deep. The black shiny surface of the ice was partly covered with large, white

star-shaped snow-crystals. We came across several open pools of water, round which we had to make a detour. We reached the other bank safely and I was thus assured that next day we could begin our reconnaissance of the Chokh Tagh, which frowned down on us.

I devoted New Year's Day, 1928, to exploring this curious mountain chain. There had been a hard frost overnight, and we heard the cracking of the ice, which sounded like a cross between a fog-horn and a siren. Bobby could not understand it, and stood watching and barking at the ice, until eventually it became too much for him and he trotted back to camp. Kudret Akhon, who was with me, had never before seen ice, and looked more than doubtful as he slowly walked across the black surface. He was quite helpless, and more than once fell down, on one occasion taking the large photographic apparatus with him, which, luckily, was not damaged. The ice was as clear as glass, especially round the edge where reeds were growing, and one could see the bottom of the lake clearly.

The Chokh Tagh range is a large, steep wall of dolomite falling away to the west, and very much torn and fissured. About noon we halted in a small and barren valley, lit a fire and ate our lunch. I was able to eat only a few pieces of dry bread, sugar and tea, as Habiba had thought fit to forget the marmalade. In winter we always had to thaw our lunch before we could eat it. The bread became as hard as stone, and we had to warm it in front of the fire. It was very annoying to have such dull weather, for it made it impossible to take good photographs.

The next day we went round to the north of the Kum Tagh, which are practically buried by the sand-dunes. The country was difficult for travelling, as jungle had formed round the banks of the Yarkand river. We rode through many swamps and had to make large detours on account of ice and pools of water. We saw several wild-ducks and one very fine silver heron. At the foot of the Kum Tagh are a few small, deep blue lakes, forming a picturesque contrast with the cold, yellow surroundings and the sand-dunes, out of which appear reddish brown rocks. At last we saw the sun again. The Mazar Tagh from Maralbashi stood out in palest pink, with deep purple shadows, and it was these hills that we were about to reconnoitre.

We had now to find a good crossing over the Yarkand river, as there were no ferries in this district. Our fisherman from the Chöl Köl, Mehmed Akhon, was our guide. We approached the river through thick reeds and jungle-like tamarisks. We had anticipated a certain amount of trouble in crossing it, but when we arrived we found that it consisted of some frozen lagoons, and I could not believe at first that this was the Yarkand river. Mehmed Akhon was, however, right, and we crossed in a few minutes without any difficulty. There was one stretch of water about 24 feet broad and 6 feet deep which we had to cross, and when we came to the other side we noticed that Bobby was missing. Then we saw him on the other side, running up and down like mad and yelping bitterly. I had just told Rosejan to go back when Bobby bravely plunged in and swam across. As soon as he reached us he rolled in the sand to dry

himself. We continued on our way, through a jungle of tamarisk bushes and over frozen swamps, and at three o'clock the sun came out. Late that afternoon, just before sunset, the Mazar Tagh were a wonderful sight; the peaks, which are composed of dark red syenite, were turned to deep purple, while a blue mist veiled the foothills. We pitched our camp on a peninsula jutting out into a frozen lake, the surface of which was covered with snow crystals.

The following morning I started off at nine with Kudret Akhon to visit the Mazar Tagh. We made a bee-line for a landmark which we could see from our camp, our path lying across the frozen lake of Shor Köl. On this occasion I myself had to act as guide, but the ice appeared to be fairly firm, so there was no need for special care. The reeds and thickets were annoying, as we had to push our way through them. After an hour we reached the foot of the mountains, which were composed of porphyrite and black trappoid rocks like basalt. The small valley openings resembled gigantic craters, and reminded me of the large hollows which I had seen in the Kum Tagh. About midday I reached two peaks which rise about 1800 feet above the plain, composed of red syenite, of which the main range also is composed. From here I had a magnificent view of the large surface of ice and the jungle of reeds of the Shor Köl. We noticed some people gathering the reeds and dragging large sleighs well laden across the ice.

On our return journey to camp we met two shepherds tending some goats on the banks of the lake. There was no other sign of life in the neighbourhood, and the

grey-blue winter sky helped to make the country seem dull and cold. When I got back I had to doctor two camels who had developed sores on their backs. The tincture of iodine which I had brought from Kashgar again came in useful. Next day a dull march through reeds and tamarisks brought us to Maralbashi. It was market-day here and everyone was making for the town. There was a terrific crowd in the bazaar and it was only with difficulty that Kudret Akhon managed to make a way for the camels through the narrow streets. I myself had a good view from the top of my camel of the life and bustle of the people flocking round the booths. Rosejan that day had donned his new suit for the first time and had gone on ahead to leave my card on the Amban and to make arrangements for our quarters. Soon he reappeared and led us to a small *serai* where the Amban wished us to camp. That afternoon I visited this high Chinese dignitary. The Yamen seemed to be deserted, for there was not a soldier to be seen. I was presented to the honourable gentleman, and offered fruit, tea and cigarettes. He expressed a wish that I should spend a day here, and it required all my vocabulary to make it clear that we must move on without fail the next day.

We made a large number of purchases, in the shape of provisions for our journey to Yarkand. I also sent off a letter to Bosshard, in which I asked him to buy all the necessary stores for Khotan, and in particular to bring large wooden tent-pegs. Experience had taught us that iron pegs did not grip and were unsatisfactory in sandy ground, as they were short and thin. We had

frequently been compelled to tie the tent ropes to boxes, trunks, or the stems of trees. The Amban presented us with a leg of mutton and five chickens. I was somewhat apprehensive of the fact that there were always two Chinese sentries in front of our quarters with rifles, but they were doubtless there to ensure our safety.

I was most anxious to leave Maralbashi next morning, for there was nothing for me to do here, but it was a miracle that I succeeded in carrying out my plan. It was always difficult to get the men out of the large towns and bazaars, for, from their point of view, there was always gossip and food. It was in particular the latter that Kudret Akhon and Rosejan most appreciated. I could always say with certainty that whenever we reached a bazaar Rosejan would vanish and that he could always be found in the village kitchen, consuming colossal quantities of *pilau* and other delicacies. Rosejan was, in fact, always munching, and it was difficult to understand where all this food went. He was of the type to which one took an instinctive dislike at first sight.

There was always a commotion in the courtyard of our *serai* at night, as we were not the only visitors. What with the neighing of donkeys and horses, the fighting of camels, who used to bite one another while emitting loud snorts, the barking of dogs and the noise of the bells which hung round the necks of all these animals, sleep was impossible. The inhabitants themselves stayed up till very late, discussing the day's business and the latest news while smoking their water-pipes. Bobby, for the first time, that night had a real

thrashing, for he had seen fit to make himself thoroughly at home in my bed. At eleven he was yelping and scratching at the door. There was nothing for me to do but get out of my sleeping-bag, light the candle and let him out. I then shut the door, blew out the candle and went back to bed. A quarter of an hour later Bobby was back, yelping to be let in again. He continued incessantly, so finally I got up and opened the door. This time I left it ajar, so that he could go in and out; but even this was not a successful arrangement, because a few minutes later I heard the crunching of bones. I realised that he must have found his way to the kitchen chest and that I must get up again and investigate. Sure enough, Bobby was huddled in the far corner of the room, eating the beautiful roast chicken which had been intended for lunch the next day. When I tried to take the bones away the little wretch snarled and snapped at my hand. That was too much, so I caught hold of him by the scruff of the neck, gave him two of the best and chucked him out into the courtyard. I went to bed in the hope of having a little peace, but there was no rest, for the chickens which had come from the Amban, and which were housed in the kitchen, started to make a noise. In addition to all this, the owner of the *serai* had a bitch in his room, whose puppies howled all night. I got up early next morning and was relieved to see the last of Maralbashi.

That evening a man came to me and asked for a letter to the Amban of Kashgar, saying that the servant of the Amban had gone on ahead to Maralbashi on my instructions. I learned that the local Amban had thrown

our escort into gaol and kept him a prisoner for eight days. He had managed to return to Kashgar only because he was able to sell his horse. However, I discovered later that the rumour was that I had sent the man back because I did not want him to see what we were doing on our travels. We reached the main caravan route, which leads from Maralbashi south, after a five days' march, and came to Chahar Chamba bazaar, where there was a large *serai*. The day we arrived happened again to be market-day, and the place was astir. I had planned to make an expedition into the desert of Ordum Padishah and arranged, therefore, for the water-tanks to be filled. A villager presented us with a fine leg of mutton, so that we now had so much meat that we did not know where to put it.

Our caravan started off next morning at half-past seven, and followed the main route for an hour, then changing its course to a south-westerly direction to reach the centre of the desert. The path was deserted, and lay through worm-eaten tamarisk bushes, with the camels sinking into the ground at every step to a depth of about a foot. This was fearful drudgery, and I was very glad when we reached the first sand-dunes, over which it was far easier to walk. I noticed in the course of my travels in the desert that one does not really sink very deep into sand, especially on the windward side of the dunes. Tracks were numerous, and we met one or two woodcutters. At noon it was so hot that I perspired profusely in my fur coat.

We had to cross some lofty sand-dunes on 12th January, but these did not present any difficulties. We

passed areas of dead tamarisk-trees, which we avoided, and also fields of clay in which reeds were growing. We crossed a well-defined track and met a man with two donkeys, heading for Teren Azne bazaar. In the afternoon the dunes were smaller and we found odd isolated tamarisk bushes growing on them. The water-tanks were again leaking badly. Our new companion from Chahar Chamba, a staunch Turki with a flowing beard, walked beside the camel carrying the leaking tank and caught the priceless water in his wooden mug. One of the camels had developed a sore on its back from the heavy loads, and similar sores were beginning to develop on the backs of the other animals.

We came to barren, sandy wastes next day. We left camp in brilliant sunshine, the thermometer registering thirty-six degrees of frost at seven o'clock. The night before it had been bitterly cold in my tent, and, in spite of the fact that I had covered myself with my coat and blankets, I woke up at four o'clock, and the thermometer, which was lying on my table, registered twenty-seven degrees of frost. During that morning it seemed probable that we should not reach any more high dunes, as we appeared to be coming to an open, level plateau, but in the afternoon we reached a ridge of sand which grew higher and higher. Fortunately, I had given orders for wood to be collected and brought along from the last dead tamarisks we had passed. Our camp that day was pitched among high, barren dunes, so that it required great skill to make the tents stay up. The spirits of the men had somewhat fallen, owing to the barrenness of their surroundings, and that evening

there was much muttering of the word *jengal*. There were large patches of clay among the sand, which we followed, but I soon found that it was much more difficult to go forward over clay than over sand.

A small chain of mountains lay in our path to the south, and there was no other course open to us but to cross them. Some of the dunes reached a height of at least 180 feet, and I had to pick my way through all this sand with the utmost care. However, we soon came to an end of it, the weather still being fine, and found ourselves on a plain, thick with camel-thorn and reeds. We met two shepherds, who took us to the farm-house of Yolchi, where we were given tea and bread. Our hosts were anxious for us to spend the night there, but I was anxious to move on, as I wished to reach Yarkand next day. We went on therefore as far as Chugi, where we pitched our camp near an isolated hut.

The next day found my caravan passing along the main route to Yarkand, with poplar-trees on either side. I reached the bazaar at noon, and went off at once to the Mission Station, where the missionaries again received me with the greatest hospitality. I arranged for my worthy camels to be stabled in a large *serai*, where they could recover and be given rest and good food. The missionaries handed me my Christmas mail, consisting of a large packet of letters and parcels from home. I was still lying on my bed late that afternoon reading my letters. My mother and sister had given me great pleasure by sending me chocolates, as for more than six months I had not tasted a single

sweet. There were numberless things to be done in Yarkand: correspondence to be dealt with and plans to be worked out. The tanks had to be repaired also, and seeing to the baggage in general took time.

Two days later I started off for Karghalik, where I met my other companions. We had scarcely passed the main gateway of the town when I noticed that Bobby had vanished, and in spite of a thorough search we never found him. I missed my small friend, and I had looked forward to the time when I should be able to introduce him to Kurrum. Bobby was lost, but he had played his part. De Terra was busy with his arrangements for his journey to the Kunluns. There was always a great deal of life in the small *serai* where we were staying. I called on the Amban, Mr Feng-Tsing-Tao, who was a type peculiar to himself. Bosshard and de Terra had many amusing tales to tell of him. He was small and slim, but very fidgety, and seemed unable to sit still for five minutes. He was very proud of his knowledge of English and was always trying to improve it, and was undoubtedly an ambitious man, but a very nervous official.

A Snowbound Desert

WE purchased five more camels in Karghalik, and Bosshard engaged two more servants, by name Gurban Akhon and Kadre Akhon. Amongst our new camels was a light ochre-coloured one, which became our leader. We left the large oasis separately on 20th January. De Terra, who with Abdul and his donkey-caravan were going in the direction of the mountains to Kilian, accompanied us to the gateway of the town. I should not see de Terra again till we returned to Kashgar in five months' time. Leaving behind the large fields and gardens of the oasis of Karghalik, we came in an hour to the gravelly desert of Akin Langar, which three months previously we had crossed on our journey from Guma to Karghalik. The weather was still very wintry, and the sky was overcast, with a fresh wind blowing. About four o'clock we sighted the old isolated tower-like *stupa*, which rose up from the desert about three miles to the north of the small farms of Kosh Langar, on the edge of the desert. We pitched our tents at the foot of these ruins. As well as Habiba, Rosejan and the other servants, we again had back our worthy old Sabur Malik. I greeted him in Karghalik, shaking him heartily by the hand. It will be remembered that we had sent him back with the newly hired camels from Suget Qaraul to the

Aksai Chin plateau, in order to fetch the baggage which we had left at our dump. I was very pleased to see him again, if for no other reason than that it would give me another opportunity of talking Tibetan. Sabur Malik had lived for many years in Lhasa, and the Ladakhi-Tibetan dialogue was his mother tongue. Our camp that evening was in a very picturesque setting. The old ruin was lit up from different angles by two camp fires, while a small crescent of the moon cast its pale light so that the *stupa* rose silhouetted against the bright evening sky.

It blew hard during the night and while we were leaving next day. The caravan went off in an easterly direction over the flat sandy and gravelly desert. We came across a large bundle of reeds and rushes, which undoubtedly some shepherds had collected. We set fire to this bundle, as it was so bitterly cold, and thoroughly enjoyed the tongues of flame which shot up in the air several yards high. We pictured the disconcerted faces of those shepherds when they returned and found that the only remains of their pile were ashes. About midday we found ourselves at the foot of some sand-dunes about 300 feet high. It was now a case of setting out across this sea of sand, which was totally devoid of vegetation. Our progress from now onwards was slow, as we often had to avoid steep slopes and deep caverns in the sand which blocked our way. Bosshard and I went on foot, the better to be able to lead the caravan and discover the best method of getting over difficult places. We found ourselves in a mountainous area, with peaks, though the whole was

composed of sand. The Turkis have given the name Jellat Kum, or the Devil's Desert, to this part of the Taklamakan.

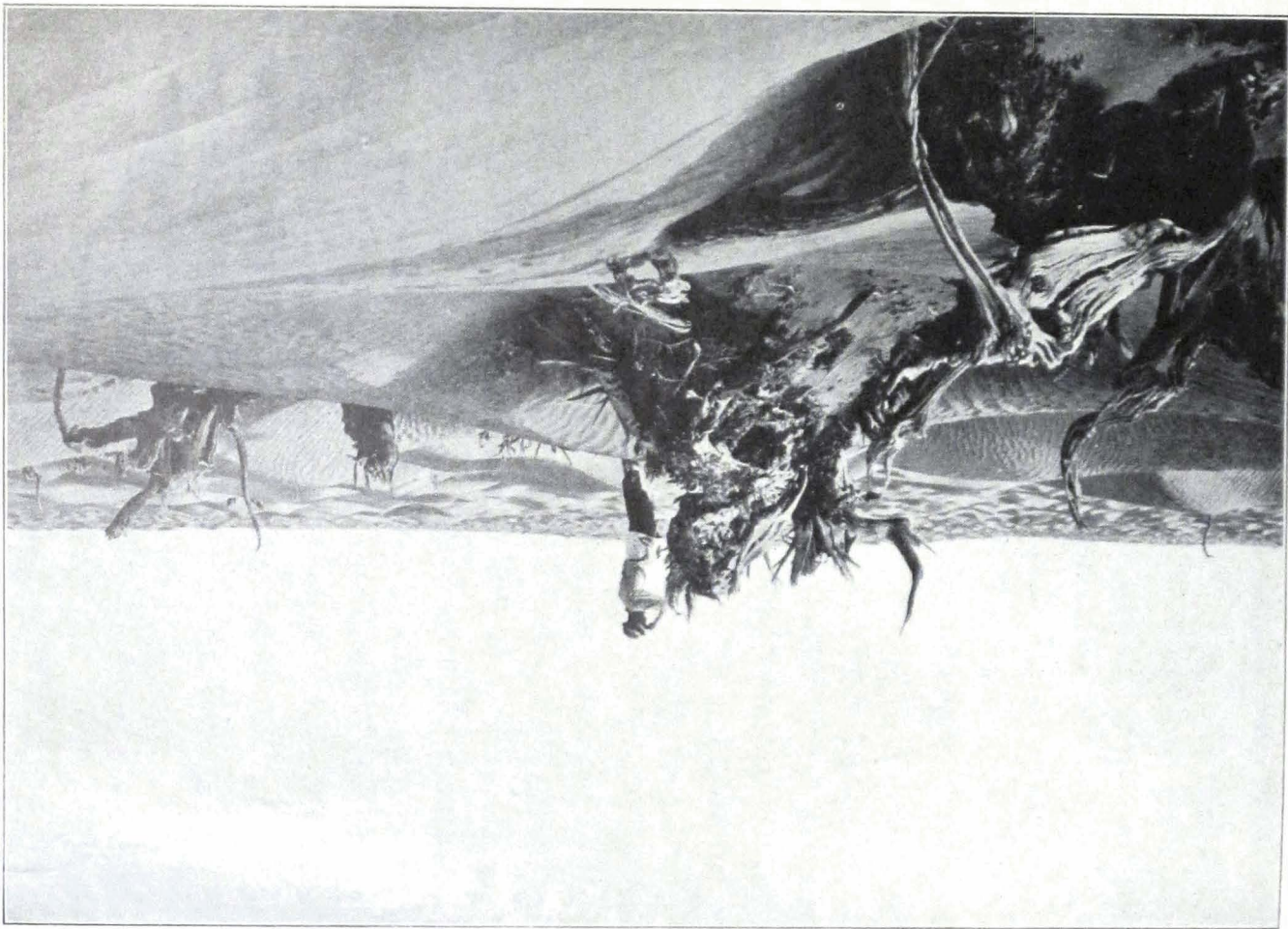
When I reached the summit of one dune I noticed on the opposite slope of another some bleached bones. We hurried down and found ourselves face to face with a human skeleton, only the skull and various other bones appearing above the sand, though we soon dug out the rest. We pitched our camp here, as there was a fairly level spot quite close, and then proceeded to carry out our investigations. We wondered who this unfortunate person was who had erred and had lost his way in this sea of sand, and how long he had been lying here. The bleached condition of the bones rather pointed to the conclusion that they were old. We had hoped to find in the sand the remains of some belongings of the dead person, but there was nothing to be discovered in the way of coins or clothes. We came to the conclusion, after very careful consideration, that a murder had been committed here. The peculiar position of the skeleton and the skull fractured just above the eyes confirmed our conclusions very strongly. The skeleton was lying stretched out full length on its back on the slope of a large dune, with the head pointing downwards. It therefore seemed hardly possible that this man could have met his fate whilst climbing up the side of the dune. We were all the more convinced that we were right by the fact that we found no traces whatsoever of his belongings. In all probability he had been dragged out into the desert, killed and robbed. The spot was not more than five miles from

the main caravan route which follows the southern edge of the desert. The murderers would have known perfectly well that no one would find the remains, for the natives never penetrate into the heart of the desert. On the south edge are situated the rest-houses of Kosh and Akin Langar, which are nothing more than *serais*. All caravans, after the tiring march across the sand, rest here. The victim may have been a merchant who had halted for the night at one of these *serais* and been secretly dragged off by his enemies. About two years before two Indians had vanished in a mysterious manner on the great caravan route from Kashgar to Yarkand. In vain efforts had been made to trace them, until eventually a clue was found—namely, the severed remains of a body which had been buried in the courtyard of the *serai*. We packed the skull very carefully indeed, in order to take it back to Europe to carry out further anthropological measurements, but the other bones we buried in the sand. The mighty dunes of the Devil's Desert will keep a silent watch over this grave, and it is more than probable that no human being will ever again visit this spot.

Late that night it came on to snow, and the following morning when we left our tents the dunes were covered with snow. It continued to snow all that day, and we wandered through a thick white mist. It was now impossible to see over the slopes of the sand-dunes—one could not even tell whether one was on the summit, the lee or the windward side. We often quite unexpectedly found ourselves going downhill, and only noticed this when the ground suddenly went away from

THE DEAD POPLAR TREES ARE OFTEN PARTIALLY BURIED BENEATH THE SANDS AND APPEAR TO HAVE BEEN TWISTED ABOUT.

DEAD POPLAR TREES IN THE DESERT



under our feet, and we slid forward a few yards. We then had to go back to warn the camel-drivers. In some cases it was impossible to avoid the steep slopes. I was just saying to Bosshard that I was very much surprised that the heavily laden camels managed to get down the steep slopes without capsizing when suddenly one of them came sliding down, fortunately with no harm done. Snow continued to fall throughout the night, and next morning when we looked out it was still coming down, and the snow lay to a depth of four inches. Who would ever have imagined that Central Asia's largest desert could have produced such snowstorms? About seven o'clock the weather cleared, and we had a fine view of this snowbound desert. We now discovered that we had pitched our camp in a hollow enclosed by two of the highest sand-dunes. The sun was out all day, but its light was very pale owing to a damp mist. In the afternoon the sand-dunes seemed to be lower, but the only vegetation visible was a small bush, beside which we decided, for want of a better site, to pitch our camp.

We came across a clump of tamarisk bushes the following day, half-an-hour after we had started. In a few minutes we had made a pile out of this dry wood, and had a fine fire burning, at which we warmed ourselves until the caravan arrived. Whenever it had been very cold in the morning we had always enjoyed the warmth of the sun during the day. The glare from the snow was so trying that we all had to put on our dark glasses. We passed by patches of reeds that afternoon, and sighted two small pools of salt water.

We pitched camp here, as there was a spring near by. A hut made of reeds, and fresh tracks in the snow, showed that men must have been there that day. On our arrival in camp I saw two black specks in the distance, which I thought at first must be people, but on looking through my field-glasses I saw at once that they were large black vultures. We stalked them with our guns, but as soon as we got near them they flew away, flapping their heavy wings.

I saw two men driving cattle towards the north, as we were leaving, early on 1st February. We followed a path which was fairly well defined, and led in a south-easterly direction. About ten o'clock we met a woodcutter, who pointed out to us the position of Ara Kum and Townen Bazar. Thereafter we went to the north-east, and two hours later reached Ara Kum. We stopped at the house of the oldest inhabitant, and ascertained that the Amban of Guma had sent out a search-party of fifty people to look for us. The country was in a state of excitement because no one knew where we intended to stop. We had all wanted to go on to Kara Tagh Aghzi, but at three o'clock we were still four miles away. We therefore halted on the caravan route, about two and a half miles before Guma. The camels had not yet been unloaded when an envoy of the Aqsaqal and our old friend, the Beg of Guma, came running up. They tried all means in their power to get us to move on to Guma, but as we felt that we should be more comfortable in our tents than in the *serai* we decided to stay where we were.

We were very busy next day, for it was essential

that our supply of provisions and firewood should be replenished. We therefore sent Kadre Akhon and Rosejan to the Guma bazaar to arrange for further supplies. We also had to get more fodder for the camels, for we had no idea what we should find in the desert to the north and north-east of Guma. We had to buy *kunjura*, a kind of linseed oilcake, and this had to be mixed with chopped straw. The camels also had to have liquid linseed oil, which was poured down their throats by means of a funnel. Some of the animals, owing to the hardships of the journey, had developed sores on their backs, and Bosshard spent the whole morning washing and cleansing the wounds, and dressing them and painting them with iodine. The camels were all taken to the village pond, where they drank water, and after loading up a leather sack of ice on to one of them we were ready to start off again on our journey.

I was more than keen to explore this part of the desert, both from the geographical and the archæological aspect. A large lake, with a shore-line of about sixteen miles, is shown on nearly all maps to the north of Ara Kum. No European had ever been there, and the existence of the lake was more or less problematical. If my idea was accurate—namely, that in earlier times the rivers which emanated from these ridges of the Kunluns flowed farther into the desert than they do to-day—it would also be possible that ruins existed between the present cultivated areas and the absolute desert wastes, as is the case at Khotan. Europeans had now and then received reports that ruins existed to the north of Guma, but after Sir Aurel Stein had discovered

that certain reports of a person called Islam Akhon were false, one must assume that these reports are groundless. I had already—in the previous October—made inquiries in Guma, and had received some interesting information. I was next able to ascertain that such names as Ara Kum, Laika and Kokteret, on the map of Sven Hedin, were correct. I was also told by an old Indian that at a place about two days' march from Kara Tagh Aghzi there existed a large ruined tower. He told me various other things, such as that there were wild animals there and no one could get near the place, and I thought to myself that there must be some truth in all these stories.

C H A P T E R E L E V E N

Excavations of Old Ruins

THE 2nd of February was a dull, wintry day. Blue-grey clouds were rolling across the sky and it looked very much like snow, especially when we were passing the last mud-houses and working our way in a northerly direction among tamarisk-trees. The Amban had again sent two of his servants with us, one of whom was mounted. We felt sorry for the animal, which was accompanying us across the desert, and suggested that it would be far better to leave it behind, but this, however, was turned down. This did not surprise us later on when we got to know Sidik Akhon better, for he was undoubtedly the laziest individual we ever encountered. Now and then we set light to some dry bushes, which burned briskly. We pitched camp in the middle of a field of tamarisks and camel-thorn. The snow was still lying to a depth of nearly an inch, so that we did not have to touch our water-supply.

A surprise awaited us next day. We had imagined that we were in the desert, and were amazed when suddenly we came across a much-used path leading north, then bearing north-west, and this we followed for three hours. About eleven we came to a well nearly thirty feet deep. The path leading to the well was

supported by the stems of poplar-trees, with which were interlaced reeds in order to prevent sand from falling in. Sidik Akhon greeted the well with a smiling face, and we saw him vanish with a small pail in order to fetch some water for his pony. After a long interval, during which we thought he must have fallen in, he reappeared and gave his horse the salty water. At midday the country grew more level, and the tamarisks gave way to poplars, and an hour before we halted we came to a wood of dead poplars, represented by white, splintered trunks. Some of these were in a twisted condition, as though the trees had died only after a terrific struggle. We wondered whether this could have been caused by the driving sand from the north-east, which killed all vegetation, or whether some other factor had been the cause. It was not till I had finished my journey that I found an answer to this question.

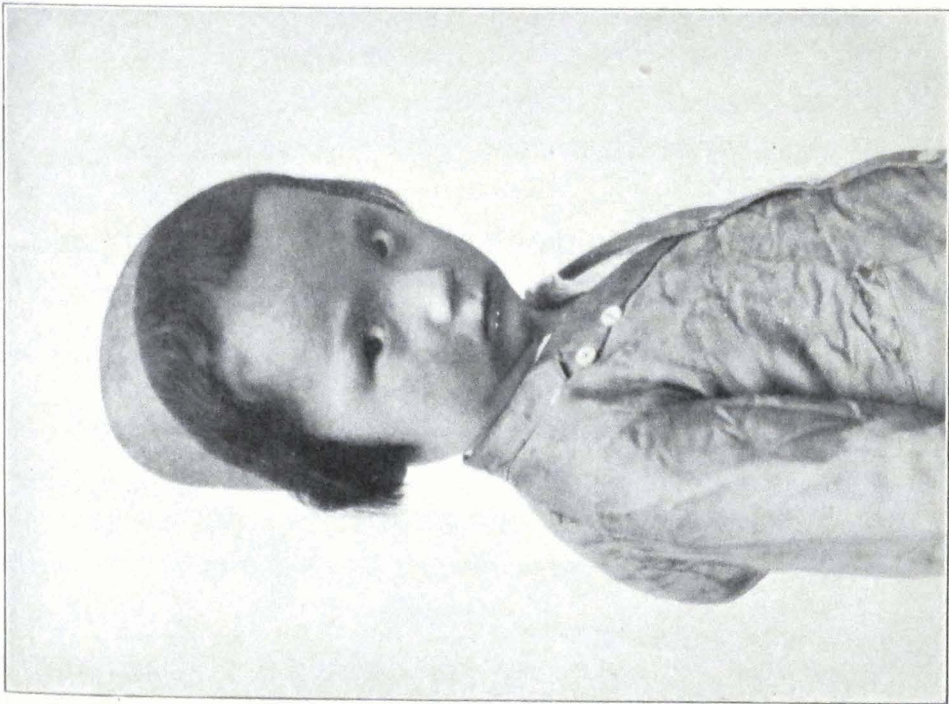
The camels were loaded up for the next few days by moonlight. It grew colder as we got further into the desert. We passed through several woods of dead poplars, like isolated cemeteries among the sand-dunes, and in many places the dunes had penetrated in among the dead trees. At four o'clock we reached our most northerly point and the next day I wanted to go in the direction of Pialma. We could still see a few isolated trees to the north, but we could not think of going any farther into the desert. We found no traces of the large lake, with the exception of one or two salty pools, which were overgrown with reeds. The inhabitants of Ara Kum likewise knew nothing of this lake.

The bleak clumps of tamarisks and the splintered poplar-trees stood like ghostly sentinels against the yellow sand. We pursued a south-westerly course to Pialma during the next few days, amid undulating dunes which stretched as far as the eye could see. Sidik Akhon occupied every minute of our halts by dismounting to have forty winks in the sand, even though it was only for the briefest of spells. One morning, when we were waiting for the caravan to catch up, and Sidik Akhon was already asleep, we arranged with the men to allow him to complete his nap, for he could easily follow our footsteps. We had tied up his black pony to the stump of a dead poplar, and we could see them from a distance, as they contrasted sharply with the sand. He rejoined us at mid-day, pretending that nothing had happened, but he must have had a great shock when he found himself alone in the desert.

It was pleasantly warm in the middle of the day in the sun. Even when the temperature was only 5° in the morning, when we started, it generally rose to 72° in the middle of the day. We all looked forward to the midday halt; we always tried to find a sheltered spot, and one where there was camel-thorn growing, so that the camels could graze. The servants then lay down and slept, while we too usually had a nap. Peace reigned, and the stillness was unbroken save for the tinkle of a bell as a camel bent down and tore up a bush. We were astounded one day when we met a small brown goat searching for some leaves among the dead poplars. He had no doubt lost his way and

was unable to find the herd again, and he would undoubtedly have ultimately died of starvation had it not been for the snow which had fallen during the past week. Our supply of fresh meat had run out, so we slaughtered the animal at once, and put the body on the Amban's horse. The spirits of the men rose in anticipation of the evening's feast, whilst Rosejan sang a cheerful song; at least he howled more than he sang. When we came to a ridge about ninety feet high, however, out of which stuck more dead poplars and miserable stumps of tamarisks, the servants again became very depressed. The two servants sent by the Amban were without any provisions, and now relied on us. Sidik's pony had had nothing to drink for three days, but did not seem to mind.

We passed an uneventful day on 9th February, though the next day we were rewarded by the sight of some ruins. In the early morning we had passed some dry river-beds, the banks of which were thick with dead poplar woods, separated by a sandy ridge from sixty to ninety feet high. The weather was glorious, with a blue sky overhead, and by ten o'clock it was already too hot to wear my coat. About midday I was some distance ahead of the caravan when I saw, from the top of a sand-dune, another dried-up river, in which were live poplar-trees as well as dead ones. I descended, and found myself facing the ruins of a primitive hut, though all that remained were the wooden posts jutting out of the sand. I had studied the literature about old buildings in Chinese Turkistan, and I therefore knew at once that these were the remains of old



A SMALL TURKI GIRL

THIS GIRL POSED VERY UNWILLINGLY.



A TURKI GIRL FROM YARKAND

THIS GIRL IS DRESSED IN A BEAUTIFUL SILK EMBROIDERED KHOTANESSE ROBE WHICH IS NOW SELDOM WORN.

dwellings. I soon discovered more ruins, and we therefore halted so that we could examine these at our leisure and make a plan of them. We managed to dig out some of the huts in the course of the next few days. They were not large, and consisted of four to eight trunks of poplars lashed together. Some had been entirely buried in the sand, so that only about ten inches of the posts appeared above the ground, while others were entirely free from sand. In some cases the large cross-beams still remained, as well as the remains of the roofs. A few of the small huts had walls made out of mud and reeds.

We came to the conclusion that they were only the remains of an old settlement of shepherds, because none of the posts had in any way been rounded off or cut, and also there were no stucco walls. In the course of the morning we dug out another ruin, with a clay floor, about six feet below the ground. Here we found a vessel, hollowed out of a tree-trunk, for making butter. We also collected some brick-red pieces of tile, which were not, however, decorated. The chances of finding anything further were now small, so we decided to push on next day.

The weather was most depressing. Sand and grit were driven into our faces by an east wind, and the whole country was enveloped in a cloud of dust. We came across several withered bushes, to which we set fire and which burned bravely. On we went through woods of dead poplars and over endless sand-dunes. The scene never changed, and so the days dragged by. I walked most of the time, so that I could lead the others,

while Bosshard usually made himself comfortable on his camel. As I walked for hours at a stretch through this monotonous country, with nothing to concentrate on save to keep a proper course, thoughts of the past came to me. I recalled my travels with my Afghan friends in the wilds of the mountainous regions of Central Asia; I thought of the happy times I had spent in India and Europe. Memories of my youth came back to me and I remembered trivial things which I had long ago forgotten. Thus I whiled away the long hours in the desert and, in fact, relived my whole life. I need hardly add that it gave me a most peculiar feeling.

On 12th February we emerged from this zone of tamarisks on to a flat, sandy and clay area, which lies to the south of the Taklamakan desert. We were now to make discovery after discovery. We had scarcely left the tamarisks when we suddenly came across a large number of remains of clay vessels, some of which were red and some a brown colour, and ornamented with designs. It was clear that these must have been once vessels and pots, as in many cases the handles were still there. Stein's theory is that they are the remains of the last journeys of nomad settlements, but we were not satisfied that this is the case. It was not till we had had an opportunity of studying other *tattis*, or ground strewn with pottery debris, in the region of Khotan that we were able to express any opinion as to their origin. We decided that these remains which we had found were of old urns, in which had been placed the ashes of the dead.

Terraces like *jardangs*, or ridges consisting of stratified clay jutting out of the sand, attracted our attention by their shape, but it was not till next day that we were able to study their curious structure. About eleven o'clock we saw in the distance a belt of poplar-trees, and a woodcutter whom we met told us that this was Pialma, for which we had been making during the last eight days. We had therefore managed to keep our direction very well across the desert. We rested and had our lunch on the bank of the Duwa river, which was dried up at this time of year. The Beg of Pialma paid us a visit, and we were able to replenish our stores. We then took a north-westerly direction back into the desert in order to pitch our camp that night near the old ruined Buddhist *stupa* of Kara-Kir-Tim.

We started excavation operations that afternoon on the west side of the tower, and continued next day, with the assistance of a large crowd of workers which we had obtained from Pialma. Sabur Malik and Kudret Akhon were sent with the camels to the village to buy food for ourselves and the camels, ice and firewood. The camels had to be watered, too, since they had had nothing to drink for the last ten days. Whilst Bosshard was superintending the excavations I reconnoitred the desert to the north of our camp, in the hope of finding more ruins. Luck was with me that day. About one mile to the north of the *stupa* I came across more remains of vessels, and reached a small mound. After closer investigation it turned out to be a rubbish-heap; remains of pots, goat-dung, rags, apricot and peach stones all lay jumbled together, and piled up to a height

of nearly six feet. I looked in vain for some old manuscripts.

My attention was drawn to another structure, about two hundred yards east from where I was. In places in the sand I found small pieces of stucco on which were patterns of lotus-flowers. There could be little doubt that originally they had formed part of a large goblet which had been used in the worship of Buddha. It was clear that these ruins all dated back to Buddhist times, and my subsequent observations confirmed this.

I visited systematically all the hillocks in the neighbourhood, and was able to establish that the greater part of these relics had been made by the hand of man. I was particularly attracted by one, the sides of which were beautifully carved.

I returned to camp about midday, and told Bosshard of my discoveries.

The excavations at the *stupa* had brought nothing to light, and we therefore decided to take eight of our best men and see what we could find in the rubbish-heap. We did not discover any manuscripts, but the hillock to the east did reveal several interesting objects. I turned over the earth, in which were small pieces of pottery debris, and found that the men had unearthed a whole series of small plastic figures. I guessed at once that they had been part of a small Buddhist shrine. There were numbers of fragments decorated with lotus-flowers, as well as other symbols. One or two small Buddhist figures which were found in the sand confirmed my opinion. We soon reached the feet and hands of a large statue, round the base of which

extended a frieze of tiles, painted in shades of deep blue and reddish brown. A man handed me a Chinese copper coin, about a fifth of an inch thick and covered with patina. I immediately recognised on one side the well-known mark X, which is characteristic of the Wu-Tschu pieces of the Han period (207 B.C.—A.D. 220). By the end of the day we had dug out most of the shrine, and next day we moved our camp there.

Further excavations produced glass, bones and mother-of-pearl, which at that time was used for necklaces. We also found more Chinese coins. That afternoon I came across yet another shrine, and we dug out another goblet, its base carved with lotus-flowers, and the life-size feet of a Buddha. Legs, hands and arms, as well as part of the torso, lay strewn about all over the sand. The many signs of fire among the ruins, the existence of wood-ash and the peculiar character of the stucco figures made me come to the conclusion that this shrine must have met its end through fire. The houses, too, appeared to have been victims of the fire, as only the clay floors, clay fragments and charred pieces of wood remained. A large mill-stone pointed to the fact that in earlier times water must have flowed through this settlement. Undoubtedly this ruined Buddhist town at one time lay on the old silk-caravan route, which passed at the foot of the southern end of the Tarim basin. If we try to identify the position of these ruins we are given a clue in the words of Hsuantsang, A.D. 700. He says that when a traveller leaves Khotan and has travelled 300 li (2-3 li=1000 yards) in a westerly direction he will reach the town

of Phou-Kia-I, which from earliest times has been famous for its wonderful Buddhist statue, to which the Chinese pilgrim refers. Sir Aurel Stein has said that Phou-Kia-I is in the neighbourhood of the present-day Pialma, and I therefore am of the opinion that this old ruined town is identical with it.

The weather on 14th February was appalling. An icy cold north-west wind blew the entire day, and made working in the open very difficult. The packing of the treasures which we had found and the labelling of them was a task which was most unpleasant, as our fingers soon became numb. It snowed in the night, and it seemed as if unsettled weather had set in, but as it happened it cleared by nine o'clock, and in an hour the snow had melted. That day our path led through areas covered with tamarisks. In the afternoon we met an old woodcutter, with two donkeys, who said that he had left Khotan that day.

We continued our journey on 16th February, in glorious spring-like weather, across ridges of sand, bearing east. We ate our lunch on the old *tatti* of Karadübe, where fragments of clay vessels and bones were strewn everywhere. We soon saw in front of us the poplar-trees of the Kara-kash district, and on the edge of the cultivated area we pitched our camp. We had to cross several tributaries the next day before we came to the inhabited zone of Kara-kash. We rode across fields, along dusty roads, past mud-houses, the inhabitants of which stared at us curiously, the more so as we were approaching from an unusual direction and not along the famous caravan route. We reached

Kara-kash at noon, where both the servants of the Amban left us. The Amban of Kara-kash sent us his respects through two envoys, and expressed the wish that we would call on him. We did not, however, stay long here, for we wanted to get to Khotan, where a lot of work awaited us. The country-side, with its dark fields of rubble and ditches, reminded me very much of the North German plains. I had looked forward with a certain amount of excitement to the crossing of the great Kara-kash river. We were, however, overcome with surprise when we saw the amount of water which trickles down at this time of year, and we were able to cross on foot without even taking off our shoes. We pitched our camp in the midst of the old *tatti* of Tasmatshi. Earlier travellers have investigated the origin of these clay remains of vessels.

The 18th of February was a glorious spring day. The temperature in the morning was 68°, and we marched along a broad road, with poplar-trees on either side. About ten o'clock we passed a watermill some distance away. We visited the mill, which consisted of seven large revolving granite stones. As soon as the corn has been ground the miller blows a horn to notify the villagers that they can bring a fresh supply. When we first entered the great oasis of Khotan and heard this continual blowing of horns we could not imagine what all the commotion was. The nearer we came to the heart of this town the more life we found. We ate our lunch beside the gateway, and then entered the bazaar, mounted on our camels. Sabur Malik, who had been there before, soon found the house and

serai of the worthy Badruddin, who very kindly offered us shelter. We had placed at our disposal three large rooms, beautifully carpeted, also servants' quarters and a large garden. The Chinese postmaster delivered a colossal mail, and that afternoon and evening we paid several calls.

Khotan

OF all the towns which we visited in the course of our travels, Khotan seemed the most isolated and cut off from the world. There was nothing to remind me of Europe. We met Europeans in Kashgar, Yarkand and Leh; in Kashgar there were representatives of the British and Russian Governments; in Yarkand, as well as in Kashgar, were Swedish missionaries; and in Leh during the summer months, besides the British Joint-Commissioner, there were Bishop Peter, Colonel Berry and the various Europeans who passed through whilst shooting in the district. This isolation of Khotan is no doubt the reason why the arrival of a European creates such a stir, for it is only rarely that a European visits here. There was always an air of peace in the bazaar, except on market-days. This stillness was never disturbed by traffic as in Yarkand and Kashgar, where *mappas* are driven through the crowds, accompanied by the shouts of the drivers warning people to get out of the way. The Oriental peace of these towns has departed because of this ceaseless flow of traffic and riders. Here in Khotan no one is ever in a hurry; there is no loud shrieking as in Yarkand and Kashgar, for Khotan is a town in which everything is done peaceably and in good order.

We felt at ease in Khotan from the first moment of

our arrival. We saw idealistic scenes in the garden of our worthy Badruddin, whose small wooden pavilion was a popular rendezvous. At night both the Chinese soldiers who had been placed at our disposal by the Tao Tai as guards of honour slept there. In the early morning the Mohammedans used to forgather there for morning prayers, generally in groups of three or four, and all keeping time. As each prayer lasted about ten minutes, and had to be performed not less than five times a day, these people had a certain amount of mental exercise, which did them no harm. Sometimes I used to see the interpreter, Kerim Beg, sitting alone, and reading aloud from the Koran. Then occasionally meetings were held there and business transacted, during which heated discussions would take place. During the hot hours of the day Badruddin and his sons took their midday siesta there, and I frequently saw our host, Kerim Beg, the Chinese soldiers and one or two Indians sitting together, smoking a water-pipe, drinking tea and playing cards or dice.

Old Badruddin was a worthy old boy, with a roguish twinkle in his eye. I was often amused by Khan Sahib, who would come softly into my room and whisper to me in Persian what he thought of Kerim Beg, and I used to catch the words, "*O sheitan ast,*" meaning, "He is a devil." Kerim Beg was very fond of making allusions to his superiors, and emphasised his remarks with gestures to show how much the Amban disliked the Tao Tai. Badruddin knew how to sell us fine pieces of silk, or carpets, or some antique. He often appeared with his son carrying the particular work of

art wrapped in many layers of cloth. The old man would then come out with the words, "*Bisjar ala ast*," meaning that this was something quite out of the ordinary. At the same time he offered it at double its value. Like all Orientals, he expected you to bargain with him, and I am sure that this gave him more pleasure than the actual sale of the article.

Khan Sahib was very attentive to his guests. It is a custom that, however short a visit is paid, tea, cigarettes and sweets must be offered. When we first arrived at the house of Badruddin tea was brought at once, and also a small table on which were ten small plates, laden with candy sugar, little cubes of sugar, walnuts and little sugar cakes. The plates and the silk tablecloth covering the lacquer table were quickly removed. I would have liked to have tasted some of these cakes, but I guessed that they were stale and that no doubt the children had sampled them, as some looked very well polished. If we received any guests when Badruddin was there the table would arrive without fail. We knew it so well that we could scarcely refrain from laughing when Badruddin or his son left the room in order to produce it.

The moment we arrived in Khotan we were overwhelmed by sick people. On the third morning we treated nearly ninety patients, and we came to the conclusion that we should have to fix definite visiting hours or we should never get our work done. Many of our cases were hopeless. We were amazed at the number of skin cases and cases of diseases of the genital organs (the majority being syphilitic sores), gout, sore ears and

eyes, and malaria. We got very good results from using artophan, and were much surprised when patients who could scarcely move, when they came to see us again after a few days were able to walk. We also cured a few cases of deafness caused by the fact that some of these people had never washed their ears in their life. It is almost impossible to imagine the lumps of filth which Bosshard extracted from their ears. Some of the consultations were most amusing. One day a Turki arrived who said that he always got out of breath if he walked quickly. Bosshard then advised him to walk slowly, which he said would have the desired result. The wife of the Aqsaqal, who looked very run down, was ordered eggs beaten up in milk.

Khotan can be described as a gigantic garden-city, and it was possible to see from the street the many small irrigation canals which run through the gardens. There was no difficulty in believing, from the efforts of the population and the Chinese Government, that it was their desire to make this great oasis a model. We noticed with what pleasure many householders tried to beautify their homes. Pointed and carved windows, carved balconies and pillars, were ample evidence of this. At the close of the day oil lamps were lit in the streets of the bazaar, for they have similar street lamps to our own, except that they are placed in small niches on the side of the house. Broad streets with poplars on either side diverge from the town. Should it not be market-day these streets are amazingly quiet, only disturbed now and then by a man driving a donkey or a camel caravan. We rarely saw horsemen here. This

absence of traffic reminded us of the town of the Sleeping Beauty.

We paid three important visits as soon as we arrived : to the Amban, the Tao Tai and the Tungling, or General. We were very favourably impressed by all of them, and our good personal relationship with them turned to our advantage later when difficulties arose. A few days after our call the Tao Tai gave a feast in our honour. We were received by our host and led into the reception-room, where the other guests were already assembled. Besides ourselves there were several officials, one or two Turki merchants and the General. The menu, half European and half Chinese, was exceptionally good, and the conversation was exceedingly amusing and stimulating. We were much concerned that we were not able to speak direct to our host, but there were good interpreters and we always spoke Hindustani with the Chinese. Our host and guests threw bouquets at each other all the time. These people, however, had a great sense of humour, and the time flew by very pleasantly. The General, who was seated next to me, was a gentleman with a corporation, a round face and pleasant expression ; he was very friendly, and laughed the whole time. Alcohol was much in evidence, as is always the case at Chinese dinners, and we were more than pleased when the Tao Tai offered us champagne. The Mohammedans were just celebrating the Fast of Ramadan and they were not allowed to take anything between sunrise and sunset. The Turki merchants found themselves in an embarrassing position, as their host continually pressed on them food and drink. Most

Mohammedans, however, did not pay much attention to this, and several drank a glass of Cognac without turning a hair. Here in Chinese Turkistan, however, the writings of the prophets are not so strictly adhered to, according to our good Habiba, who was a strict Mohammedan. He often used to say, shaking his head when he saw his principles disregarded: "They are not true Mohammedans."

Some days later the Amban invited us to lunch. He, contrary to the Tao Tai, had asked the Chinese merchants. The lunch was served in a charming summer-house in the garden. I can always sympathise with the love of a Chinaman for his garden. Every Chinaman who invited us showed us round his garden with its beautiful flowers, and often would pick a fine specimen of a flower and hand it to us. We were the guests of the Tungling when we returned in April from our expedition into the desert. He had laid out a very fine garden, and we were there at the time when it had just been finished. We rode there accompanied by Kerim Beg, and had scarcely passed the door when the military band blew a flourish of trumpets. We were greeted at the entrance by our noble host. Large numbers of guests were wandering round the garden, where a small fountain created a great sensation.

We shall always have pleasant memories of the happy hours of conversation we enjoyed with an Armenian merchant, Keraken Moldovak, the owner of a carpet and silk factory. We were much astonished when we first visited him in his tiny house in the main bazaar street and discovered that he was an educated man

with European habits. He was able to speak French and English, and had a fine library, containing many books on the war. He was particularly pleased to see us, as he could again get first-hand information about conditions in Europe, which he had not had for some time. He took us over his factory, and we were grateful to him, for he gave us some archæological specimens. Carpets and silks are important exports for Khotan. To this very day a traveller can obtain wonderful specimens of silk work in Khotan, and particularly fine are the *chapanes*, silk-woven garments, which, unfortunately, the inhabitants now seldom wear. The embroideries, which often look machine-made, like chain-stitch, are all made by hand, with a special kind of hooked needle called the *ilmek*.

The origin of the silk industry of Khotan is described by Hsuantsang as follows: "In olden times neither the mulberry-tree nor the silkworm was known in the country. One day the inhabitants heard that in countries to the east of them these were to be found. They therefore sent envoys to discover them. The Duke of the Eastern Kingdom—namely, China—then held the secret and did not wish to reveal it. He kept a careful watch over his district and did not allow either the seeds of the mulberry-trees or the silkworms to leave the country. The King of Kustana (Khotan) sought the hand of a princess of this Eastern Kingdom as a sign of his loyalty and friendship. As the Duke was favourably disposed towards this neighbouring state this request was met with approval. Thereupon the King of Khotan sent a messenger as escort for the

princess, telling him to inform her that their country had neither silk nor silken garments, and that it would be wise, therefore, to bring one or two seeds from mulberry-trees and some silkworms, as this would then enable her to have silken garments. When the princess heard this she secured the seeds and the silkworms, hiding them in her headgear. When she reached Khotan she was escorted to the palace with great splendour. She then produced her treasures, and the seeds were planted in the spring; and when the time for the caterpillars to appear had come the mulberry leaves were collected and given to the insects. The Queen then gave an order to the effect that it was illegal to kill a silkworm, and that once the butterfly appeared, silk could still be obtained from the cocoon. Whoever disobeyed this order would have no hope of happiness in after-life."

The ruins of old Khotan are buried under large loess deposits to the west of modern Khotan. Sir Aurel Stein has made a thorough investigation of these parts. A tributary of the Yurungqash river, by the small oasis of Yotkan, has made its way into the sands and clays, and the continual washing away of the cliffs at the side by the summer floods often changes the bed of the river. In the lowermost strata the natives here find small articles in terra-cotta, which even now we are not able to explain. The small figures consist of images of animals, pottery debris, strange figurines, and also coins and gems. In spite of excavations no one has ever been able to find traces of houses. Tradition has it that this old town was once overwhelmed by a gigantic

flood. Sir Aurel Stein, however, is not of that opinion, but thinks that the loess deposits, which are six yards thick, resulted from the irrigation of the fields. He calls special attention to the fact that the deposits lying on the culture stratas are not stratified, and points out that such a stratification would have taken place if the layers had been deposited during a flood. A distinct stratification, however, will result only if the sand and the mud are being deposited in stagnant water, as in lakes. Sir Aurel Stein took some specimens from these deposits, and these were examined by Professor Loczy. The result of these investigations proved that a layer of fluviatile (riverine) sand, nine inches thick, is lying above the culture strata, which is five to fourteen feet thick. The uppermost layers consist of the yellow loess deposits. At any rate, the layer of sand was deposited under different general conditions compared with the uppermost non-stratified loess deposits, and it is therefore not improbable that during a high-water period the old culture strata were flooded.

My investigations of the pottery-strewn ground near the Rawak *stupa* led me to the conclusion that it had been subject to a flood. Fragments were to be found all round the ruins of Buddhist towers. These pottery debris are embedded in a non-stratified loess deposit, which is covered with a layer of clay nearly two feet deep, on top of which are now sand-dunes. The clay is separated from the culture strata by a layer of sand. Even though it may not be possible to be certain whether the layer of sand be fluvial or deposited by the wind, one can safely say that the fine

layer of clay can have been deposited only by still water. This water must have come from the overflowing of the Yurungqash river to the Rawak *stupa*. We also found traces of flooding in the dead poplar woods to the north-west of Guma. The trunks of these trees are often embedded in layers of clay containing innumerable shells of fresh-water snails. In one place I found a layer of this clay peeling off, and underneath was sand, with the original foliage. I wondered whether it were possible that these floods could in any way be connected with the inundations which at one time took place in old Khotan. I shall always regret that I never paid a visit to the ancient site of Yotkan. In any case it would be necessary to make further geological investigations of the position of this old civilised ground, for nothing up to date seems to justify the opinion that its present condition was not due to a flood, although it is quite possible that the old town was destroyed by war and afterwards flooded.

I succeeded in obtaining in Khotan some fine specimens of Yotkan terra-cottas. On comparing these with the collections of other archæologists I discovered that a large number are the same. Amongst my collection are, for instance, many figures which are contained also in Sir Aurel Stein's and Grenard's collections, specimens of which are also to be found in the Folklore Museum in Berlin. It would seem, therefore, that these figures were produced *en masse*, though it has not been definitely established for what purpose they were used. Sir Aurel Stein succeeded in identifying all the old Buddhist places mentioned by Hsuantsang in his

reports. All that we discovered of the old town itself were the above-mentioned small specimens from Yoktan. What a wonderful place the old Khotan must have been is shown by old reports. There can be no doubt that, under the old loess deposits, there are still hidden away more remains of civilisation, and it is to be hoped that it will be possible to undertake systematic research.

CHAPTER THIRTEEN

The Heart of the Desert

MEANTIME the first signs of spring were with us. There were glimpses of green in the garden, and the ice, which on our arrival had been everywhere, had now melted. The next few months promised interesting work, and I looked forward to the future. On 2nd March I set off, with two camels and four men, for Imam Azim Mazar, while Bosshard, who was recovering from an attack of malaria, stayed behind with Habiba and Sabur. We intended to join forces again when the weather was fine. The roads were unpleasant, for the ground had thawed, and was now soft and muddy. The servants had to lead the camels very carefully, for it was slippery and they were often on the point of falling. We reached the sacred grave by way of Yurungqash, Kutcha and Jiya. We could see the top of the tomb a long way off, with the flags and pennants; we met several pilgrims, and learned that during Mohammedan festivals many thousands visit the grave of the Holy One, which is situated on the extreme edge of the desert, and is practically buried in sand.

Whilst we were in Khotan our friend Moldovock had presented us with several heads of Buddha, and told us that they had been found in Ak Sipil, or White Wall. This place was near Imam Azim Mazar, and I

was anxious to visit these ruins, although I had little hope of finding anything of interest. Sir Aurel Stein has been there, and is of the opinion that they are the ruins of an old fort. We found no remains of wall-paintings there. In all probability these large Buddha heads must have come from elsewhere, but I was anxious all the same to visit the famous Ak Sipil. I took one camel and two men with me, and set off in a south-easterly direction.

It was difficult to find these ruins among the sand-dunes, on which were growing tall reeds. It was not till nine o'clock that we discovered them, and were able to recognise the ramparts of the fort-wall, made of bricks dried in the sun. I took some photographs, and I tried one of the large *tattis*, which lie to the south of Ak Sipil. It was out of the question to find anything by digging, as, with the exception of the wall of the castle, the rest of the fort had been razed to the ground. Towards noon the *shāmāl*, the notorious north wind, began to blow, and did not stop till the evening. It blew clouds of dust and sand in our faces on our way back to camp.

I wanted to get to the Rawak *stupa* by the next day after noon, in order to meet Bosshard. To make quite certain of not missing the ruin I took the precaution of taking two men with me who had been there before, and who said that they could easily find the place again. I had Sir Aurel Stein's maps at my disposal, and had worked out that if we went in a direct northerly course we ought to strike the *stupa*. We left our camping ground at Imam Azim Mazar very early in the morning,

and set off into the desert. We made rapid progress over the long stretches of clay which lay between the sand-dunes, and were like the *bajirs* of the Cherchen desert discovered by Sven Hedin. I reckoned that we ought to get there about three o'clock. The weather was not unfavourable, so we were able to see a good distance ahead, and the possibility of missing the ruined towers was therefore small. The sand-dunes were particularly high, but they were not absolutely barren, for now and then tamarisk bushes and reeds grew in the sand. I could see no signs of the ruin although I very carefully searched the desert with my field-glasses. Again and again we climbed to the top of a dune and scanned the desert, but all in vain. Both our so-called guides were heartily cursed by my servants. Four o'clock came, then five o'clock, and finally six o'clock; the sky had clouded over and a strong wind was blowing, driving the blue-grey clouds across the sky. Drops of rain began to fall, and soon a heavy hailstorm set in, so that for half-an-hour the dunes were covered with a white coat. An hour later it was dark, and there was nothing to be done but pitch our camp. I climbed the highest dune near by in a last hope of seeing the ruins. It was obvious that we were not near the *stupa*, for Bosshard with Sabur and Habiba were waiting there; they would certainly have lit a fire, the flames of which would have been visible for miles. I could see no sign of a fire anywhere. The desert was still, and it seemed as though we were the only living beings in this dead country. The hail beat down late that night hard on to my tent, and a bitterly

cold wind made our airy home shake and quiver. I missed Habiba's good cooking very much, as Rosejan was quite useless at preparing a meal. I lay awake a long time in my tent, wondering where Bosshard was at that moment. The whole caravan, including all the tents and most of the provisions, were with me, so it was possible that Bosshard might have to spend the night in the open, which would have been most unpleasant.

The next morning we took farewell of this dire camping ground. We could only hope to find the ruin if we could manage to reach the small and little-used highway, which runs from Yurungqash to Tawek Kel, and I decided therefore to go in an easterly direction. A fresh wind was blowing in the early morning, and the sand-dunes seemed to be smoking. The wind grew stronger and the driving of the sand increased every minute, making our eyes ache and water, till suddenly a real storm began. The air was filled with thick particles of sand and dust in less than a minute. The wind howled and whistled, and the ground was whipped into a whirling mass. I was about thirty yards ahead, leading the caravan, while twenty yards in front of me was the other leader, whose figure I could just see as if we were in a thick fog. Every half-minute I turned to see whether the caravan was following, but once when I turned there was no sign of it. I stood still for a few minutes and listened carefully, on the chance of hearing the tinkling of the camel-bells, but I could hear nothing save the howling of the storm. We retraced our footsteps quickly before they became

obliterated. Rosejan was with me, and we raced back, but in ten yards they were gone. We then stood still, completely puzzled, not knowing what to do in this howling gale, which might last for hours. Fortunately I had not lost our direction, and I walked back by the compass in the direction from which I had come. Suddenly I saw ahead, as though through a mist, one of the servants standing on the summit of a dune. We shouted as loud as we could, but our voices were drowned by the wind. It was Kudret Akhon, and he led us back to the caravan, which had taken shelter behind a sand-dune.

When I had collected everyone together again we pushed on. I gave strict instructions that all were to stay together and not wander away. I would have pitched camp at once, as this is always the safest course in a sandstorm, had it not been for the anxiety which I felt about Bosshard. Towards midday the storm seemed to abate slightly. I tried to eat something, sheltered from the wind, behind a tamarisk-tree, but both my bread and my meat were immediately covered with sand, and became uneatable. Suddenly two riders appeared out of the blue. They were the servant of the Amban of Lop, who had accompanied Bosshard to the Rawak *stupa*, and a woodcutter. I learned that Bosshard had been to the Rawak *stupa* the day before, with the servant of the Amban, and that he had been compelled to leave Habiba behind in Khotan, because of his bad health, in the care of Sabur. As Bosshard had not found us at the Rawak *stupa* he had had to spend the night in the open. I learned, further, that Bosshard



1. THE MYSTERY PLAY AT HEMIS : A CROWD OF LADAKHI MEN AND WOMEN WATCHING THE PLAY FROM THE BALCONY OF THE INNER COURTYARD IN HEMIS MONASTERY. 2. THE MAIN BAZAAR STREET OF KHOTAN: THE MAIN STREET WITH MUD-BUILT HOUSES ON EITHER SIDE IS COVERED WITH AN AWNING OF STRAW MATS.

would remain there till midday, but in case we did not arrive he would ride back to Khotan. I wrote a few lines at once, and gave them to the Amban's servant, with orders to give the letter to Bosshard, and to ride at the gallop, and to wait there for us if he missed Bosshard. The woodcutter guided us to the ruins, as he was quite at home in the desert, and knew his way about easily. Bosshard had left a letter behind in a small niche of the *stupa*, in which he told me that he was going back to Khotan and that he hoped to meet me in a few days' time in Islamabad.

The following day was full of events. In the morning I began to excavate the ruins, with the assistance of the few men with me. As has often been reported, this castle-like ruin is a large Buddhist *stupa*, which probably dates back to between A.D. 300 and 500. In 1901 Sir Aurel Stein made extensive excavations by the south-west wall of the *stupa* and the neighbouring galleries. He was fortunate in finding a large number of life-size Buddhist statues, showing typical signs of the old Gandhara art of North-West India. However, in the course of the last thirty years, the sand, which then covered the west side of the *stupa*, has shifted so that a part of the south-west wall now appears above the sand. Broken pieces of statues were lying about on the ground.

I first set the men on to digging by the south-west wall and on the west side. In the course of a few hours a ditch, about six feet deep, had been dug, and there were signs of several large statues. Unfortunately only the bases were intact. The next ones which were

revealed were also broken, having lost their heads and arms. At midday the Amban's servant appeared with his two other companions on horseback, he having been back to Lop the previous day. He told me that Bosshard had met with still more bad luck. As he had not found us at the Rawak *stupa* he had gone on foot to Ak Sipil and to the *tatti* of Arka Kuduk, where he had been caught in a sandstorm, and had eventually reached Hanguya. He had here hired a horse and ridden back to Khotan.

There was every chance of our excavations proving successful, and I therefore sent one of the men back to Bosshard with a letter telling him to come as soon as possible. Suddenly fifteen men appeared from the oasis of Tawek Kel and said that they wished to help me. We therefore continued our digging operations, at two o'clock. The foreman of the band was Ekram Hadji, a widely travelled person, who had been to India, Persia and Constantinople. He gave me some interesting manuscripts, which were reputed to have come from the old Tibetan fort of the Mazar Tagh, and consisted of little wooden sticks and tablets, on which were written Tibetan characters, a square wooden block, inscribed with Brahmin characters, and a large paper document in Tibetan characters. I was able to make out that the last one related to a disease and the medicine necessary to cure it.

We now had a number of men working, and I therefore excavated half the outside of the south-west wall. We found a whole row of statues, and the nearer we got to the centre the finer they were. The vermilion paint-

ings here were well preserved. According to Sir Aurel Stein none of the paintings on the south-east wall is left intact. Small figures were wedged in between the statues. In the middle of the wall parts seem to have suffered from fire, and ashes and cinders were mixed up with the sand. A statue of a *dhamapada*, or sentry, larger than life-size, had stood here, and we also found pretty little carved Buddha figures. In one place the back of the wall against which these statues had rested was covered with paintings. There was a picture of a woman in a red-and-white rather scanty blouse and a long black-and-white-striped skirt. The long black tresses and large round earrings were particularly noteworthy, though, unfortunately, there was little to be seen of the face. The following day our efforts again produced small reliefs, as well as two life-size heads. The finest specimen we obtained was a large carved plaque, with rosettes and small Buddhas, which surrounded the head of a statue in the form of a halo. Working and taking photographs was a tiring job, as the fine grains of sand crept into everything. After taking two photographs I always had to clean the camera, even when there was no wind. The packing of the fragile articles, such as the clay statuettes and the reliefs, was not easy work, for each individual piece had to be wrapped in cotton-wool and Khotan paper, tied up and carefully placed in chests lined with paper and reeds.

I had no answer to my letter to Bosshard, so I left next morning, 8th March, and went in the direction of Tawek Kel. We had first to cross a high, sandy ridge

before coming to the smaller dunes covered with tamarisks and reeds. While we were taking our midday rest a messenger arrived from Suja with a letter from Bosshard, from which I learned that he intended to come that day to the *stupa* with Sabur and Habiba. This meant returning at top speed so that we should not again miss each other, but we waited all day at the ruins in vain. That night I lit a large fire, which was still burning at nine o'clock, on the top of one of the dunes near the *stupa*. There was not a sound in the desert near us, and it was not till ten o'clock on the following morning that Bosshard arrived with the two servants. They had walked about till seven o'clock on the previous evening, when the guide, whom Bosshard had brought with him, admitted candidly that he had no idea where he was. They therefore had had to spend the night in the open.

We now began operations on the inside of the southwest wall of the gallery. It seemed, however, that the statues here had been damaged by the atmosphere. We therefore that afternoon dug round the outside wall and succeeded in finding one or two fine plaques and a well-preserved life-size head of a Buddha. We decided to go to the Dandan Oilik desert and to the Mazar Tagh, as our workmen hailed from these parts and we could return here later. We were lucky in finding two springs, so that we had a good supply of water and could wash at least once a day.

A rather dull journey across undulating tamarisk-covered steppes brought us to Tawek Kel. We sent Sabur and a servant of the Amban ahead on horseback

so that they could begin the task of buying provisions, and we hoped by this means to avoid having to stay there any length of time. We had to take supplies for three weeks as we were not likely to meet anybody during this period. We therefore bought two sheep, fifteen chickens, bread, *kunjura* (camel food), sugar and flour. After lunching with the Beg we pushed on to At Bashi, where Ekrem Hadji showed us a suitable camping ground. We spent a day here, but had little rest. Not only our camels required medical attention, but there was a continuous flow of sick people from every direction. Two men brought their crippled father on a stretcher in the hope that we might be able to do something for him. Blind people arrived, and lepers, who had heard of the wonderful cures which we had performed in Khotan. It made us very sad to think that we could do nothing for these people, for the fate of sick people in the East is appalling. Not a soul bothers about them and most of them earn their living by begging.

The rearranging of the loads and the engaging of a few men who would be useful for our excavation work took up our time. A whole row of Turkis offered their services, all claiming that they had been to Dandan Oilik. We eventually chose eight, of which two were old men with white beards who must have been over seventy. One told us that thirty years ago he had been with Sir Aurel Stein to Dandan Oilik, and that he knew the place quite well and was anxious to act as our guide. The next morning they all forgathered. Their individual equipment was primitive, each possessing only

a gourd bottle containing water, a small bag of bread and flour, and a wooden key. The water-pipe and tobacco were common property. We travelled for hours at a stretch through the cultivated land round the large oasis of At Bashi. The weather had improved considerably; it was warm and the sky was a clear blue. While we were crossing an irrigation canal the same camel again fell into the water, with a heavy load. All the men ran to the rescue, and were just in time to save my suitcase before the camel succeeded in throwing it off. The rest of the load, including the kitchen chest, was submerged, and, in addition to this, Habiba's bedding was soaked. When the camel was safely on dry land again Habiba opened the kitchen chest to see what damage had been done. The contents were all wet and the beautiful white bread which he had baked had become a pulpy mess. His only comment was: "I was baking up till three o'clock this morning and now it is all spoilt; I shall have to start all over again," and his face clouded with anger. There was little water in the bed of the Khotan river, so that we walked most of the time on dry ground covered with salt crystals, but there were a few blue-grey pools, which Kurrum hailed with great joy. During the course of our travels he had learned to appreciate water; whether in a pool or a ditch, dirty or clean, he always went in for a bathe. He frequently emerged looking like a pig from these muddy ditches, and with all traces of his white-and-gold coat vanished. The water with which we had filled our tanks at At Bashi was not good. Coffee and tea had a distinctly bitter taste. We therefore refilled them at

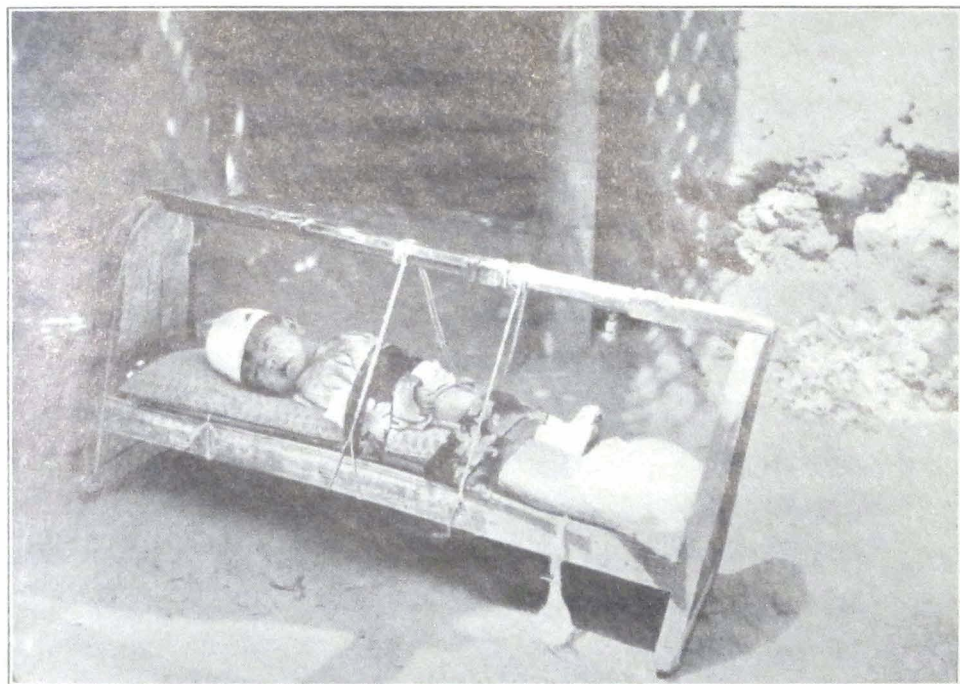
Kosh Sattma, as the water from the river here was better.

It was on 14th March that our memorable journey through the Dandan Oilik desert began. Our previous leader, Sabur Akhon, and his son went on ahead with old Supurka, but, in spite of having native guides, I took the precaution of mapping out our route. After leaving Kosh Sattma we came to sand-dunes of a height of nearly thirty feet. Dead poplar-trees, tamarisks and camel-thorn broke the barrenness of the country. We used to enjoy setting fire to a large clump of camel-thorn and watching it blaze. The temperature in the middle of the day was now 65° . The camels had already shed their winter coats and were looking very neglected. We had now made our wooden saddles on our riding-camels comfortable, for the part we actually sat on had been so padded with blankets and furs that it would have been impossible to have improved them. At noon that day the sun was very pleasantly warm, but about two o'clock a wind rose, which increased violently, so that at four o'clock a sandstorm was raging. We pitched our camp at the foot of a large poplar-tree which was half dead. The tents had to be weighted down with sand, as in these storms the lining very easily becomes loose. The men from Tawek Kel dug down and came across some rather brackish water about four feet down.

It was 17th March and we had already been travelling for three days in the desert without a sign of Dandan Oilik. Everywhere was sand. It was still distinctly cold at night and the temperature at seven in the

morning was 26° , though it rose to 74° at midday, and in the sun it occasionally reached 113° . We always wrapped up well in our fur coats when we left in the morning. At ten o'clock we shed our coats, half-an-hour later our woollen scarves came off, and at noon we took off our shoes and stockings and went barefooted for the rest of the day, which was extremely refreshing. At times, however, the sand was so hot that we had to put on our shoes.

The guiding of the caravan had now been taken over by the sixty-year-old gentleman called Supurka Akhon. This old man always walked some distance ahead of the caravan and would insist on climbing the highest sand-dunes. We had so far been lucky in finding water, even though it necessitated digging down to a depth of six feet or so. The temperature during the night of 17th-18th March fell considerably, but the next day was fine and clear. By ten o'clock it was 88° in the sun, which gives a rough idea of what it must be like in these parts in July and August. We pitched our camp at the foot of some tamarisk-trees. According to our calculations we ought to be in the vicinity of the ruins, and we therefore sent one or two men to have a general look round. They, however, returned next day without having seen any signs of the place. I was more than ever convinced that we had gone too far to the east. I was almost certain that Dandan Oilik lay in the heart of a wood of dead poplars which we had passed two days before, where we had found fragments of pottery debris. We decided, therefore, to turn back again and go in a westerly direction to the wood. Bosshard went



A TURKI BABY

THIS BABY IS LYING IN A ROUGHLY CONSTRUCTED PRIMITIVE WOODEN CRADLE.

OUR CAMP IN THE DESERT

THE TAKLAMAKAN DESERT HAS LITTLE VEGETATION EXCEPT TAMARISKS AND IN THE BACKGROUND ARE LARGE DEAD TAMARISK CONES.

on ahead with two Turkis, but they went very fast, and I caught them up only about twelve o'clock. All three lay sound asleep on the slope of a sand-dune. The heat now between twelve and three was unbearable. I had burned my feet going barefoot the day before, but it was impossible to wear boots or shoes. There was usually a slight breeze, but when this died down the heat was appalling.

There was not a breath of wind on 20th March ; the air was heavy and muggy, resembling our weather just before a thunderstorm. The camels lurched languidly through the sand. We met two of our people, whom we had sent out early in the morning to reconnoitre, and we now decided to be guided by them. Shortly after two o'clock we saw a sandstorm rising behind us, and the yellow clouds were on us in a moment. We huddled together so that no one should be lost. In a few minutes we were in the thick of a fierce storm, and so we were forced to pitch our camp. It was all over in half-an-hour, and it looked as though the afternoon would be fine, when suddenly a new hurricane started to blow. The sky became dark and threatening, and this sandstorm was soon raging over the whole desert. We had to hang on to the tents, because the pegs did not grip very well in the soft sand. Then, without any warning, a heavy shower of rain poured down. At six o'clock all was over and the air was pleasantly cool, with a smell of damp ground.

The next day was bitterly cold and windy, with sand blowing all over the place. The footmarks of Bosshard and his two servants, who had started off first, had

been entirely obliterated. We reached a grove of poplars about nine o'clock, and there we were greeted by one of the servants with the news that he had found Dandan Oilik. I told Bosshard, and then followed the Turki, who led us to a few small, half-buried houses. I knew at once that there could be no question of this being the place referred to by Sir Aurel Stein. We pitched our camp all the same, and told the men to dig for water and also to look around for any other ruins. I myself went with Kadre Akhon to the south, through the wood, but without finding any sign of the old settlement. In the afternoon the people from Tawek Kel came back and reported that the ruins of Dandan Oilik were only an hour's journey from our camp. They brought with them two other Turkis whom they had found at the ruins, and who had been sent by the Amban to look for us.

We had just settled down for the night when the storm began again, and blew all through the night. The next morning everything in my tent was covered with a thick layer of sand. Immediately after breakfast Bosshard and I started off with old Supurka Akhon for the ruins. The wind was very strong and sand was everywhere. Just before eight o'clock we caught our first glimpse of the ruined houses of Dandan Oilik, which are built on raised ground, like terraces. The storm was still raging, and it was fortunate that the caravan, in the meantime, had arrived. We now had a look at these ruins as far as that was possible in the storm. Two hours later we returned to our tents, but they seemed most comfortless. Everything was covered

with sand about a quarter of an inch thick, and the weather did not clear till the afternoon. This old Buddhist settlement, dating back to A.D. 800, had not altered since the last visit of Sir Aurel Stein. There did not seem to have been any movement in the sand and no new ruins had come to light, so naturally there was little chance of our finding anything fresh. In spite of this we searched, and found some old wooden combs, boots, coins, and one or two small paintings. Kadre Akhon unearthed a manuscript in tatters with letters in Uigurian script, and a wooden lock. I had excavated in one of the large houses two living-rooms which had been buried in the sand for a depth of six feet, but, with the exception of a Chinese coin of the Kayuen period, I found nothing at all. The fireplace was of a peculiar shape, formed in the shape of a bell. The shovelling away of the sand was always hard work, because it would slide back again. In several places we found plaited sandals and Chinese manuscripts.

We were again greeted by a severe sandstorm on the morning of 24th March. The wind was from the north, and by eleven o'clock it was so bad that I had to take cover in my tent, but even there everything was covered with sand. The air itself was full of fine particles of dust, which forced their way through our clothes. Our eyes, ears and nose were full of sand, and sand filled one's mouth when one opened it to speak. To this day I am at a loss to know how Habiba managed to cook our meals, because he had to have a pot uncovered only for a second for it to be filled with dust. From time to time I heard curses about the state

of the tents. We had not been exactly spoiled in the course of this expedition, but this sand and dust, from which there was no escape, was too much of a good thing. By noon I had cleaned out my tent again and tidied it. Bosshard had gone at ten o'clock with Kadre Akhon to some small ruins about five minutes away from our camp in order to pack up the wall-paintings, which had been collected the previous day. When I stepped out of my tent I could just see Habiba's tent, five yards away, as though through a thick mist. I also saw Kadre Akhon, who said that Bosshard had left the ruins with him but had not yet returned. It was clear that he must have lost his way in the storm, which was not surprising, as there was a curious twilight effect, and all one could hear was the roaring of the wind. I woke the men, who were asleep in their tents, and sent them out in different directions to look for Bosshard. Kadre seized hold of the large camel-bell and rang it violently. At half-past one there was still no sign of him. The wind howled, and threatened to blow down the tents and bury them in the sand. The camels were very restive, and Kurrum crept to the shelter of my tent, with his tail between his legs. We all looked sights, for our faces were grimed with dust and our eyes were half shut and streaming. I set off with Habiba and a compass in the direction of some other ruins, on the chance that Bosshard might have gone there, but I could find no trace of him. It was two o'clock by the time we got back to the camp. Then Bosshard suddenly appeared from an absolutely unexpected direction. He had left

the small ruin at a quarter to twelve, with the intention of coming straight back to camp, but in the short space of a minute the storm became so severe that he had been unable to recognise any landmark, for the wind was blowing direct in his face, with the result that he went too far north. He eventually reached the ruins to the north, which he had visited the previous day, and had with great difficulty succeeded in finding his way back from there. The storm died down that evening, but it was very cold and unpleasant, and I was glad when the time came to creep into my sleeping-bag.

When we left Dandan Oilik next day the storm was over but the air was still thick with sand. We buried in the earth, near the ruins of a small temple, some copies of the Swiss newspaper, the *Zuricher Zeitung*, and an empty tin, in which we put our visiting-cards, and wrote on the outside: "To the poor fellow who trusts that he will find something here, for his lonely hours, with kindest regards." We soon lost sight of the place, and I wondered who would be the next European to visit it.

Our journey throughout that day took us due west, over high sand-dunes which were separated at regular intervals by deep hollows. The surface of these hollows consisted of layers of clay, which were marked by winding furrows caused by fresh water. On the slopes of the dunes there also appeared similar layers of clay, so that everywhere was this contrast between the sand and clay. A study of these series of layers, which I saw also in other parts of the desert, made

me come to the conclusion that here, at the southern edge of the Taklamakan, were varying periods during which the rivers were dry, and again when they overflowed and flooded the desert. One problem, the solution of which I wanted to find, was whether the rivers which rise in the Kunlun range and flow into the desert carried more water in earlier times than at the present time. My observations show that this must have been the case, for in the first half of A.D. 1000 the rivers flowed much farther north than they do now. I am entirely agreed on this point with Sir Aurel Stein. To-day it would be impossible to bring water to Dandan Oilik, whereas in earlier times water undoubtedly came by the Tchira river. The reduction of the volume of water in the rivers must be the cause of the death of all the poplar-trees. When the rivers dry up, certain salt deposits remain, which infect the ground and in time kill all vegetation. It follows that a similar state of affairs can of course take place if a river changes its course and the water in the old bed dries up. The large areas of dead poplar woods, however, which extend far and wide, can, under no circumstances, be explained by this theory. Sir Aurel Stein has established beyond dispute that the volume of water in the Niya river has decreased, and that the dead woods in the lower course of the river, as well as the downfall of the settlement, cannot be connected with the changing of the river's course, as the River Niya has only one bed. It is clear that a period of flooding must have taken place after the poplars had been destroyed, for numbers of poplar-trees are buried

in clay. In some places I also found under the clay the dried leaves and bark of the old trees. It is possible to fix an exact date for these flood periods in the region of the old Rawak *stupa*. The traces of civilisation of the first half of A.D. 1000 are here buried beneath the layer of clay. Stories of the downfall of the old ruined towers of Pimo, which Hsuantsang writes about, also have references to such a catastrophe. One reads as follows: "On the second day a terrific storm broke out, which washed the grass from the ground, and there was a cloudburst, which rooted everything up, and flooded streets and paths. The inhabitants offered up prayers, but the Holy One, who had received information of this disaster, had built a kind of cave outside the town. On the seventh day, after midnight, a rain of sand fell and buried the whole town." We also find references to a similar occurrence in local traditions. On the occasion of a battle between the faithful and the unfaithful we read: "A thunderstorm arose and came down from the mountains. The rain poured down in floods from the heavens, and the cloudbursts turned the faces of the Mussulmans towards Mecca, and the faces of the infidels to the ground, striking off their heads." There are also other references in Tibetan reports, and an extract from the *Annals of Liyul (Khotan)* is as follows: "Fifteen hundred years after the death of the Buddha the King of Liyul was still an infidel, and his people had lost their faith in the Prophet. Liyul, Shulik and Anse were therefore subjected to various catastrophes. Each year was worse than the previous one; wars, diseases, inopportune

winds and rainfalls, severe frosts, plagues of insects, mice and bugs destroyed the crops.”

On the return journey to the Khotan river our route lay south of our first one, and the vegetation was more in evidence.

On 26th March we passed out of the region of high sand-dunes and were now in an undulating country, where they reached a height of only fifteen to twenty feet. Vegetation increased, and we now found the first live poplar-trees. There were tracks of hares, and we caught two finely marked lizards and some beetles. The weather was very unfriendly but the air was clear. Our camels were painfully thin and in want of good food, one or two showing signs of debility, which was not surprising when one considers that in the course of the last fourteen days none of them had had anything more than three buckets of water.

CHAPTER FOURTEEN

The Red Mazar Tagh

WE reached the zone of live poplar woods on 27th March. At eleven o'clock we suddenly came upon our old tracks, which, in spite of sandstorms, were still visible in places. We allowed our worthy ships of the desert to graze on the first field in which camel-thorn was growing. They took their meal with the same quietness and dignity which they always displayed, though their food during the last few weeks had been very scanty indeed, as we had seldom come across grass-reeds and camel-thorn, which meant that we had had to feed the animals on *kunjura* and meal.

At midday we reached the site of our first camping ground and found that a fair quantity of water had collected in the hole which we had dug. We journeyed on till four o'clock, passing through areas of old dead poplar woods, until eventually we pitched our camp in a hollow. We struck water after digging about three feet down, which was slightly salty—a sign that we were in the vicinity of the Khotan river. We wanted to separate on the following day. I myself intended to go to the Mazar Tagh in order to make some geological observations there and also to visit the old Tibetan fort, which is supposed to date from 800 B.C., while Bosshard was to continue

excavations at the Rawak *stupa*. He also wished to go to fetch the mail, which had in the meantime arrived.

We left on 28th March, the weather being dull and cold. Bosshard went off in a south-westerly direction to Tawek Kel, while I took a more westerly course, in the direction of Kosh Sattma. I did not pitch my camp this time on the dunes but on the terrace, where stumpy bushes were growing. In the afternoon the camels were watered at a small stream which flowed below our terrace. It was really a joy to see the animals drinking; as their bellies swelled it became necessary to loosen the girths. I need hardly mention that Kurrum spent the whole time playing about in the water. I decided to remain here the following day in order to give the camels a rest and to await the result of our request for provisions from Tawek Kel. It looked as though it was going to be a fine day, but at eleven o'clock the sky clouded over and the air became muggy and oppressive. It was uncannily still and not a sign of a breath of wind. The Beg from Lop and the two old servants of the Amban arrived at midday to inquire after my health, and brought with them the provisions we had ordered.

The sky was cloudy and the weather cold when I stepped out of my tent at six o'clock on 30th March. We were fortunate in being able to start at seven o'clock. The crossing of the wide bed of the Khotan river presented no difficulties, as there was little water flowing at the time. We had just passed through a stretch of reeds, tamarisks and poplars on the opposite bank when

a messenger arrived from Tawek Kel. He rode up to old Supurka Akhon, whom I had engaged for the trip, and told him that his wife had just died and that he would have to return at once to his village. Our old white-bearded friend, greatly distressed, came to ask for permission to go, which, naturally, I gave him. I learned later that there was not a word of truth in this story, and that it was merely invented to prevent me from going to the Mazar Tagh. I therefore pushed on ahead alone. Just as I was having my lunch in the shade of a tamarisk bush at midday the servant of the Amban of Khotan arrived on horseback and presented the Amban's card and his best wishes. He was very anxious indeed that I should not proceed farther on my expedition to the Mazar Tagh, for it was very hot there now; there would be no water or food for the camels, and, also, tigers existed there. In a nutshell, my expedition was very dangerous and it was now very pleasant in Khotan. Spring had come, flowers were blossoming and the trees were all budding. I did not allow myself to be led away by such inducements, and answered the servant as follows: "Please convey my best wishes to your master and tell him that I am very well indeed, and that I have travelled before in the desert and know all the dangers that exist."

We at last had a pleasant sunny spring day on 31st March. Early that morning two more horsemen arrived from Islamabad, bringing more provisions, in the shape of eggs and chickens. Our route lay along the dried-up river-bed and on the edge of sand-dunes, out of which grew tamarisks and woods of poplar-trees. The high

white sand ridges which appear in the west formed a curious contrast with the dry river-bed. Here and there one could see small blue pools of water. It was beautifully warm in the afternoon, with a glorious blue sky and not a breath of wind. Larks trilled overhead and swarms of small beetles similar to our cockchafers were crawling over the hot sand. Our camp was picturesquely situated in the midst of a high jungle on the edge of the river. It was practically impossible to get along by the river's edge, as at every step we were caught in briars, and the thick reeds, about nine feet high, allowed one to move forward hardly at all.

On 1st April we went through the thick jungle which borders the river. In places there must have been wood fires, as there were burnt stems of poplar-trees jutting up out of the yellow rushes. Part of the time we had to make our way for hours at a stretch along the river-bed, in which sand whirlwinds occurred. The sky to the north was darkening, as though a thunderstorm was brooding. The air was quiet and again there was an uneasy silence hanging over the place. We halted for our midday rest in a large field of reeds and allowed the camels to graze. During the whole day the only people we met were two men and two women, who were going from Aksu to Khotan with their three donkeys. The sun was already sinking as we pitched our camp, for though we had passed a very suitable camping ground at three o'clock it was too early to halt, and we therefore had had to march for another two hours through sand and jungle until we found water.

We reached the Mazar Tagh on 2nd April. On the way there we sighted some gazelles, but they were so shy that we were quite unable to get near them at all. Kurrum wanted to go after the gazelles, and soon a running chase was in progress through the undergrowth by the banks of the river. Gradually the blue outlines of the Mazar Tagh chain appeared more and more distinct. About noon, when we were nearly worn out by the sun, we reached the extreme south-east cliff, where the red sandstone crags fell sharply away to the river. It was a marvellous sight. The sky was a clear blue, forming a sharp contrast to the wine-red and orange-coloured rocks. Pools, like pale blue silken bands, now and again appeared in the dry river-bed. It was very peaceful, and only now and then did one hear the buzzing of a mosquito.

After lunch I left with Rosejan to explore the mountains. A curious scene greeted me. Everywhere appeared the sandstone walls falling away to the south. We discovered in places sticks tied together in the shape of a pyramid, which may have been relics of Stein's last expedition. I crossed the ridge from north to south, which involved having to negotiate numerous sandstone ridges. When I had reached the highest point I stood dumbfounded with the unforgettable beauty of the scene which greeted me. Before me lay a green ridge, separating the orange-yellow sand zone from the wine-coloured sandstone on which I was standing. To the right were the ruins of the old Tibetan fort and behind lay the broad valley, in which were several large pools. As the sun sank the shadows

deepened from blue to purple. The fort is in a commanding position and stands on a crag jutting over the river like a castle.

On 3rd April I went off in a north-westerly direction into the Mazar Tagh. I walked along the ridge till, about ten o'clock, I noticed a sandstorm rising, so I went down to the caravan, which was moving along the southern slopes of the mountains. The storm was fairly strong by eleven o'clock, and while I was having lunch I could not avoid swallowing quantities of sand and dust. We pushed on till about 4.30 P.M., having taken the precaution of collecting firewood from tamarisk bushes. The path continued over a barren plateau which lies south of the mountain, and which in all probability extends west to south-west. Now and then we saw reeds and isolated tamarisk bushes. The storm had abated by three o'clock, and by half-past four we had pitched our camp at the front of the rocks. I then climbed the high red ridge which rose to the north of our camping ground. The storm had now completely died down and there was a wonderful stillness as I climbed all by myself. The golden ball of the sun was sinking, but its light was dimmed by the air, which was heavy with dust. Many of the slopes were covered with sand, and from my point of vantage I again had a magnificent view. To the north stretched sand-dunes rolling into the distance; even as the sea surges against the cliffs so do the waves of sand beat against the wall of the Mazar Tagh. I was worn out with the long day's march, and as there was also a shortage of candles I turned in early. I was, however,

soon awakened by the howling of the storm, which in the meantime had risen with increased vigour and was threatening to blow down our tent. One of the ropes snapped and sand and dust flew in my face. I lay awake for hours expecting to be buried in my tent.

We started off early next day. I wanted to follow the Mazar Tagh ridge in a westerly direction, after which, about 10 A.M., we were to start on our return journey. A glorious clear dawn greeted us, and this bizarre chain of mountains stood out bathed in the morning sunshine. I could not refrain from trying to keep a permanent record of the scene by making a water-colour sketch. At nine o'clock the wind, however, rose, and the air was soon thick with sand. The farther west we went the higher grew the clusters of peaks. The path still continued over the salty clay plain, and as the scene had not changed by ten we started back. As far as the eye could see, this broad plateau stretched to the west and north-west with these isolated, *jardang*-like ridges.

The Mazar Tagh were higher here, although to the west we sighted still higher peaks. One important discovery which we made was that the Mazar Tagh, in the heart of the desert, stretched from east to west, which is also obvious from a geological point of view. On my return journey I noticed the first signs of life on the tamarisks, the buds of which resemble our heather. We searched for a place to camp near some poplars, the fresh leaves of which were a favourite food for our camels.

On 5th April we started on our return journey to our old camping ground on the eastern foot of the Mazar Tagh. It was a still day, although it had blown fiercely all night. We arrived at eleven o'clock, and I spent the rest of the day sketching and making geological observations in the northern chain of these mountains. Before me again lay this fairy-like picture; only once before in my life had I ever seen anything to compare with it, and that was in the valley of Barfak Tala, in the northern end of the Hindu Kush mountains in Afghanistan.

The next day brought a surprise, for in the afternoon there suddenly appeared out of the blue five horsemen hurrying to us. They were Kerim Beg with four attendants. He told me, after a ceaseless stream of platitudinous greetings, that I must go back at once to Khotan, and that Bosshard and the whole of the caravan had been forced to return, and had not gone to Rawak *stupa*. He also said something about new instructions having been issued by the Tao Tai, but was unable to give me any definite information. I told him that I should abandon my plan of going to Rawak *stupa* only if I received instructions from Bosshard himself. One of the attendants was therefore dispatched to Khotan with a letter, and I hoped to get an answer from Bosshard in Islamabad, which we should reach in three days.

We went as far as Kosh Lash Langar on 7th April, but did not spend the night in the miserable Chinese *serai*. It was now warm in the middle of the day, and provided that there was no wind it was even hot.

Sometimes small white clouds would appear and vanish again quickly. I bagged several birds and Habiba shot a black stork, both near the river. The wild-ducks, which live in the swamps of the Kara Köl in large numbers, were impossible to shoot, as we could never get near enough. We did not succeed either in getting one of the large eagles which had their nests among the dead poplars.

We arrived at the small oasis of Islamabad at three o'clock on the afternoon of 9th April. The tall, slim poplars were showing the first signs of green, and apricot-, peach- and almond-trees were in full bloom. As I entered the village I was met by my old leader, Supurka Akhon, and another man from Tawek Kel who had previously been in our service. Here I received two letters from Bosshard from which it was clear that it would be best to return to Khotan to discuss the matter with the authorities. Whether it was the uncertainty of the position which caused me to sleep badly that night or whether it was the noise I do not know. Dogs were wandering round our camping ground all night, in the hope no doubt of being able to get something from the kitchen-chest, and did not cease until they were chased by Kurrum. Donkeys and camels brayed, hens cackled—not only at daybreak but during the whole night—dogs barked and fought and fell over the tent-ropes, while grasshoppers on the edge of a near-by pond chirped incessantly. I woke up next morning in a bad temper. I was glad at seven o'clock to be able to leave, so that I could spend a few more days in the jungle. It now became

unbearably hot. There was not a breath of air, and the sun beat down unmercifully. Kurrum was not at all happy in his thick coat, and sought out every spot of shade, and bathed in every pool. These marches showed me that the time for exploring in the desert was now at an end. The camels, too, were feeling the strain of the heat, for their old wounds had reopened and were bleeding and discharging. These animals were sorely in need of rest.

When we reached our camping ground, on 11th April, another very hot day fortunately came to an end. From day to day I expected to feel the effects of the heat, and it was now possible to walk only until about 10 A.M., after which I had to ride. The scenery did not change. Our path lay mostly through areas of reeds and jungle on the banks of the river, into which sand-dunes had now and then forced their way. We always welcomed the river so that we could bathe. We did only a short march the next day, owing to the heat, and pitched our camp at two o'clock beside the Lager river, near the Yangi Arik oasis. One of the camels was undoubtedly suffering from internal trouble, and was dreadfully thin and weak, and had collapsed twice that day even though it was carrying only a very light load. Our progress was very slow, and I was glad to think that we should soon be in cooler mountain regions. My men as well as the servants of the Amban were always discontented when I insisted on camping in the desert when there was a village or rest-house close at hand; but I had been spoilt by the stillness of the desert, so much so that I could find no peace when-

ever we pitched our camp near people. We had come across large herds of goats and camels during the last few days, which were being sent down to the valley in order to graze. I arrived at the green oasis of Khotan on 13th April, in glorious weather. I happened to arrive at the house of Khan Sahib just about lunch-time, and ascertained further particulars about our position from Bosshard.

We paid our respects to the Tao Tai and the Amban. These gentlemen both received us most courteously, and behaved as though nothing had happened. It was only as time went on that we learned what was going on behind our backs. We were only able to ascertain then that we were now no longer to be allowed to leave the main caravan routes, and that certain restrictions were to be placed on the photographs which we took. In order to discover the real cause of this, it would have been necessary for one of us to have gone back to Kashgar and to have negotiated personally with the Tao Tai there. Conversations with the Amban and other junior officials were useless. These people were under orders from Kashgar and Urumchi, which meant that a period of ten to twenty days must elapse before an answer could be given. Time is of no importance in Asia, but we had to reckon each day very carefully owing to the diminishing sums of money at our disposal.

The Tao Tai of Khotan I think I can say was friendly towards us, and was really sorry that he could no longer help us as he wished. The Amban, however, surprised us, for not only did he show us no

gratitude for our labours in connection with the successful curing of his daughter, who was suffering from bad blood-poisoning, but also gave us a very poor farewell dinner, in fact the worst which we had whilst we were in Chinese Turkistan.

Our Journey to Yarkand & Kashgar

AT last we again took the road. It was not till 3rd May that we succeeded in hiring a new caravan, consisting of two pack-horses and eight donkeys. I was much pleased with the brown horse which I had got hold of a few days before, and at the last minute I managed to find a horse for Habiba. We got away without mishap about eight o'clock, accompanied to the gate of the town by Khan Sahib, and his eldest and youngest sons, as well as the British Aqsaqal. We thanked him again for all they had done for us, and expressed the hope that we should see them again in a few months' time. We then trotted off in a westerly direction along the high road, which was lined on either side with poplar-trees, crossed the Kara-kash river, which had little water in it, and at two o'clock reached Zawa.

We waited until four o'clock on an open space in front of this old fortified town, the mud-walls and fortifications of which are still visible. A large number of curious spectators collected as usual, and a pretty girl with long plaits, who was washing at the village pond, made eyes at us in an unembarrassed manner, while Bosshard photographed her several times and took a film of her. When the caravan eventually arrived we camped in a small garden, under an apricot-tree.

Kadre Akhon lagged a long way behind that day, for he was suffering from internal pains. All servants before they start off on a long journey have one last good meal, and generally eat so much *pilau* that they are ill for days afterwards. Summer was now with us, and the air was stifling and oppressive, but, fortunately, during the day there was generally a wind, without which life would have been unbearable.

We reached Pialma on 6th May, after a long hot ride of about forty-five miles. At eleven o'clock we came to Kum Robot Mazar, situated among the sand-dunes. The holy grave, distinguishable from a long way off by the poles decorated with yak-tails and streamers, is famous for the number of its sacred pigeons, which live a care-free existence in some wooden houses. No traveller would ever pass these pigeons without throwing them a handful of maize. We came to Ak Langar after travelling across long stretches of dunes, the steep sides of which fall away to the east. We then rode on farther, to the ramshackle *serai* of Tagh Tumen Langar, where we had lunch in a tumble-down shed, sheltered from the blazing sun. Now and then a refreshing breeze would rise, which made things slightly cooler. About one o'clock the wind dropped completely, and the air seemed to be literally quivering above the clay ground. Our horses slunk along, worn out and with lowered heads, though we tried in vain to urge them on faster. At last there appeared on the horizon, to the west, the poplars of the Pialma oasis. It seemed now and then as if there were pools of water between Pialma and us, but these proved to be mirages. The

trees often seemed to rise in the air, and the distance was most deceptive. We were able to recognise to the north the dark tamarisk zone through which we had passed in February on our way to Khotan. We reached Pialma at 3.30 P.M., and found a suitable camping ground at the far end of the village. Habiba prepared tea for us, and a local beauty brought us a bowl of milk. Men, women and naked children were soon squatting round in a circle, asking questions and demanding medicine. The hours passed by and there was still no sign of our caravan at six o'clock, but an hour later, when the sun was sinking behind the poplars in a golden glow, we heard the bell-harness of our donkeys. As soon as the tents had been pitched it was dark; but a full moon rose, its pale orb sailing majestically over the tree-tops.

The first few hours of our march next day led us through a monotonous area of fields of boulders and gravel, totally devoid of vegetation, from which the heat seemed to rise and hit us in the face. Then there came a change, and we found rounded hillocks pushing their way up through the eternal flatness. The scene became more coloured, brick-red sandstone crags appeared. We had a steep descent from the plateau to the Duwa river, although the climb had been gradual. The oasis of Lamus sparkled in the valley like a finely cut emerald. We met few people; now and then we saw a man driving a donkey, but never anyone riding. A storm was coming up: clouds of sand were rising in the valley, which gradually increased in violence until we were again in the centre of a

sandstorm. We pitched our camp on the bank of the river below Duwa. Many a day had passed since we had enjoyed clear, running water from a mountain stream, and we were able to bathe several times.

We ascended the Duwa valley the next day in glorious sunshine, and turned off into a valley leading up to the Kok Boinak Pass. The ascent was easy, but about ten o'clock it was very hot. At noon I turned off in search of shade, but in vain; so we lay down on a stony terrace. I ate my lunch and, while waiting for the caravan, had practically fallen asleep, when suddenly a puff of wind blew off my helmet. I took one or two photographs, and then joined the donkey-caravan which was just climbing a slope covered with sand. One of these little beasts had slipped, and seemed in danger of rolling down, and was with great difficulty righted again. One of the horses also had fallen, which meant that its load had to be removed and carried to the top by the men.

It was unbearably hot, with not a breath of wind and not a scrap of shade. The path seemed endless, over the hot, stony plateau, over sandy ground covered with bushes, and through deep gullies. Golden-brown and blue hillocks lie to the south of the plateau, but to the north one has an uninterrupted view of the Taklamakan desert. We passed two deeply carved gullies, in one of which I found Bosshard and Habiba, who had started off very early that morning. It was 5.30 P.M., and our throats were parched. Habiba was stretched on the ground, while the horses stood motionless, with drooping heads. We again consulted

our maps, but another hour's ride lay in front of us across a large stony plateau before we reached the narrow defile of the Puski river. These foothills of the Kunluns are, in my opinion, the most desolate regions through which we passed during the whole of our expedition. Endless plateaux covered with stones, which give off the heat far more than the desert, combined with sand and rocks, is the only description which one can give of this part of the country. It is true that there was more vegetation here than in the desert, but one had the feeling that the Angel of Death had already cast a spell over it. There will come a day when these mountains will be covered with sand and all vegetation will be destroyed.

The path led along a stony terrace, and then followed a rough descent into the valley of the Puski river, from which we saw a green oasis. We had sent the servants of the Amban on ahead to arrange for a camping ground in a garden and to get some tea and milk. We were relieved to find that we could camp in the first farmhouse we came to, where a large table had been put up in the garden, and we were able to quench our thirst. Towards evening it grew cooler, and as night came on the stars twinkled overhead above the tops of the poplar-trees. There was no sign of our caravan at nine o'clock, and we therefore sent the Amban's servants to meet it, while we lay down on the ground and were soon fast asleep. About 10.30 P.M. I woke, and saw Kudret Akhon emerging from the darkness of the night. He told us that the two pack-horses had arrived with our bedding, but that all the donkeys had collapsed

in the last valley, and would in all probability not arrive till the middle of the night. We therefore put up our camp-beds, by the light of a torch, under the apricot-trees, and were soon fast asleep.

The donkeys arrived next morning at eight o'clock. We set off at once for Sanju, while the caravan halted for a two hours' rest. A long weary ride of two hours brought us to this green oasis, which we had visited seven months before. We waited there in a garden for a long time until the donkeys arrived. These settlements in the Kunlun valleys really warrant the name of oases, as the mountains which separate the valleys from one another are as desolate and as barren as the desert. The foothill regions, which are composed of red tertiary sandstone, are covered with quantities of stone, mud and sand deposits. Some of the hills are so much covered by younger deposits that it is impossible to see the rocks, and one can catch glimpses of them only in gorges. The traveller therefore greets these large oases with joy, for, with their beautiful poplars and apricot-trees, they create a fresh green colour amid the dingy grey and yellow of the mountains.

Our donkeys were very much exhausted, and we had to make arrangements about hiring a fresh supply, with which we could start off next day for Kilian. We were now accompanied by two of the Amban's servants. The sky was clear and a hot day lay ahead of us. We rode for over an hour through the dusty streets of Sanju, with mud-walls on either side, after which we turned south in order to reach the broad valley which leads to Sulaghiz Agzi. When at last I reached the

summit of the first small pass I looked round, but there were no signs of the caravan. The view was uninteresting: rounded hillocks covered with stones and sand on which were growing a few solitary bushes. The sun was perpendicular in the sky at eleven o'clock and it was absolutely stifling. My progress that day was slow, as I had with me Kudret Akhon, who was carrying the large camera. Bosshard and Habiba had already overtaken me earlier in the day. There was little for me to photograph, so I left Kudret Akhon behind and set off at a trot. At one o'clock, while I was riding through a particularly hot valley near Tusgen Ogie, I saw Bosshard and Habiba riding up the other side. I rode after them quickly, and we trotted on together till we came to the small oasis of Karu-su, where we dismounted. Carpets and rugs were speedily spread out for us in a large garden, and tea, milk and bread were brought. We had hoped that the rest of the party would arrive about seven o'clock, but were again mistaken. We had our supper, read, talked, saw new patients—and still had to wait. Time passed—nine, nine-thirty—till eventually, worn out by the long ride, we fell asleep. Bosshard lay down on the table, wrapped in a rug, whilst I slept on the ground on a camel-hair blanket which I had strapped on my horse. It turned quite cold about eleven o'clock and our hosts lent us two sheepskin coats, with which we covered ourselves. It was now pitch-dark, as the moon did not rise till late, and our gipsy-like camp was lit only by the dull light of two oil-lamps. The 'Turkis were lying about in groups on the ground, and I heard them talking and

laughing for a long time. I had been quiet for some time when a curious itching sensation began all over my body, which made sleep impossible. It crossed my mind that the coats were full of live stock, and at the same moment I saw Bosshard on his lofty perch making suspicious movements. We both got up and examined our clothes by the feeble light of the oil-lamp. They were alive! The fleas were running and hopping all over the place, and we therefore returned the coats quickly to their owners. About ten o'clock I heard Kudret Akhon's voice: our caravan had at last arrived. Bosshard opened fire with a string of curses and the servants had to pitch the tents to the accompaniment of these oaths. At two o'clock I crawled into bed, and slept peacefully till Habiba woke me at six o'clock.

A short ride across sandy hillocks brought us to the oasis of Kilian, which lies at the mouth of a large valley. We dismissed our "first-class" donkey-drivers here and sent them back to Sanju, and hired a caravan of horses, which meant that we should progress much faster.

We succeeded in starting off next day at eight o'clock only after great difficulty and trouble. The loading of new animals always takes much longer, the drivers not knowing how to arrange the loads, so that they frequently fall off, as they are not evenly divided. I had planned to go by a new route to K ok Yar, along which no European had yet travelled. We had no sooner notified our men of our decision than they, naturally, told us of the many difficulties which would be in our way—namely, that the road was bad and

steep, and that there were several high passes to be negotiated. In spite of all this, however, we did not allow ourselves to be deterred.

The first event of the day was the crossing of the Kilian river, in which much water was flowing. It needed two men to each horse to lead it through the muddy water, which came up to their girths. Once across the river we had a dull march ahead of us. Hills and valleys were so covered with loess dust that we could hardly see the rocks. About midday we reached the lonely houses of Yuchong Mazar, where we had some food and were given milk. A long ascent across gigantic drifts brought us to a level plateau. We had little vision that day, as a sharp wind was blowing and the air was thick with dust, so that we almost imagined ourselves back in the Taklamakan desert. Several times we saw large clouds of sand form and slowly work their way over the hills. The descent from the level summit of the pass into the valley of the Achik Su was in parts very pretty, as the way led through deep, dried-up gorges. In many places the yellow broom blossomed and numerous blue-black bumblebees buzzed in the air. Small lizards, the same colour as the loess and clay, vanished giddily into their holes as they heard the sound of the horses' feet. The Achik Su consists of a small channel, which it has cut through the loess and the boulders.

When we left next morning the weather was cloudy and uncertain. We had noticed the night before that the water of the Achik Su was salty and that it deserved its name of "bitter river." The tea which Habiba brought

us that morning proved too much of a good thing, for it was quite undrinkable. A fresh wind blew the whole day and at noon it was appreciably cooler. We saw nothing of the surrounding country-side, as everything was covered with loess dust. At ten o'clock we reached the oasis of Ushok Bash, where we took a fancy to some beautifully carved doors and posts. We drank tea with the head villager and then left. We next passed through an extensive area of sand-dunes and eventually reached a part which might in places have been the Taklamakan. The question now was to find the so-called K k Yar Pass, which is rarely used by travellers. One or two villagers showed us the way and the caravan was soon on the ascent. The path zigzagged up in a fairly steep manner, and as it was sandy our progress was slow. When we eventually reached the summit a plateau lay before us. In one or two places we discovered the famous *burze* and a few antelopes, so that the similarity to Tibet was very strong. We met several shepherds with their flocks. The descent was not so steep as the ascent on the eastern side, although in places the horses had to be led. The whole country-side was buried under a layer of sand. It was getting dark when we reached K k Yar, and we dismounted at the house of the Yuz Bashi.

Habiba brought us supper at eight o'clock, and we then waited for the others to come. Eventually, about nine o'clock, Kudret Akhon arrived with a horse and reported that the caravan was a long way behind and was not likely to arrive before midnight. We therefore lay down in the room, in which carpets and blankets

had been provided by the Yuz Bashi, and fell asleep. I was awakened by Habiba at midnight, to be told that our tents were now ready in the garden. The entire baggage had arrived, with the exception of two water-tanks and my small suitcase. The men told me that a horse had shied on his way up the pass and had thrown this suitcase off. It was, of course, dark, and they had been unable to see anything, with the result that it had been overlooked and left behind. I sent the men back to look for it, but they returned next morning and said that the suitcase had completely disappeared. There was no money in it, yet there were several things of value to me, especially part of my diary, my scientific instruments and notes. The suitcase had to be found at all costs. The question was whether I should go back with the Yuz Bashi and Kudret Akhon to the pass and search for the case myself. I sent word by the Yuz Bashi to the villagers that I would give a reward of ten *sar*, or two pounds, to anyone who recovered my suitcase. At 8.30 A.M. I started off for the pass, and, though I searched thoroughly everywhere, I could find no trace of it. Kadre, to whom I had not spoken the night before, now told me that the suitcase which had fallen off had been placed by him on another horse. There were therefore two possibilities: either the suitcase had slipped from the horse in the night during the descent from the pass or during the crossing of the Kök Yar river, and had then been stolen, or it had been stolen from the house of the Yuz Bashi. It was useless to search any more, and all I could do was to tell the Yuz Bashi that I should report the matter to the Amban

of Karghalik and that he would order a thorough search.

A heavy storm was in progress during the afternoon of 14th May, and rain pattered down on the outside of my tent. The next day was pleasantly cool as we rode through the northern part of the oasis of Kök Yar, but the atmosphere was misty, so that we could see only dimly the surrounding hillocks. We left the last poplars behind us and found ourselves in a desolate, steppe-like region. The ground was covered with sand and stones, and only occasionally did we see some stunted bushes. In places sand-clouds rose in eddies, only to descend and be blown across the plain. We trotted for stretches at a time in order to make rapid progress, and that afternoon we halted in the small oasis of Beshterek Langar, where we were again overtaken by a sandstorm. Before the storm began the air was filled with the dust of loess and thunder rumbled in muffled tones round the mountains of Kök Yar. Suddenly the storm broke and shook the tent-ropes. The porters huddled on the ground with their backs to the wind. The temperature fell noticeably, and in the evening it was cold and unpleasant. The storm continued during the night.

The ride to Karghalik was of little interest, for we again traversed areas of stones and sand. As the green poplars of the oasis drew nearer the merchants and people who were on their way to the bazaar grew more numerous. On our arrival we visited the British Aqsaqal, in whose garden we pitched our tents. We called on the Amban that afternoon and told him our tale of the lost suitcase. He promised to help us, and that very



THE KILIAN VALLEY

THIS VALLEY DURING THE ICE AGE WAS FILLED WITH A GLACIER, SIGNS OF WHICH ARE STILL VISIBLE TO-DAY.

afternoon Kadre Akhon had to go back with some servants of the Amban to Kök Yar. We also left a card on our old friend Feng Tsing Tao, who had been the previous Amban. When we expressed a wish to call on him he would not allow us, and told us that he could not receive us in his present house. He, however, considered our call as having been paid, and appeared suddenly one evening with the Amban. Bosshard and I had to exert all our self-control to prevent ourselves from laughing, as the clothes of both these dignitaries were really too comic. Feng Tsing Tao had donned green English plus-fours, with a white felt hat, while the Amban, with his black silk official garments, had elected to wear a bowler!

We reached Yarkand two days later, when we were again courteously received by Mr Herrmanson. De Terra had in the meanwhile been working with conspicuous success in the Kunluns, and had hurried to Kashgar to discuss matters with the Tao Tai. He also had had his activities curtailed, and hoped by personal handling of the matter to be able to smooth down the authorities. The difficulties of which we had been warned in Urumchi were more serious than we had expected. I decided also to go to Kashgar, and was soon on the way.

Long discussions with the Tao Tai soon made it quite evident that we would not be able to accomplish anything further in Chinese Turkistan. We were forbidden to take any photographs; we were not allowed to leave the main caravan routes; de Terra was forbidden to make any geological collections, and I was not allowed

to make any archæological collections. These edicts were sufficient to show us that for our purpose it would be wiser to leave the country, if we did not wish to lose time by endless and fruitless discussions. We could get no information as to the seizure of our collections, and there seemed to be something in the suggestion of the Tao Tai that the collections already made would not be touched. The perpetual uncertainty in which we found ourselves was almost unbearable and a great strain on our nerves. Valuable time was wasted and yet we were quite unable to dispute anything. We were therefore glad when we were told by the secretary of the Tao Tai, after great delay, that we were to leave the country. We were naturally prepared for this and knew what to do. A few hours later we went to the British General Consulate to intimate to them that we wished to make our return journey by way of India.

We set to work to collect and to organise our new caravan. We studied maps, opened up negotiations with the caravan leaders, and eventually signed a contract with Sher Ali, one of the largest caravan leaders in Chinese Turkistan. We had new boxes made, our old chests and tents overhauled, and studied all available literature about the return journey by way of the Karakoram Pass. In our dealings with the Russian Consul we tried to make things smooth for Bosshard, who wanted to return with the heavy baggage by way of Russia. We were very much indebted to our friend for undertaking this and bringing it all home safely. The transportation of the heavy baggage and the collections

by way of India would have been extremely expensive, as the collections were detained by the Chinese authorities, with the result that, as they could not be sent during the winter months, at the best they could only have been dispatched during the summer of 1928. Bosshard was kept in Kashgar until 5th December owing to this seizure in September 1927. The negotiations which took place between Peking, Nanking, Urumchi, Kashgar and Berlin seemed endless, but eventually terminated successfully, thanks to the intervention of the German Embassy in Peking and the extraordinarily skilful handling of my Swiss comrade.

It would not be difficult to understand the edict against the removal of specimens from China if it were a fact that the Chinese wished to keep all antiques in the country. We had, however, permission to work with the local authorities. We had not been properly informed about the laws relating to excavations, and furthermore we had bought or had been given the greater part of our collection. Since the time of Sven Hedin, who was the first person to engage Chinese people for his expedition, all archæological research work can be carried out only by the closest collaboration with the Chinese. It is to be hoped that, in the interests of science, this collaboration in the future will be fruitful. It is possible that the great mistrust will vanish which the Chinese at present feel about all scientific work and investigation which are undertaken in their country. So long as they believe that the geologist is searching only for gold and silver, so long as they look on every expedition as dangerous espionage, it follows

that all scientific work becomes exceedingly difficult. There is yet one more thing which is required. If the Government of the particular province has sanctioned the journey and the programme of work, then all subordinate officials, who naturally have not the smallest knowledge of scientific work, should be instructed to this effect, so that the European can work unhindered and can count on assistance in carrying out his plans.

When I think of the jealousy of the Chinese I can quite understand their point of view. No scientific traveller had, during the past fifteen years, visited the western part of the Taklamakan desert. The men who had been there before had been diplomatic representatives, journalists, merchants—in fact, Europeans who had had no desire to leave the beaten track. Now we arrived and were the exact opposite. We went into the desert with a camel-caravan, and these people could not understand us. Why should anyone want to leave the highways with their comfortable *serais* in order to camp in the jungle or travel in that dreaded desert? Surely no one would do such a thing without a motive. The Chinese could never understand de Terra climbing mountains in order to carry out his geological work. To climb a mountain is a difficult task, a strenuous task, and one that no sane man would ever undertake unless a great reward awaited him. To undertake physical exertion for purely idealistic purposes would never be contemplated by a Chinaman, who avoids all exercise except that which is absolutely necessary. It can therefore be seen that our work was beyond them, and they thought that great secrets must lie behind it.

Shortly after my departure I learned from Bosshard that my suitcase had been found and handed over to him by the Amban of Yarkand. The officials of the Amban of Karghalik and Kadre Akhon went to K k Yar. They searched in vain for a few days, until one morning my bag was found lying in the village street. The thief no doubt had become afraid, and thought that his only hope lay in getting rid of the thing as soon as possible. He had not opened it and, to my great joy, I found the contents intact.

We trotted out of the town gate of Kashgar on the morning of 16th June. How pleased we were to be again on the move and to be able to make new plans! Of our newly planned route over the Kunluns and across the Kara-korams we were able to make a new large transverse section of the high mountain region of Central Asia, so that our observations of the year before could be supplemented in the best possible way. For the journey to Ladakh we had hired eighteen pack-ponies, but we kept our two riding-ponies in reserve.

The fifteen-day ride from Kashgar to Yarkand was now very familiar. It was the height of summer and was excessively hot every day. We therefore started very early in order to reach our next camping ground by nine o'clock, or at the latest ten. The stretch of country from Kizil to Kok Robot was especially arduous, both for us and the animals, and we suffered from the heat and the dust and sandstorms which occurred every evening and night.

We stayed for a fortnight as guests in "the Paradise

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garden," where the Herrmanson family again took us in. There remained now only the final collection and examination of the baggage. Bosshard was also very busy with his arrangements for his journey home. The time went very quickly and our last day soon arrived.

The Kilian Pass

DE TERRA and I left Yarkand on Monday, 2nd July. Owing to our stay at the Swedish Mission we now felt braced up and fortified and could with confidence undertake the journey back over the Kara-koram Pass. I have rarely so looked forward to a journey in my life as this one over the highest mountain range in the world. Many times during the past year I had looked to the west and seen from the Tibetan plateau the icy peaks of the Kara-korams topping this sea of mountains. We had had enough of Chinese Turkistan and yearned for the freedom of the mountains, the freshness of the air, and the clear sparkling water from the glaciers; the more so after our nerve-racking negotiations with the Chinese authorities, and the terrific heat of the Tarim basin, with its dust and sandstorms. How often had I in the last few months sat bent over my maps and made plans? Whilst in Khotan I had entertained hopes that I should have had an opportunity of seeing the high plateaux to the south and to the east of the sources of the Keria river, but this, unfortunately, did not mature. A plan though postponed is not abandoned, and perhaps I shall some time have an opportunity of getting to know this region personally. The Kara-koram route, however, still greatly attracted me, though many

Europeans had been along it. We had chosen to cross the Kunlun mountains by way of the little-used Kilian Pass, and later on to make some excursions into the Kara-korams.

The caravan which we had hired from Sher Ali left early in the morning, while we started at three o'clock. Bosshard and Herrmanson accompanied us as far as the outskirts of the town. We chose the route by way of Egerchi because the Yarkand river at Posgam was said to be very difficult to cross, and it was rumoured that three men, some sheep and donkeys had been drowned. Bosshard stayed with us till five o'clock, when he bade us a happy farewell, and with a nonchalant "See you again in Zurich or Berlin" left us. He then rode back to Behisht Bagh, while we headed for the ferry which would take us across the river. Two months before only a few isolated streams had been visible, while now the whole of the river-bed was filled with a brown, mud-coloured foaming mass of water flowing down into the valley. There was little traffic at the time, fortunately, so we did not have to wait long. A large cart and four horses were taken over by the ferry at the same time. The six ferrymen who manœuvred the ferry-boat steered in a skilful manner to the other bank. The current was very strong in places, and if one looked at the stream it sometimes appeared as though the ferry was not moving, while the men rowed at an incredible speed. It was only when we looked at the opposite bank that we saw that the current flowed in defined areas. After a short ride we reached Egerchi, where our tents had already been pitched.

Our camp was quite picturesque, as it was a very mixed affair, for we had horses, donkeys, mules and camels. We did not know our new servants, but the final collection of our caravan was to be made in Karghalik, where we intended going to hire our pack animals for our journey across the Kara-koram Pass. I really believe that de Terra too was thoroughly happy that afternoon as we sat in the shade of the high trees in front of our tents and discussed our plans. We were on the eve of a great journey and were frankly looking forward to it. For the last two months we had been unable to carry out any scientific work, and were therefore eager to do some again. Sher Ali had settled down with his people in an open place just in front of us and the camp fires while the business between the caravan merchants was being transacted. The horses were also tied there, and they were friskier than usual. One of de Terra's pack-ponies was a very playful beast, who would not allow most people to come near him. The Haji, de Terra's servant, whose duty it was to look after the pack animals, often used to come and complain that the brown one had bitten or kicked him. This brown one was soon to lose this trait, for when we reached the mountain regions he met his death.

We ought to arrive at the bazaar of Yek Chamba the following day, where we were to meet the caravan. We started off at five o'clock, and during the early hours of the morning riding in the fresh air was very pleasant. The path led through districts in which people were working in the fields, gathering in the corn. Towards eight o'clock it grew hot. The servant of the Amban,

who had accompanied us from Yarkand, left us here and took the road to Posgam, while we went on to Yek Chamba. It soon appeared that the map which I had with me was most inaccurate, which was hardly to be wondered at, as no European had ever left the main caravan route from Karghalik to Yarkand. We reached a bazaar at half-past eight, and on inquiry we were told that this was Yek Chamba. I failed to recognise the place we had passed through in May; this was easy to understand, for it was now in full blossom, whereas then it had been barren. We were pleased to reach our camping ground early, so that we could rest in a large fine garden, where we waited for the caravan, which would have to pass through here along the main route. About eleven o'clock we ate our lunch and had a nap in a small summer-house. At noon, as there was no sign of the caravan, we grew uneasy, as it ought to have arrived some time ago. I told the new servants of the Amban of Posgam to go back and look for the others and then to report to me.

It was particularly hot in the middle of the day, and our summer-house gave no protection at all from the heat. It was now two o'clock; three o'clock came and still not a sign of the caravan or the messenger. We began to think that it must have gone to another place altogether. We therefore made inquiries of the inhabitants, and ascertained that there was another Yek Chamba bazaar, so we set off there. We eventually arrived at the camping ground of the caravan after a hot ride across fields and along dusty avenues with poplar-trees on either side. It rained during the night,

and the next day was fresh and cool as we set off for Karghalik. The servant of the Amban put in an appearance again. We ascertained later in Karghalik that on the day we had sent him off to look round he had ridden off to Karghalik and told the Amban that we had again gone into the desert. He no doubt rode back early from Karghalik, having taken a good dose of opium—at any rate, he presented a sorry sight that day and could hardly keep seated in the saddle. He allowed his horse to wander about entirely out of control, and slept the whole time, and it was not till he was in danger of falling off that he pulled himself together and sat up straight. In order to wake him up a bit de Terra rode behind him and now and then gave the horse a flick with his whip. The small horse would then give a leap in the air, and the astonished man could not discover the cause of these bucks. In this manner we managed to reach Karghalik about nine o'clock.

The British Consul-General, Mr Williamson, had pitched his tent in the garden of the British Aqsaqal. He had been making a tour of inspection in Khotan and Keriya and was now on his way back to Kashgar. As he was leaving that very morning we were able to camp in the garden. We, however, spent a few pleasant hours with the British representative and then went off to the Yamen, where the Amban gave a feast in our honour. The most exquisite dishes were served, which clearly showed that our host had a very good cook. I drank there for the first time *kumiss*, or mares' fermented milk. It has not an unpleasant taste, something like

milk mixed with soda-water, and is similar to the Tibetan *chang*. Our old friend Feng Tsing Tao had also been invited to the meal, and took this opportunity of improving his knowledge of the English language. When we were returning to our garden after dinner Habiba came up with a sad face to tell us that his pony was ill and was dying. The poor beast lay writhing in the sand with pain. That morning it had been stabled with our horses and had had the same food as the other animals at midday, but it may have been possible that a poisonous plant had become mixed with the food, or possibly a poisonous insect, like a scorpion, had got into the hay. We took it the next day to the large *serai* which Sher Ali occupied, in which there were over a hundred horses stabled. Sher Ali attended to the animal himself, but with no success. In the course of the following day it was given quantities of oil, but it was no better. De Terra thought the animal would certainly die, and suggested a dose of bismuth might help. Five minutes later, however, after he had given the dose, it died in great pain.

There is always a great deal of life and movement going on in the bazaar, as all the large caravans which are about to go along the difficult route over the Karakoram Pass to Ladakh gather together here. The horses are washed and combed and shod, and for the last time the animals are given sufficient food to satisfy their hunger. Sick animals were particularly well looked after and it was possible really to learn something about horses. I shall never forget the picture of a small grey donkey about to have a very difficult operation per-

formed on it. Owing to heavy loads this donkey had developed bad sores on its back, which outwardly were healed, and covered over with a crust, but internally a large amount of matter from an abscess must have collected. The animal was visibly swollen, and would undoubtedly have died had not an operation been performed on it. A large sharp instrument was driven into its side, so that the matter spurted out in a stream. After about three pints had been expelled the animal had grown noticeably thinner, and two days later it was running about the *serai*.

Sher Ali had all hands busy getting the caravan ready. Packsaddles were sewn till far into the night, and provisions were collected. In the afternoon it was interesting to watch the horses being driven in herds into the river, accompanied by the shrieking and gesticulating of the men, who drove them back as they emerged. These manœuvres were carried out for the express purpose of getting the animals used to the boulders and dangerous river-crossings which we should encounter during our journey.

At last, on the morning of 7th July, at seven o'clock, we were able to leave Karghalik. The previous day there had been numerous last purchases to be made in the bazaar, as it was necessary to buy everything here as this was the last big town before we came to Leh. We had to buy another horse for Habiba, as his had met with such a sad end. The day on which he lost his pony was an unlucky one for him, for he also failed to find his large bunch of keys and was robbed of all his money. Like all Asiatics he had lightheartedly put his

money in his coat-pocket. The coat, which he had hung on a tree, was naturally often unwatched, as he was frequently called away, and it followed that, as there were many people wandering about the garden, it was not surprising the money vanished. Habiba begged us to try to get the money back, either through the Aqsaqal or the Amban. We laid his complaint before the Aqsaqal, and in the afternoon an inquiry was held in our garden. Habiba produced one or two people whom he suspected, and these had to swear by the Koran that they were not guilty, which they all did without turning a hair, with the result that the inquiry was abortive.

It was a short march to Besh Arik. For the first time I saw the caravan which was to take us to Ladakh. The horses were fresh, and often shied and threw off their loads. It was windy early in the morning and a sandstorm appeared to be brewing, which was not surprising, for it was a Saturday. It is a curious fact that the sandstorms which blew in June and July always came on a Saturday, Sunday or Monday. The only explanation that I can give is that if there has been a sandstorm the atmosphere becomes cooler and is saturated with dust and sand particles. The day after the storm it is practically impossible for the rays of the sun to penetrate the atmosphere. It is not till the second day that it becomes warm again, and the heat gradually rises till it reaches its highest point on the fourth day. Owing to the rising air, movements of the atmosphere are created, which in turn start another sandstorm. In a few minutes our camp was covered with a thick cloud of

sand and dust, and the trees were swaying in the wind. These duststorms were far more uncomfortable really than the sandstorms of the Taklamakan, because the loess dust, as fine as flour, works its way into everything. In a few minutes everything was covered with this fine yellow dust and breathing became difficult, as the dust got into one's lungs.

We travelled the following day from Besh Arik to Bora, our path lying across gravel plateaux. Bora is an oasis like Dowa or Puski, and lies in hillocky country. We pitched camp at the end of the village from which leads the path up to the first pass. On 9th July we rode through undulating country, which was practically without vegetation, and reached Besh Tograk. We were able to see a long way in the fresh morning air. The rays of the rising sun lit up the distant sharp-featured Kunlun mountains. A few big white snowy peaks shone from the blue sky, and these belonged to the Raskem chain. By about nine o'clock it was very hot, but in the shade of the tall poplars of Hassan Boghra Mazar it was pleasantly cool. Besh Tograk is a large oasis and occupies a far larger area than has usually been shown hitherto on maps. The new caravan people were good and the animals appeared to be strong. We drew nearer and nearer the high mountains, and in two or three days we hoped to be in the heart of the Kunlun mountains. There were already signs that we had reached higher altitudes, as the plague of flies had ceased.

A short ride brought us to the large oasis of Kilian, which I had already got to know in May. The air here

was cool in contrast to the plains. The hills were mostly buried in sand and gravel, and only on the east side did a few steep cliffs of red and grey colour appear. Whilst Habiba held the horses de Terra and I went over to study the cliffs, where we found numbers of Eocene fossils, and never before had we seen such thick oyster-shells. The fording of the Kilian river presented no difficulties, though we did get our feet wet, while Kurrum took the opportunity of having a good bath. He as usual always chose his own way, and always thought he had found the best place at which to cross, but this time he got caught in a strong current and was carried a long way by it. There was a great bustle and stir in Kilian, as five large caravans were camped there, making preparations for the crossing of the Kara-koram Pass. We again made use of the garden in which Bosshard and I had camped on 12th May last. In the afternoon the Chinese Customs official, who is stationed here, paid us a visit, but did not examine our baggage. Kilian was the last great oasis which we saw in Chinese Turkistan.

We were able to push forward again on 12th June. We were very surprised indeed to find that no servant of the Amban had been detailed to accompany us as far as the frontier. We actually came to the mountains about half-an-hour after we had left the oasis, and bare walls of rock surrounded us. We worked our way over the rocks for about three-quarters of an hour, in the sharp cracks of which pigeons and buzzards were nesting. The weather was not very good, and now and then a blast of wind overtook us and a shower of rain.

The path farther up the valley was charming. We rode along above the gorge through which the Kilian river winds its way, passing over rocky terraces and again along a stretch by the river. We shot some pigeons and partridges, and ate our lunch on the banks of the river while we waited for the caravan. We noticed our horses above us gradually ascending; our camping ground must, therefore, be higher up. The tail of the caravan was brought up by the Haji, who was leading the sheep which formed part of our provision of live stock. After we had crossed the river by a wooden bridge we came to a grazing-ground by the river, where we camped for the night.

We continued our ascent in beautiful weather up the valley, over sand and moraines covered with *detritus*. The river, whose pale, muddy waters we had to cross at Kilian, was now in the mountains a beautiful blue-green stream. The mountains here were higher and the peaks more concentrated. The small green oasis of Uluk, which lay basking in the sun before us, was curiously fairy-like. The dark green, slim poplar-trees which one could see from afar rose up majestically, reminding me of cypresses, while the bright green grazing-grounds stood out in sharp contrast to the grey-yellow bare mountains. White clouds like sailing-ships scurried across the blue sky, and I thought of holidays I had spent in the Alps. We did not meet a soul, and the small oasis seemed to be deserted, save for a horse and a donkey grazing in a carefree manner in the high grass. We crossed a roaring mountain stream and then went along the edge of a terrace. We noticed

the first dirty Kirghiz settlements ; a few women stood in front of the doors of their round dwellings gazing at us with astonishment as we rode past. About eleven o'clock we reached that idyllic place Tallak, which resembles an Alpine pasture. There was only one small farm-house, which lay hidden under some poplars, whilst round about were grazing-grounds. We had unlimited milk and butter, and the inhabitants were quite friendly. These people had an Aryan look about them, and we were introduced to one or two Wakhanis who were still able to speak their mother tongue.

We pushed on ahead the next day into the wilds of the mountains, while the valley became narrower and narrower. We had to cross the river just above Tallak, where the light effects were so pretty that I took several photographs and made a cinematograph film. We then came again to rocky parts, where the path winds its way along a wall of rock, and it was necessary to watch one's horse continuously. We saw the Kilian river far below us. The climbing over these parts took a great deal of time, as the donkeys on these occasions became abnormally stupid and had to be led separately. The path zigzags up to the summit of the pass, from the top of which we had a fine view into the valley below. We were now at a height of 9850 feet ; the last part of the way was a wet affair, as we more than once had to cross the river. My horse slipped and fell into the fairly deep water, while de Terra's got out of its depth and swam a stretch with him. At last the valley broadened out, with green fields on either side of the river, and here we pitched our camp.

Our march the following day took us into the heart of the mountains, and the valley became even more wild and deeply carved. We had now left behind several tributaries and there was little water flowing in the river. For the first time we saw the snowy peaks of the main chain before us. We spent the night in this narrow valley, on a small patch of grass just big enough for our tents, at an altitude of about 12,136 feet. In the afternoon it poured in torrents and we could see nothing of the surrounding scenery. The wonderful flora was most noticeable on the grass-fields—large white edelweiss, yellow anemones, pink, star-shaped flowers and many violet ones. The ground was often covered with moss, and the day before we had seen the first dog-roses. There were not many species of animals. Birds of prey frequently circled above the high rocks, and black jack-daws with red beaks and feet used to caw on the terraces. Water-wagtails and brand-tails also were plentiful, and butterflies fluttered about the flowers. In vain did I look for a butterfly unknown to me: they were always species known also in Europe—like cabbage, thistle, and argus butterflies—that fluttered from flower to flower.

The next day, after we had ascended a part of the valley, we climbed up a spur of 12,767 feet, from which we had a glorious view of the encircling mountains, which formed a sharp contrast to the blue sky. We were able to see a long way up the Upper Kilian Darya, that looked like a magnificent glacial valley, reminding me very much indeed of the Lauterbrunner valley in Switzerland, as there were also the signs of former

glaciation clearly to be seen. Yaks, horses and other animals were grazing on the slopes, while some camels were being driven down to the valley. The pasture-lands were covered with flowers, and especially pretty were the blossoming thick mosses. The weather was fine, and although at midday we were resting at the height of the Jungfrau it was comfortably warm, so that we could take a sun-bath. The whole day we went on foot, walking in the clear air, which is magnificent at these altitudes. In the afternoon black clouds came up over the valley and covered the surrounding mountains with a thick mist.

We were awakened by Habiba at 4 A.M. on 17th July, for our task that day was nothing less than the 17,400 feet Kilian Pass. The night before the hired yaks had arrived which were to carry the baggage over this pass, which was covered with ice. I left on foot at about half-past five. The path winds in a corkscrew manner up the right side through stony fields. Great snowy peaks towered above me, whilst below was the roaring river. The vegetation became scarce at an altitude of 14,432 feet, with only occasional Alpine flowers. De Terra met me on one of the large moraine-fields which spread out from the path leading up to the pass. He had with him two men carrying the photographic apparatus. We began to feel heavy at an altitude of 13,448 feet.

We halted on the edge of the first large snowfield on a stony plateau, through which a stream ran, in order to wait for the caravan and at the same time to take some photographs and films. We then began on the

last part of the ascent up the pass. We walked this last stretch, as we felt safer on our feet than on a horse. The horses stumbled about, and would insist on walking on the extreme outside edge of the path overlooking a steep precipice.

We crossed a large rocky area and then cut across over a snow-slope. It was warm, and the snow was very soft, so that the horses sank in deep at every step. Water was trickling down the mountain-sides and the loose stones offered a most insecure foothold. An icy part of the path led us up, for it was fairly steep there and each animal had to be led separately, though, in spite of this, many horses slipped, without, however, sustaining any injury.

The path for the last thousand feet, with a cliff on one side, zigzagged up, covered with loose stones and rocks. Snake-like, our caravan slowly worked its way up the mountain-side. More and more did we feel the rarity of the atmosphere, and at 16,400 feet we were able to walk only about twenty paces, after which we had to sit down and rest. The caravan overtook us, and we had to take care that the stones did not fall down over us, as above us were the horses and above them again were the heavily laden yaks. The Haji, who was leading our two spare ponies, was complaining of a bad headache, and so were the other servants. The change from the plains to the heights had on this occasion been carried out too quickly, and our bodies had not had time to get used to the high altitude. While I was resting with de Terra beside a large rock I saw that the brown horse which was being led by the

Haji had become restive and was in danger of losing its footing. The slope was steep, with small streams trickling down it. The Haji tried in vain to hold on to the horse, but he eventually had to let go in order to avoid being dragged down himself. We then saw this poor beast slip about ten yards down over the loose rocks, lose its balance and hurtle down, striking a large rock, till it came to rest about 330 feet below us in a snowfield, where it lay still. One of the porters at once went down to rescue the packsaddle and the halter. Had the horse not been already dead it would at any rate have had to be shot.

We ourselves worked our way higher and higher, and finally reached the snow-covered summit of the pass, about 17,400 feet up; it was the third-highest pass we crossed during the expedition. An icy cold wind blew between the black rocks and over the snowfield, so that we had to put on fur coats. The mountains round us were gloriously clear, a scene of snowy high peaks. We could not believe our eyes when we saw Habiba and the porter, Mehmed Nur, leading up the slope below us the pony that had fallen down. At all events the animal had not broken its leg, but we were both doubtful as to whether it would reach the summit of the pass. While de Terra had a little rest I pushed on by myself.

The ascent was uncomfortable owing to the rarity of the atmosphere, but the descent was worse, as it led over a large snowfield in dazzling sunlight, and streams from snow melted by the sun were trickling down everywhere. It often happened that one slipped

through the thick layer of snow and found oneself standing in water, which was flowing underneath the snow. The path often followed the bed of the icy stream, and with soaking wet feet and shoes I at length reached a dry spot. I took off my shoes and stockings and spread them out in the hot sun to dry. De Terra appeared, and we had lunch together, but, owing to the hardships we had undergone, we had little appetite, and could appreciate only tea and a cigarette. Mehmed Nur now arrived with the pony which had fallen down, but which had received extraordinarily few injuries. There were several open wounds, but nothing broken, though its lower lip was split and there was a small hole in its head. The animal was doctored in the evening and appeared to be none the worse for its fall.

The descent into the Tegürmenlik valley was easy, though it was rather tiring, as the path wound its way down endlessly over rocky slopes. We had reached the summit of the pass at two o'clock, but it was not till six o'clock that we arrived at our camping ground, situated on an alluvial, fan-shaped deposit which had pushed its way into the valley. The Tegürmenlik river that night became so swollen that we could neither go up nor down the valley, and were forced to remain prisoners on our island, seated on rocks, upon which the tents had with difficulty been erected.

Difficult River Crossings

WE had to get up very early on the morning of 18th July, as the greater part of the way led by the river-side, and the water was high by two o'clock. The journey was monotonous: the steep mountain-sides were bare, and there was not a single blade of grass to be seen. Formerly glaciated side valleys hung over the main valley, and moraine walls were visible. At 11.30 A.M. we came to a grazing-ground on the banks of the river, where we camped in the sunshine, and had breakfast while waiting for the caravan. It arrived about one o'clock, and, as we did not know whether we should reach the next camping ground before the water was too high, we decided to remain where we were. At two o'clock we noticed the rise in the water, but it was not till about three o'clock that the real snow-water really began to come down, thundering and foaming between the rocks. The water in the morning had been as clear as crystal, but it had now turned muddy. During the first few nights we were unable to sleep for the roaring of the river, and the continual throwing together of the large rocks which were being driven down. I ought to mention here that the horse which had fallen had made an excellent recovery, and was now grazing with the other animals.

On 19th July, after an uninteresting journey through the wild gorge of Tegurmen Su, we reached Kilian Kurghan, the curious, deserted *serai* which we had passed nine months before on our way from Suget Qaraul to the Sanju Pass. We frequently had to cross the river, which in places was deep and violent. In the early morning the water was clear, and we were able to distinguish nearly every stone at the bottom of the river, but were unable to judge the depth. Once my pony slipped and I was thrown into the water, and got wet to the waist, but luckily the sun was hot that day and I soon dried.

We camped near the junction of the Toghra Su and the large Karakash river and ate our lunch. Two Kirghiz, who were living in a miserable small hut, offered us tea, bread and raisins. We were overtaken here by a large caravan, which was also on its way to Ladakh. We rode up the left bank of the Toghra Su and soon reached the spot where this other caravan was crossing the river. We watched the fun from one of the terraces, and saw the horses being driven through the foaming waters, where at times they were completely submerged. Donkeys and sheep were tied with a rope and dragged through the water. About two o'clock the whole caravan was safely on the other side. Just as our horses arrived the water from the melting snow came pouring down, and in half-an-hour it became impossible to cross. We therefore stayed where we were, and pitched our tents on a terrace covered with loose stones. In the afternoon de Terra and I wandered upstream until we thought we had found a better

place, where the river divided into four streams. The servants were busy packing the baggage in sacking to make it waterproof. The next day we ascertained that it would be impossible to cross the river there. It happened that the first arm of the river to be crossed was full of deep foaming water, which would have overwhelmed the animals.

There was nothing to be done but cross the Toghra Su at the place where the other caravan had crossed, though there was now more water. The important loads were placed on the largest horses and were taken across. Habiba and I crossed first, and the things which got wet we unpacked and put out in the sun to dry. The difficulty in crossing this mountain river was not so much the depth of water as the large rocky boulders which formed the river-bed, and which could not be seen owing to the muddy colour of the water. The strong current also made matters difficult for the horses, which, though picking their way carefully, could not get a proper foothold, and slipped about so much we were surprised that they did not break their legs. It was amazingly hard to get the donkeys to the other side of the river. They were tied to a lead, and each rider had to lead one or two across. The water was too deep for these small beasts and the current was frequently too much for them, so that the rope became taut, and the guide would have to exert all his strength to prevent himself from being dragged under as well. All the donkeys, however, reached the other side safely. Kurrum brought up the rear, being towed over, too, on the end of a rope. When I seized him on his arrival

he was exhausted and lay as though dead, and it was some little time before he pulled himself together and was able to stand up. He then slunk away, hurt by such treatment, in order to find a sunny spot. I tried to comfort him but he refused to make friends; his feelings were so overcome that he would not look at me, and moved away. He was offended with us for two days and would not touch any bones we gave him. We then went along the bank of the Kara-kash river and camped beside a spring.

We did not get under way till late next day, as the horses had strayed overnight to a distant grazing-ground and had to be rounded up. We therefore took the opportunity of paying our respects to the stout Yarkand merchant who was the owner of the large caravan which had crossed the river the day before yesterday. This large gentleman sat in the midst of his bales of goods and received us in a very friendly manner. We drank tea together, ate bread and smoked cigarettes. When all our horses had been recovered, de Terra, Habiba and I set off. The journey was dull—across large fan-shaped alluvial deposits, formed by small streams which flow from the mountains to the south of the Kara-kash river. About eleven o'clock we were brought to a standstill by a steep cliff which blocked our way. The river with its muddy waters flowed past the bottom of it, and as the water was about five feet deep we waited for the caravan.

The caravan of our Yarkand friend arrived first, which meant that we must enter the water, as the river, which was one hundred yards wide, had to be

crossed. We looked forward to this with mixed feelings, for the river was in full flood and its brown waters were racing along, forming an occasional whirlpool. The ground near the banks was deceptive; de Terra had ridden on to a small stretch of ground when suddenly his horse sank in up to its knees, and he was shot over its head. The men belonging to the Yarkand merchant displayed great energy; in a moment they had stripped and, armed with large sticks, waded into the icy water. We discovered that it was possible for horses to cross here, though it was probable that the loads might get wet.

I estimated that we would take about twenty minutes to cross the numerous arms of the river. Kurrum was not tied on this occasion, for as the bottom of the river was sandy he could not hurt himself even if he were carried away by the current. The sheep also got over safely, though it had to use all its strength to do so. Unfortunately, we should have to cross this river again when we came to Suget Qaraul, which lay on the other side, but this last crossing was no more difficult than the first. We then wended our way across large depressing-looking alluvial deposits, covered with big boulders, reaching Suget Qaraul about three o'clock, which we had passed nine months before when crossing the Tibetan plateau without sheep. There were now half-a-dozen armed soldiers here and a Customs official. The Chinese flag was flying over the gateway of the *serai*, but otherwise the place seemed deserted. Our old friend Haji Hashim Beg, to whom the year before we had sold

our sheep and our surviving yaks, had left the week before for Guma.

The 22nd of July was a day of rest. The horses were sent out to graze near Bilakchi. In the afternoon the Amban paid us a return visit, and brought us back our passes and Customs papers. He had a slight knowledge of Russian, for he had spent a considerable time on the frontier by Semipalatinsk, and conversation was therefore easier in Russian than in Turki. Our baggage examination took but little time. Part of the evening we spent in the tent of our caravan *baschi*. All the servants had forgathered, smoking their water-pipes and drinking tea, and we had already finished another box of cigarettes to celebrate our departure from Chinese Turkistan. One of our men was playing the flute, while a servant of the Amban who had been sent after us danced to it. We then allowed the gramophone to be fetched, which proved a source of great joy to the new servants. Suddenly Habiba sprang up and ran to the kitchen-tent. I felt instinctively that something was wrong. Sure enough, Kurrum had seized the opportunity of investigating the tent and had got hold of the liver of the freshly killed sheep, which we were to have had for breakfast next morning. He was well thrashed and then tied up.

On 23rd July we pushed our way into the valley leading to the Suget Pass, 17,610 feet. It was true Tibetan weather; at one moment the sun was shining and it was very hot, the next there was a shower of rain in the valley. We found a number of pigeons, so the shooting was good. I met two Turkis here returning

from their pilgrimage. One of them as a souvenir had brought back some small parrots in a cage strapped to his horse. After a short journey along the edge of these gigantic moraine walls we came to a grass-field beside the Suget river, where we pitched our camp. The Amban of Suget Qaraul suggested that the Beg of Shahidulla should accompany us as far as the frontier, though the exact frontier between India and Chinese Turkistan has never yet been decided.

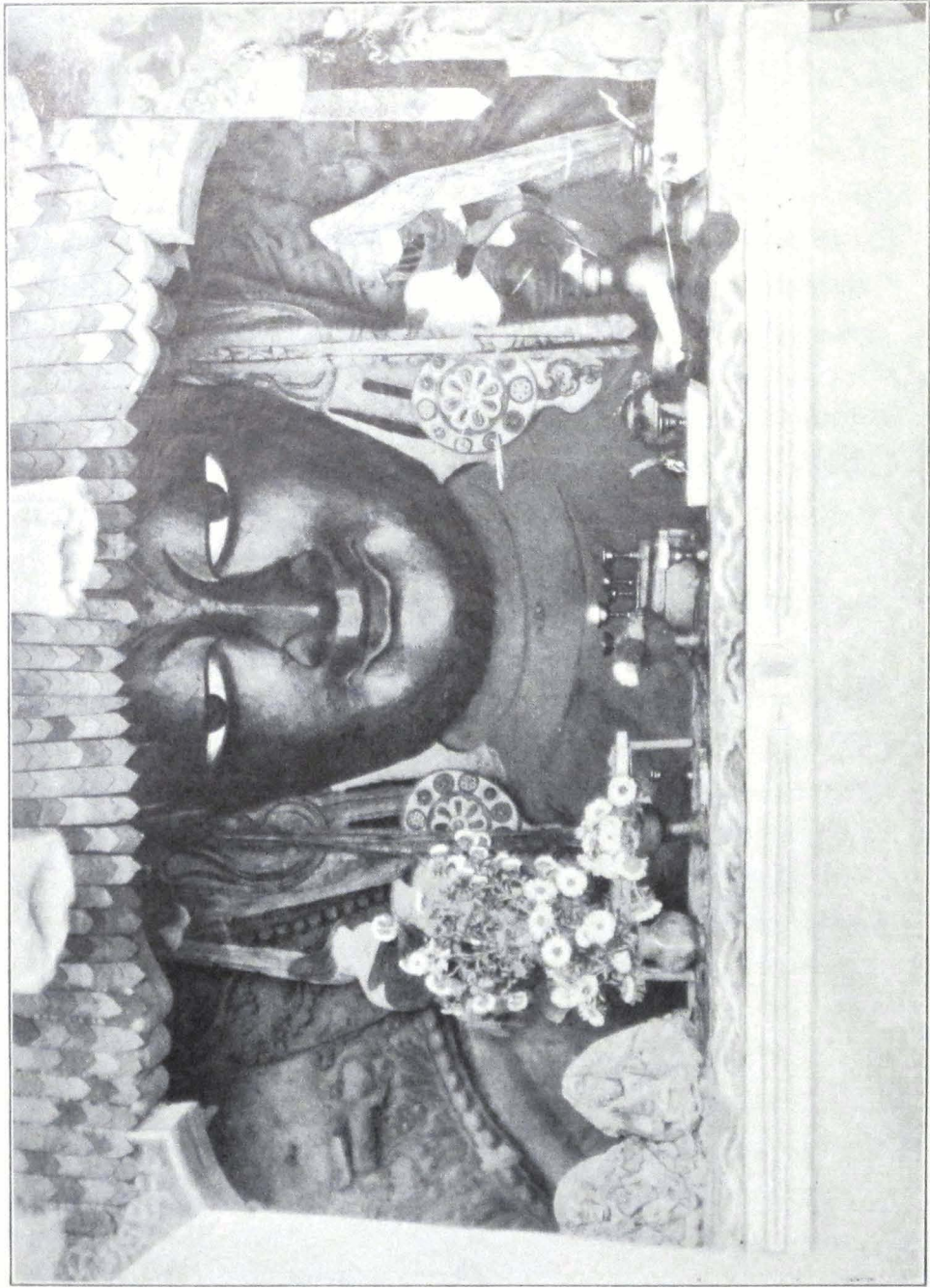
We reached an altitude of 16,400 feet on 24th July. The weather was getting worse and worse, and more and more variable. The country was typical of Tibet—brown-purple mountains covered with stones. Here and there a patch of deep blue sky formed a sharp contrast with the snow on the peaks, and the thick white cumuli clouds threw ghostly shadows as they scurried across mountains and valley. Vegetation was very sparse, but *burize* was growing in small clumps. Beside the streams we came across carpets of flowers, primulas, edelweiss and honeysuckle. The valley broadened out, so that the river lost itself in it. Once de Terra sighted a jackal, which was investigating the skeleton of a horse. I should think that we saw at least thirty skeletons of horses and donkeys that day, though in some the skin was still intact. We were about two hours ahead of the rest of the caravan when we reached our camping ground at Kotas Jilga, and we pitched our tents on a terrace above the river. Four of the men were a long way behind as they had developed headaches. We saw the Suget Pass just ahead of us, and the ascent did no

seem very difficult, the pass itself being 900 feet above our camp.

On 25th July we made the long journey over this pass. It was not a difficult climb, but near the top the ground was soft and the horses sank in at every step. We halted at the top, took photographs and an altitude reading. The descent led down a broad defile, the path being covered with stones, and little streams running in and out, while the purple mountains round us were thickly covered with rubble. There was an icy wind blowing, which we had to fight, and we were all suffering from bad headaches from the rarefied air. We had a glorious view of the Kara-koram chain, which lay before us, outlined against the horizon. The deep blue sky was flecked with tiny white clouds. When the sun was out it was scorchingly hot, but when the wind was blowing it was impossible to wrap up enough. We pitched camp in Malik Sai, on the bank of a small river. We wanted to stay there for two days as we had a great deal of photographic and geological work to do. The Haji, who continually complained of a bad headache, had got left so far behind that we sent back a horse to fetch him. We saw numbers of skeletons on either side of the path, and I do not believe that I am exaggerating when I say that every fifty yards we came upon one.

When I emerged from my tent on the morning of 26th July it was snowing hard. De Terra had had his two horses saddled in order to go to Aktagh, where one or two geological problems were awaiting solution. I set off on foot about nine o'clock to reconnoitre the ground to the east of our camp. I passed the large

valley which we had crossed and then turned up a small side valley, where I discovered a clear lake. Two families of wild-duck were living there with their young ; in the large valley I had seen three antelopes. The weather was as usual very changeable. A biting west wind was generally blowing, accompanied now and then by a hailstorm, while the temperature was round about freezing-point. Our earth can be a raw, inhospitable stretch of land though it does give us such amazingly beautiful scenery. From the small valley where I had been sketching and had eaten my lunch I climbed up to a plateau through a small defile. This plateau reminded me very much of the Aksai Chin. To the north were the white peaks of the Kunluns, while to the south were those of the Kara-korams. The view to the east, the Kushu Maidan and the Lingzitang plain was blotted out by clouds. To the west, from whence a storm was approaching, were coloured, disintegrated mountains covered with brick-red rocks. I was back in camp by four o'clock, glad to obtain some protection from that icy wind.



HEAD OF BUDDHA MAITREYA IN MONASTERY

THIS STATUE IN A MONASTERY NEAR LEH IS OF COLOSSAL SIZE AND IN FRONT ARE SEEN HOLY VASES, SMALL IDOLS AND BUTTER LAMPS.

The Yarkand Road

IN the heart of Asia, crossing the highest mountains in the world, runs the Yarkand road, forming the bridge between India and Central Asia. It is only during a few months of the year that traffic is possible on this the highest caravan route in the world. Icy storms blow across the plains even in the height of summer, and in July and August the temperature often sinks below freezing-point. There are always winds; winds which blow down from the 26,000 feet peaks of the Kara-koram, driving the clouds across these lofty plateaux. These clouds scurry across the sky, while their shadows flee even faster across the ground.

This Kara-koram road, the *via dolorosa* of Asia, along which so many men and animals have travelled, for how many skeletons is it responsible? For ten long days one meets nothing but boulders and bare rocks, roaring mountain streams and blue glaciers. The caravan animals, after crossing this desolate region, reach Ladakh or Chinese Turkistan in a dreadfully thin and emaciated condition. There are five passes of more than 17,380 feet to cross, of which the famous Kara-koram Pass is about 18,270 feet. It is a cruel land, and many travellers have cursed and groaned over it. All the same there are wonderful and magnificent scenes to be found there. Where do we find another part of

the world which can show us such pictures as the Dapsang plain, 17,060 feet high, and overlooked by a circle of ice-bound peaks from 23,000 to 26,000 feet high, and whose crystal pinnacles seem to push the clouds? What charm lies in the yawning ravines, in the black chasms, in which the icy, blue-green snow-water hurls itself over gigantic rocks, defeating the traveller, forcing him to search for a narrow path up the steep side of the mountain? *Via dolorosa* of Asia indeed; what troubles and anxieties does it cost us to pass along your way; but yet our thoughts turn back to your majestic world, and in the rush of modern life and European civilisation the mind wanders back to the solitude and peace of your kingdom.

One of our donkeys died on the morning of 26th July; the night before I had seen it collapse just outside the camp, and as I left that morning on my reconnaissance I realised that it was in the last stages. Birds of prey were busy by noon and soon nothing remained but bare bones. At five o'clock it was clear to the south, and the scene was so gorgeous that I could not refrain from sketching it, though it was difficult, as a terrific wind threatened to blow my hat off at every moment and I could scarcely hold the sketch-book in my hand. On 27th July it began to thaw, and there was scarcely a breath of wind. I rode back to the valley which I had visited the day before, and followed it in a north-easterly direction. The land was bare, with no sign of vegetation or animal life—nothing but the great snowy mountains which encircled us, giving the country-side a peculiar charm of its own.

De Terra and I set off the following day on foot for a reconnaissance which ought eventually to have taken us to our next camping ground at Sarigh Darvase Ot. Among these mountains we were able to carry out some interesting geological studies, which would enable us to work out the whole history of these mountains. There was no sign of our caravan as we descended again to the vast river-bed. We met, however, a few people from other caravans in a side valley, who told us that our men had passed about two hours ago. We therefore pushed on, the wind blowing in our faces. We made but little progress, for we were 16,500 feet up, and were therefore forced to lie down and rest every few minutes. There is nothing more strenuous than fighting against a strong head wind. It was now two o'clock, and our usual lunch-hour was long past. We were hungry, thirsty and exhausted. De Terra lagged farther and farther behind, and I had to rest continually. At last I saw the Haji in the distance, leading a horse, and I was able to see by the help of my field-glasses that he was coming towards us. Habiba had probably sent him back to meet us. I told him to go back for de Terra, whilst I continued on foot. At last de Terra appeared, riding the horse, and we halted whilst I drank two cups of tea and ate some bread and marmalade. My hunger was quickly appeased, and I noticed several times that our appetites at high altitudes were very small. This was particularly noticeable on the return journey, when we ate only enough to keep body and soul together.

Our camp that night was near a small green plateau, where we spent two days so that we could reconnoitre

the country round. I set off on 29th July in a south-easterly direction from our camp. I again had a glorious view of the Eastern Kara-korams: the air was so clear that all colours were absolutely distinct, the white of the snow and the blue of the sky with the deep blue and violet shadows. About noon I came to a large plateau, on which were growing a certain amount of grass and *burize*. Numbers of antelopes were grazing there, but apart from these there was no sign of animal life, except for the appearance of an occasional crow. The loose stones and muddy deposits which cover the sides of the valley were very deceptive, for rabbits and other rodents have numbers of invisible holes here. It is therefore necessary to be very careful when riding, because a horse frequently breaks through the muddy surface, and it is easy to take a toss.

On the last day of the month of July I went on a long ride which brought me near the Kara Tagh Pass. I had planned to find the lake which, according to old reports, lies at the foot of that pass. I again visited the plateau which I had found the day before, and saw to the south-east a chain of dark red mountains. Behind these red peaks, capped with snow, was where, in my opinion, the pass must lie. I rode along the ridge of red mountains; to my left were mountains composed of siliceous limestone, while to the right were dark red slopes. Mehmed Nur, who was with me, was soon far behind, as I trotted for a while in order to get on faster. The ascent was fairly steep, so I tied my pony to a rock and continued on foot over the large stones and rocks. When I did eventually reach

the summit—16,239 feet—my view was obscured by other peaks. Only two conspicuous peaks rose above this labyrinth. In the meantime it had become late and I had to think of turning back. The pass which had been visited by Trotter and Stoliczka must undoubtedly have been in the vicinity, though I had no time to make further investigations. After taking one or two photographs I started back again, and rode across the plateau, where I found the head of an antelope, with the horns. About an hour before I reached camp I ran into a violent hailstorm, which fortunately did not last long. That evening the weather was vile, and we could see nothing of the surrounding mountains, for it snowed and hailed alternately.

I expected next day to see the ground covered with snow, but as soon as it fell it melted, and it was only the higher peaks which were covered with a layer of snow. Our march that day proved interesting only after we had left behind the rocks of Tashna Tube. We had now come to a really picturesque part of this mountain world, with its deep red rocks. While de Terra was carrying out his geological observations, on the slopes of the mountains to our left, I began a sketch, but was caught in a snowstorm. The caravan was a long way behind and there were no signs even of Habiba. I guessed that the weather could not last like this for long, so I remained where I was and lay down, wrapped in my fur coat, allowing the storm to blow over me. My only companion was Kurrum, who crept close to me and helped to keep me warm, while he bowed his head and resigned himself to his fate.

The snowstorm, with its whirling flakes, was a grand sight. Several times it stopped for about two minutes, when I was able to get a good view of the hills. The sun then came out and lit up the rocks in red and violet shades, but the next minute the storm swept down over the country so that, at the outside, one could see only ten to twenty yards ahead. No sooner did the weather clear than the sun was overpoweringly hot and one got thoroughly burned. Our lips became chapped and covered with large blisters so that they bled very easily. I tried to smoke a cigarette, but it was too painful to hold it between my lips. Frequently I could not sleep at night for the pain, and, though I tried all kinds of remedies, nothing seemed to help.

Our path again lay past numbers of skeletons. It would be quite possible to guide oneself by the bones lying about even though there were no path marked. Just before we came to our camp we passed the body of a pack-horse which could have died only the day before, for the blood was still fresh and some black crows were keeping watch over it. Kurrum behaved like a street dog, going up to each skeleton to see if he could find anything worth having, though as a matter of fact his rations had been rather short lately, as our store of meat was getting low. There was little game to shoot, so that we had had to be content with bread and water. That afternoon we passed several snow-bound peaks about 19,600 feet high.

We reached the home of the Baltis, Balti Brangssa, at half-past five, in true April weather. This place lies at an altitude of 17,060 feet, and was the first camping

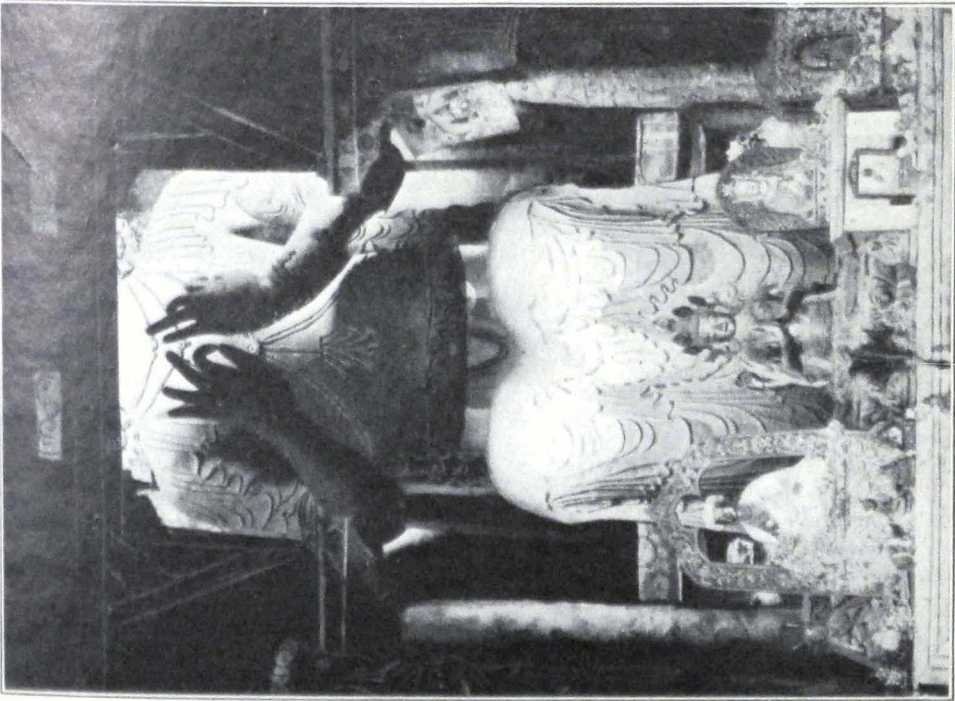
ground which had a Tibetan name. The ground here was covered with skeletons, and in one spot there were seven all lying together. Most of them, no doubt, were animals which had come from Ladakh on their way to Chinese Turkistan and had crossed the Kara-koram Pass and had just managed to crawl as far as here. A heavy snowstorm raged that night. About four o'clock I was awakened by the crunching of Kurrum's paws in the snow; he shook himself thoroughly and settled down again against the lining of my tent. More than once during the night donkeys and ponies had to be driven away from my tent, as they came there to shelter from the snow and always got caught by the ropes. We often wondered how these animals were able to endure this severe weather. During the night they were always tied together in pairs, the head of one to the tail of the other, as this prevented them from wandering far.

The morning of 1st August was unexpectedly fine. The peaks were covered by clouds but the snow on the ground soon melted. The path leading up to the Kara-koram Pass gradually rises up a valley, through which numbers of little streams run. On the higher slopes of the mountains the snow still lay in many places, and parts looked as though they had been lightly sprinkled, and presented a zebra-like appearance. Even here I was able to see traces of the early glacial period. In front of us to the left a mighty peak, about 20,013 feet, rose, covered with ice. On we went until about 1.30 P.M., when we saw the dip of the pass in front of us. We passed several dumps

of goods. Even as ships, in times of distress, cast ballast overboard, so caravans find themselves in the same predicament when many of their animals collapse. In one place there lay four bales of goods, tidily piled up, and in another place, on the edge of a stony terrace above a river, were eight bales. It is a sacred rule that none of these piles is ever touched; but no one ever tries to steal anything, for the porters already have more baggage than they want to carry.

The last part of the way winds up, and the gradient is small and not particularly difficult, but it is the rarefaction of the air which makes the crossing of this pass so arduous. We were glad to reach the top and rest in the sunshine and take photographs. Our caravan soon arrived, headed by the *bacha*—or the kid, as the other men used to call our youngest stable-boy. He was really a sturdy youth of about eighteen, who always led the caravan, and who was in no way affected by the rarefied atmosphere. He never rested a minute from morning till night during the times when we were crossing high passes. We found on the summit of the pass the first *lhato*, one with prayer-flags on a heap of engraved stones.

The descent into the valley to the south of the pass was fairly steep, but the path was well defined. Owing to the glorious weather we had a fine view. In the daytime the heat was often unbearable and we were badly burned. We met several Hajjis returning to their own country from their pilgrimage to Mecca. They were mostly surly and never greeted us. Many of them looked very depressed, and as if they would reach



THE LOWER PART OF A STATUE IN BASGO MONASTERY
THIS STATUE REPRESENTS THE BUDDHA MAITREYA AND IS THE ONLY
FIGURE OF BUDDHA WHICH IS REPRESENTED SITTING IN EUROPEAN
FASHION.



LAMARUYU MONASTERY

THIS MONASTERY IS PERCHED UPON HIGH CLIFFS COMPOSED OF
YELLOW CLAY AND CONGLOMERATES, BEING DEPOSITS OF A
FORMER LAKE.

home only with great difficulty. They generally spent their journey money very early in their pilgrimage, and were therefore unable to hire a pony for the return journey, and were thus compelled to walk the whole way. In 1928 the Chinese Government passed a law to the effect that every Mohammedan who undertakes this pilgrimage shall, before he can obtain a pass, deposit thirty pounds in the Yamen of his district. This law was passed in order to make the emigration of Turkis impossible, or to have a hold on their property until they return. The next morning we were still asleep when we were visited by two Englishmen who were on their way to Chinese Turkistan. They were Captain Mann, the missionary, and his companion, who brought us greetings from Bishop Peter in Leh. We gave each other details of the condition and kind of road which lay ahead of us, after which they left with their caravan for the Kara-koram Pass, whilst we set off towards the Dapsang.

The World's Highest Plateau

SHORTLY after we left our camping ground Habiba came within an ace of shooting me. I was riding with him when we sighted some pigeons, and as he was carrying the gun I told him to have a shot at them. He dismounted and began to take the gun from the case while I rode slowly on ahead. I was about three or four yards away when a shot rang out, and as I turned in amazement I saw the gun in his hand, the barrel pointing to the ground. De Terra, who was about twenty yards behind, remarked to me: "Your luck was in that time." The shot had struck the ground about two yards behind my horse, and as we had only a supply of No. 4 cartridges left one would undoubtedly have been enough to finish me off. Habiba, of course, said that the gun had gone off of its own accord, but as a matter of fact he had forgotten last time to adjust the safety-catch, and the trigger had caught in taking it out of the case.

The climb to the famous Dapsang plateau was not difficult. We worked our way slowly up a valley filled with stones until we eventually reached the summit of a pass leading on to the plateau at a height of about 17,700 feet. Once there we had a perfect view. All round us were the mightiest peaks of the world, some of which were over 22,500 feet high. The double peak

to the south-west was especially remarkable, and must have been quite 22,500 feet high. We took several photographs, although this was not pleasant work in the cold blast which was coming down from the snow- and icefields. We still had another pass of 18,040 feet to cross before the steep descent to the Kisil Unkur, or "red hole," a very suitable name for the orange-yellow and deep red conglomerate rocks, which form narrow defiles. A man came up to me here and begged for money or bread; he was one of the Hajis who was returning home, and seemed absolutely down and out. The road zigzags along the side of the valley like a bridle-path. We had to cross a river the colour of which reminded me of tomato soup, and arrived, worn out, on a small rocky ledge, where we had just enough room to pitch the tents. The cliffs fell away practically sheer from this ledge.

A long and tiring march on 3rd August brought us to a camping ground called Chong Tash by the Turkis, and Murgo by the Tibetans. We later rode downstream, crossing several side streams. The mountains here are an interesting geological study, for we could in several places see the mighty folds of the various rocky strata. Whereas up to now we had been of the opinion that this great range had been formed by a thrust from the north, here we saw quite plainly the folds to the north overlapping older strata, like the waves of a rough sea. While, according to de Terra's observations, the Kunluns, consisting of crystalline schists and palæozoic rocks, are certainly one of the oldest mountain ranges of Central Asia, the Kara-koram

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mountains are of more recent origin. The ancient land areas in this part of the Asiatic continent formed the original fragments of our earth's crust—*i.e.* the ancient areas probably underlying the Tarim basin and the Indian Peninsula not being separated by such a broad intervening mountain belt as, for instance, Tibet shows that there was not much room left for the development and unfolding of these younger mountain ranges. As they wished to unfold they found themselves hemmed in on both sides, and were compelled to push upward, thus forming this gigantic ridge, the rocks of which sparkled in shades of brown and green.

The particular peak, 22,750 feet high, round the base of which we were walking was an entrancing subject for a photograph. That afternoon we halted near Burtse and I shot several pigeons which had alighted on a terrace above the river. We were given to understand from our caravan leader that we were in the neighbourhood of Chong Tash. The valley narrowed until it eventually became a gorge, and was in several places totally blocked by large rocks, so that we had to pick our way with the greatest care. Our caravan people told us that these rocks must have fallen down in the previous year. The small mule-track which led round these steep cliffs had been well built, though it was not safe to ride here, as one false step would have precipitated us into the dark ravine below. That this frequently occurred was borne out by the number of skeletons lying at the bottom of the ravine and on the slopes. The last part of the way was very tiring, as the path went up and down like a switchback, which, at

an altitude of 16,400 feet is most exhausting. Shortly after this we met one of our own men trying to urge on a donkey and a horse that seemed quite unable to proceed. A little farther on was the caravan leader, who was coaxing an unladen donkey and a brown horse slowly up the hill. Again and again the animals stopped, and it was very difficult to prevent them lying down, for once this occurred it was impossible to get them up again.

At length this narrow ravine opened out into a wide valley. I was able to catch a glimpse of our camp below us from the edge of a terrace above the river, but we had first to cross a side valley in order to reach it. Higher up I saw our big white horse, led by Haji, fall down, but, luckily, Mehmed Nur managed to get it on its feet. Later de Terra told me that Haji had allowed this animal to fall again, and it died the next day from a perforated lung. We decided to have a day's rest here after our exhausting journey. One of the brown horses also died that day, no doubt from eating poisonous grass, as its stomach was swollen. That night a storm raged, and on 5th August a sharp wind was blowing, which made our progress very slow. There were several areas covered with alluvial deposits to be crossed before we reached the small green lake of Chong Tash, in the waters of which was reflected a peak 22,000 feet high. We now pushed forward to the broad Shyok valley, through a narrow gorge. The path leads between two walls of rock, rising to a height of 650 feet, made of black slates, and it was difficult at times to get even a glimpse of blue sky. We rode

through the roaring, muddy stream which filled the ravine, the depth of which it was impossible to judge, though, fortunately, it was never more than six feet.

The great valley of the Shyok opened out before us after we had worked our way through the ravine for about half-an-hour. We now had to cross the broad Shyok river. Two Tibetans were stationed here, whose duty it is to guide caravans through the river. Both men were equipped with long poles, and with their ragged clothes, long, black, matted hair and large earrings they looked very fierce. However, they guided us safely through these glacial waters, which came up to the horses' girths, and a short ride brought us to a terrace just below the Sasser Pass. Here we saw again the first roughly built house, and some Ladakhis greeted us in a friendly manner. They are very different from the Turkis. It is true that the Ladakhis are amazingly dirty, like all Tibetans, but they are always friendly and helpful, and are willing to suffer any amount of hardships without complaining. A small *chorten* just above our camp, with its fluttering white pennant, welcomed us back to the Land of the Lamas. Our camping ground was not very enticing, as there was not a spot of level ground, and all around were skeletons of animals.

We had been able in the course of the last few days to collect important details of the early glacial period of this district. The valley in which the Chong Tash lies, as well as other side valleys, shows signs of earlier glaciation. Further, the small side valley which leads from the Chong Tash Lake to the large Shyok valley

is in the shape of a great trough, the original level of which was 150 to 250 feet above the valley of the Shyok river. The river has now carved out a deep ravine. A mighty glacier at one time existed in the Shyok valley, and Dainelli, the geologist of the Italian Kara-koram Expedition in 1919, found traces of this former glaciation. The following day we had a difficult ice pass to cross, and as usual it was the animals who suffered most. We had all survived the crossing of the rivers, the most trying of which had been the fording of the Toghra Su.

Habiba woke us on 6th August at four o'clock. The weather did not look very promising, and shortly afterwards snow began to fall. The climb was not particularly difficult and it was only just below the summit that we came to large moraines. At last we reached the edge of the glacier and finally crossed the ice itself, which proved easy as the snow had frozen hard. Unfortunately the weather was very bad, for, though it had stopped snowing, grey clouds hung over us. After taking a few photographs and making some altitude readings we had to make our way across the large, southern glacier, which is fairly steep. Here also the snow layer over the ice held firm, and also the track was well defined by the many caravans which had passed across it, and only the lower end of the glacier proved difficult owing to the steep slope of the ice. The path had to be cut and improved with an axe and a pick before the horses and donkeys could proceed. We spent an anxious time while the animals were being dragged and pushed across, but eventually

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they were all safe. This, however, turned out not so bad in comparison with the cruel descent over large rocks. It was impossible to sit quietly on one's horse, for we had to jump from rock to rock. The scenery became more majestic. High above us were the blue-white ice pinnacles, and in front of us lay a small green lake, curbed by a gigantic mass of ice. On another glacier was a blue-green ice cavern, which was reflected in the water, while from yet another issued fountains and waterfalls.

Our caravan of donkeys made but slow progress. Several times these small beasts came to grief between the gigantic boulders, fell, and could only with great difficulty be persuaded to rise. They seemed to have no energy left; they wandered on aimlessly without making the slightest effort to help themselves.

Whilst we were making the descent we met a crowd of Ladakhis, who greeted us and reported that the *Tehsildar* of Leh was on his way. This official was under orders to pass on signals if the large glacier lake at the foot of the Remo glacier should suddenly empty itself by bursting its ice dam. As had happened before, a side glacier of the Shyok valley, the Chong Kumdan glacier, had pushed itself across the main valley and had dammed up the upper part of the Shyok river, which comes from the Remo glacier, and there was the danger that this mass of water would one day burst the dam. The British Joint-Commissioner, Captain Sinclair, had visited the lake in August, and had ascertained that the water was rising sixteen inches a day. The lake was about ten to twelve miles long, with a

width of about one to two miles and a depth of about fifty to sixty yards. Should the dam burst, it followed that a gigantic mass of water would pour through the Shyok valley, creating great havoc among the low-lying parts of the Indus valley. If a warning of such a catastrophe could be got through to Leh quickly the districts which would also be endangered could be informed. It had been worked out that the flood-wave would take about four days after the bursting of the dam to reach the low-lying country of India. It would be possible by a series of prearranged signals from the lake to warn Leh in a few hours. These signals were to be passed on by means of bonfires, and it was therefore arranged that, on certain selected high points, pyres of wood and oil were to be collected, at which two or three Ladakhis were also to be stationed. Should the dam burst then those next to the lake were to give the signal, which would then be passed on from post to post.

We continued on beside the lake, and at length ascended to the Talam Buti valley, where we were met by two Ladakhis, who presented us with two small bunches of apple-blossom by way of greeting. The way to the camp led along the level valley. We had to cross many small glacier streams, the beds of which were thickly packed with boulders and rocks. My pony stumbled frequently as a result of the exertions of the last few days and the scarcity of food. I, too, was very tired, owing to the long day's march, which had been done on foot. I was anxious to ride the last stretch to camp. I was riding along slowly and care-

fully over the stones when suddenly my pony stumbled and got his front foot caught between two rocks. He struggled and fell, with my left leg under him, so that I was wedged between the rock and the horse. Fortunately I was able to free myself, but my leg had been crushed and hurt considerably. I also tore my left hand, and these gashes hurt even more than my leg. I managed to get the pony, who had suffered no injury, on to its feet, and, limping along, arrived exhausted at our camp. I washed my hand and bandaged it with my handkerchief. Nothing but rest and cold compresses could help my leg.

We started off late on 7th August up the Talam Buti valley. There were great broken glaciers hanging on the mountain-sides; stones frequently rolled down, thundering into the valley. At midday the large Murghistang glacier came into view, jutting out from a valley on the western side. We found a small green spot for resting. The weather had cleared and we had a glorious view of the mountain surrounding this gigantic glacier. There was one particularly imposing peak, of an altitude of 24,000 feet. Next day my pony was so weak that I was afraid of another fall, so I was forced to walk, and as the path led across rocks and boulders I arrived in camp tired and completely exhausted. De Terra and Habiba, who had ridden on ahead, were fetched back by the caravan *bashi*. Too weary to do anything else, I flung myself down on my bed to rest my leg.

The next day another horse was saddled for me, but this one was very frisky and gave me no sense of

security. The path led along stony and rocky cliffs, and a false step would mean certain death. I decided to walk, although it was not good for my leg. After crossing the Talam Buti river by a wooden bridge we climbed uphill over stony ground. At last we descended to the roaring river, and I came to the conclusion that a short march ought to bring us to the Nubra valley. I then suddenly discovered that the path turned up to the right, and we had a long, wearisome climb over flat, polished rocks, with a sheer drop, in places, over the cliff. A hundred yards below us to our left the Talam Buti river roared and foamed its way through a black ravine.

At length we came to the highest point of this winding path, and there was the Nubra valley spread out below us; but we had nearly an hour's walk before we reached the valley. A small wooden bridge spanned the Talam Buti, and we rested for a while in the shelter of one of the terraces above the river, but it was unbearably hot. We were too tired to eat much, but drank copious draughts of tea. However, a pleasant path through the grand Nubra valley lay before us. Once again we saw settlements and small green oases on the large alluvial deposits which had pushed their way from the side valleys. There are numbers of little villages in this valley, among the gold of the barley-fields and the deep green of the poplar- and apricot-trees. There were monasteries on the cliffs and several white *chortens* dotted about among the settlements.

We met the first inhabitants at Taksha, who greeted us with a cheery *jhule*. The son of the *Kotidar*, or owner

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of the food depot, was awaiting the return of the *Tehsildar*. Like all Mohammedan Ladakhis he wore a red fez, but the Buddhists look much more attractive. I was struck by the costly turquoise-covered ornaments of the girls and women, and occasionally we saw some quite pleasing faces. Prayer-flags were fluttering from the houses, some of which were painted red in order to drive away evil spirits. The fresh green all round us, which we had missed for so long, and the apricot-trees laden with golden fruit raised our spirits. Small goats wandered among the boulders and well-nourished cattle were grazing in the fields. There was a perpetual rustle of small streams, and we often had to pick our way through the waters as they went on their way in murmuring content.

The Journey to India

WE next paid our respects to the *Kotidar* in Panamik, who supplied us with bread and tea. When the caravan arrived, late that night, we pitched the tents in a garden under some apricot-trees. We spent three days there, in order to give us a rest and to allow the animals time to recuperate after the exhausting crossing of the Kara-koram Pass. We could not have found a more delightful place. We had now descended about 10,000 feet, and it was therefore pleasantly warm.

We set off again on 12th August early in the morning, as it was still very hot. We went down the valley, across several areas of alluvial deposits and then past thorny bushes and tamarisks. The ground was frequently swampy and in places the path was under water. One colossal black mountain ridge showed definite signs of glaciation, for during the ice age a large glacier existed in the Nubra valley and spread down to the Shyok valley. It was stiflingly hot by ten o'clock in the stony fields and jungles; the sky was cloudless and there was not a breath of air. The slopes of the mountains were completely bare, and it was on the alluvial, fan-shaped deposits that the emerald-green oases appeared. On the opposite bank we noticed that ancient castle of Charassa which in olden days was the residence of the

native princes of Nubra. We halted at noon on the edge of dense jungle. Kurrum was most unhappy, as the flies and mosquitoes annoyed him beyond measure. He lay down in the sun, but soon became too hot, and after paddling about the sodden path he rolled in the hot sand and dust of the road until he looked an absolute sight. He then ran backwards and forwards like mad, until exhausted, when he threw himself down in the shade.

We arrived at Tagar in blazing sunshine. This is the first large village we came to in the Nubra valley. White *chortens* were dotted about everywhere, also *mani* walls were conspicuous all along the path. On the slopes above the village are the ruins of an old Lama monastery which is now deserted. We managed to find a camping ground from which we had a wonderful view of the whole of the Nubra valley. A report reached us that afternoon that the lake on the Remo glacier had begun to empty itself and that therefore floods would descend on us. The signal by the bonfires had been given. We were due to cross the Shyok valley next day, but it looked as though we should have to wait here for at least two days until the floods had passed. An order had been received to drag the ferries out on to dry land, for the floods were due to arrive during the night, or at the latest next morning.

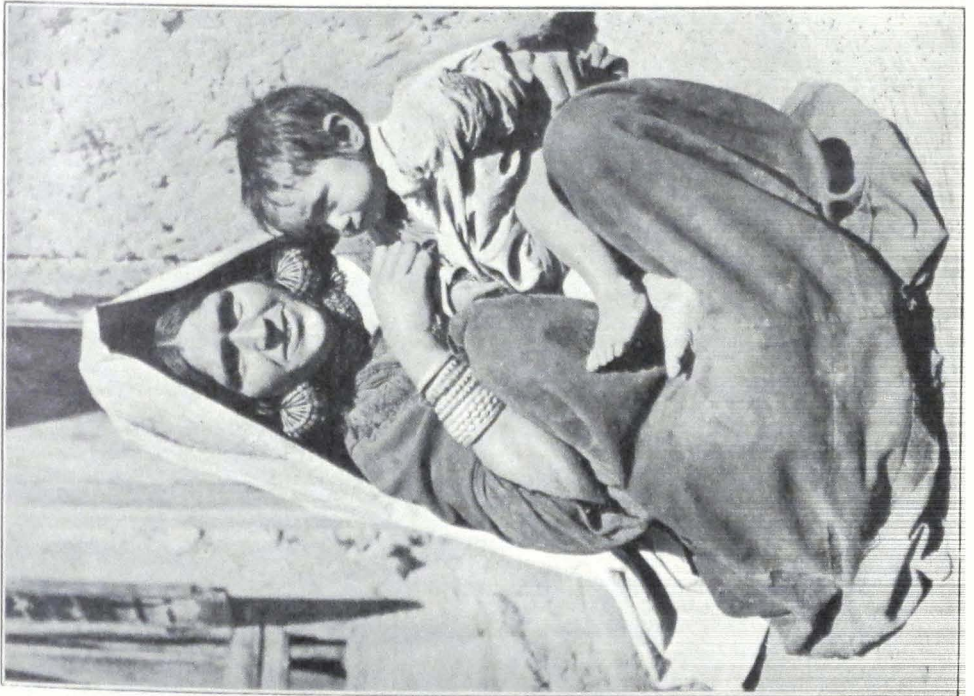
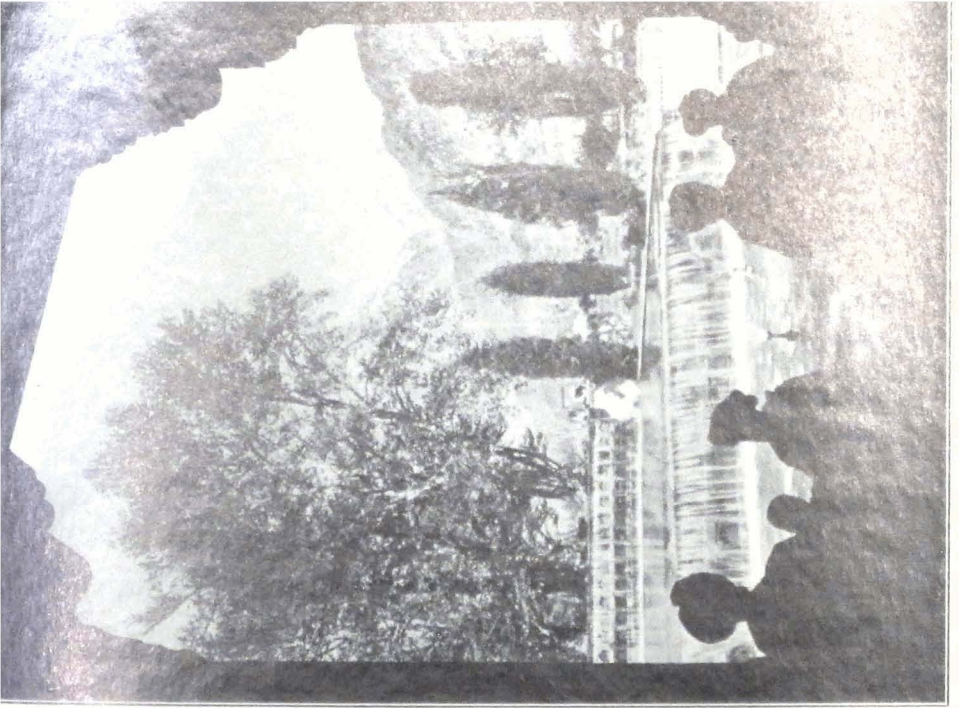
When I stepped out of my tent on 13th August I expected to see a gigantic swollen river sweeping everything before it, but I was agreeably surprised to find that the country had not altered at all. We wondered whether the dam had really burst or not, and soon

ascertained from a messenger from the Sassar Pass that a false alarm had been given, as one of the outposts had mistaken the camp fire of a caravan for the pre-arranged signal. The report had in fact reached Leh, and the telegraph wires there had flashed on the news to the Indus valley. The whole of India was in a state of suspense for several days, waiting for the catastrophe which did not in reality occur until the autumn of 1929. It was now late for starting off, and as there was good grazing-ground for the horses we decided to postpone our departure from Tagar till the following day. That afternoon I took a walk in the village and paid a visit to the old deserted monastery, the main gateway of which was padlocked. The monks who had lived here originally were supposed to have migrated to the large monastery of Deskit. One of the large *chortens* near by was decorated with a painted ceiling, while another more recent one had curious winged figures on it, some of which were broken. There were rows of prayer-houses, on which many inscriptions had been carved, some of which were cut into the wainscoting. All these inscriptions were of a religious nature and told of the pilgrims of Buddha and his pupils.

I was hardly able to sleep that night, because a violent storm was blowing all the time. When Habiba woke me at four o'clock on the morning of 14th August I was naturally not very pleased at being disturbed, but we had a long march ahead of us, which made it necessary to start early. The morning air was fresh and invigorating; complete stillness lay over the country-side, for the inhabitants were still asleep. I

had been walking for about half-an-hour when I came to the Sumur stream, which I was able to cross on foot. At the mouth of a ravine from which the stream flowed stood a monastery like a castle, the white and red façade of which stood out in marked contrast to the dark green of a wood. In the meantime the horses arrived and I was able to ride across the stream. Our path now lay along the sandy banks of the Shyok river and we were able to make only slow progress. Amongst a crowd of Ladakhis whom we met here I recognised my old servant, Tsang Tsang, who greeted me cheerfully. He was on his way to the Upper Nubra valley.

We came to the wooden ferry after crossing a large field. On the bank lay a number of bales of goods which were stacked up ready to be taken across, so we sat down and watched this being done. The river, or to be strictly accurate the main channel, which is crossed by means of the ferry, is not very wide, about twenty to thirty yards, but the current was strong and the boat was continually driven downstream. When we crossed the ferry was packed, and it was almost impossible to find room among the bales of goods. After a short while we safely reached the great sand-bank which divides the Shyok river into two streams. The ferry-men had refused to convey the horses, and the men therefore had to lead them some distance down the river before finding a ford. We remained on the sand-bank in the centre of the two streams, eating our lunch in peace and taking photographs. Each of us wondered what would happen if the floods should arrive now; but we should have little say in the matter! In the



meantime a few donkeys belonging to another caravan arrived on the sand-bank, and as I wished to hurry on I mounted one of them and proceeded to ride across the stream, which was only about three feet deep. We then had another rough ride over a hill covered with loose stones and boulders, till we came to the edge of a valley and saw far below us the green settlement of Kharsar, with its white *chortens*. There was also a monastery, the red façades of which formed a picturesque contrast to the green oasis.

The next day we followed the course of the Shyok river. The path in places was entirely hewn out of rock, and often wound round high over the river. I had been walking for about half-an-hour when the path suddenly stopped, having been washed away by a flood. A colossal downpour of water from a side valley had caused a gap about ten yards deep and thirty yards broad. There was nothing to be done but turn back and go by a small mule-track, which passed several hundred feet below us. We had a stiff climb in order to get back again to the old path. We soon turned into the picturesque Khardong valley, where vegetation was plentiful and the thickets by the river were impenetrable, while mountain streams rushed down over rocks and boulders, to hurl themselves into the valley below. Great bushes of dog-roses and tamarisk-trees lined the banks. We climbed higher and higher, and finally halted to rest in the dense jungle, by a clear mountain pool, in the sunshine, and ate our lunch. We had another climb before us in order to reach the plateau of the Khardong village. We had

already caught a glimpse of several *chortens* from a distance, and as we came nearer we saw the green fields, which stood out markedly from the barren rocks.

We arrived some time before the caravan at the village, the inhabitants of which seemed very friendly. The best *chang* was brought to us from the monastery, which we liked but which made us feel very sleepy. We did not stay here long, as we heard a fanfare of trumpets and the beating of drums from the valley. We soon saw a band of riders accompanying a High Lama, the small Skushok of Spitok, to his monastery. The young priest, a boy of thirteen years, was clothed in a red-and-yellow silk robe, and his golden hat gleamed in the sun as he made his way up to the monastery, while a man ran in front waving a censer filled with incense, the whole scene being most impressive. We made but little progress the next day. We reached the foot of the Khardong Pass at about midday by working our way along the right side of the valley, over green fields and areas covered with moraines. We pitched our tents here, at the foot of the pass, because the last part of the way led over snow-fields and would take at least three hours. In the course of the afternoon other caravans arrived. There were numbers of marmots all round our camp, whose shrill whistles echoed all round the valley. De Terra succeeded in shooting a fairly large specimen of these animals. A *chuprassi* arrived with the news that the British Joint-Commissioner was just outside Leh and was inspecting the posts.

We again had to start early on 17th August. I led

the party, armed with an ice axe, for the ascent to the Khardong Pass, 17,400 feet; leads over stony slopes and rocks. Fresh snow had fallen during the last few days and the whole of this side of the pass was covered with snow. Just as we were about to start the ascent we saw the British Joint-Commissioner, his wife and their suite. Captain Sinclair greeted us, and expressed the hope that he would see us again in Leh, so that we could compare notes about our various recent experiences. A small path had been trodden out by the caravan animals on this snowy slope, and it was therefore quite easy to make our way. We reached the summit of the pass safely and were rewarded with a panoramic view over the Indus valley, Leh, and the mountains behind. There was a great deal of commotion here as one of the bonfire posts had been installed. In the meantime another order had been issued and each station was to be given a red-and-white flag. The bonfire system was not very reliable, for if the weather was bad and the clouds hung low over the valleys the posts would be unable to see each other. The signal was to be given by runners if visibility was too bad. A long descent over stones and moraine deposits brought us to the first fields and houses. It was very hot in the sun, but in spite of this we hurried on to Leh, which for us meant civilisation. We passed the village of Gangles, a large *chorten* and a small monastery. We met several yak- and horse-caravans, laden with firewood, on their way to the Khardong Pass.

We entered the bazaar at Leh at midday. We had

intended going straight to the rest-house, but as we were passing Colonel Berry's house he saw us and asked us in. He gave us each a glass of beer, which had never before tasted so good. We then had an excellent lunch, which we much appreciated. Our worthy Habiba had been somewhat remiss of late in his culinary efforts, so we were particularly grateful for this kind invitation. We next called on Bishop Peter, who welcomed us and handed us a large mail. The Reverend Mr Kunicke and his wife had gone to Khalatase, so their bungalow was empty and at our disposal. Our expedition was virtually at an end now we had arrived in Leh, as the journey from Leh to Kashmir was child's play compared to our other travels. We shall never forget those days we spent in the old capital of Western Tibet and which passed only too quickly. We were very happy in our small bungalow. The flowers were all out in the garden and one was able to drink the fresh spring water without fear. We had much to do in the way of photographic work, for we had to develop our photographs and then take prints of the best in order to complete our collection. We also had to settle up with the caravan *bashi* and the Turki servants. We had great difficulty in getting rid of the Haji, for he, no doubt, was thinking of his return journey across the mountains.

Our old servants, Habibullah, Juma and Subhana, appeared and presented us with some apples, and the relatives of the two men who had died came and received further compensation. We discovered some interesting books in the missionary library, and

we spent many pleasant hours comparing notes with Bishop Peter. We also received great hospitality from the British Joint-Commissioner and his wife at the Residency, where we met other European visitors, who told us of their experiences. The days flew by, and on 30th August our new caravan appeared in the courtyard of the Mission Station ready to start. Bishop Peter accompanied us a short distance on our way to the Indus valley. We left the picturesque monastery of Spitok on our left, and then passed across a stony plateau down the valley. I have already described this part of the road in the early part of the book, so I will content myself by merely telling of our visit to the great monasteries of Basgo and Lamayuru.

In all Lamaist countries, particularly in Tibet, Ladakh, and several Himalayan districts, no other phrase crops up so repeatedly as the religious formula, "*Om mani padmi hum,*" and it is almost impossible to imagine Tibet without it. It governs the life of a Tibetan from the cradle to the grave. Every traveller who has visited the Land of the Lamas has referred to the phrase, but it is rarely that anyone explains its real meaning. We must refer to earlier works if we wish to know something about the origin. Koeppen's work on Buddhism and Lamaism, which was published in 1859, is still to-day the reference work for the mythology of Lamaism. He, writing on this incantation, says: "According to those who are believers in the Faith, it is the essence of all religion, knowledge and revelation, the way to salvation and the gate to Heaven. The six syllables sum up the beliefs of all Buddhists ;

they are the root of all learning, the Holy of Holies; they are the guide of all reincarnated beings in a higher world, the gateway which is closed to all who are wicked, the light enlightening the darkness, the brave Conqueror of the five evils, the sea of fire destroying all sins, the hammer breaking to pieces all fetters, the friend who will convert the inhabitants of the realm of the snows." In earlier times the formula was literally translated as meaning: "O Thou who dwellest in the lotus leaf"—and "Thou" referred to Bodhisatva Avalokiteshvara, or Tschenresig. He is to-day reincarnated in the form of the Dalai Lama, for he returns to our earth to save mankind. As these six sacred syllables indirectly refer to him or to his Sakti goddess (the wifely energy of the Bodhisatva Avalokiteshvara), and as we see him depicted with eleven heads and a thousand hands, we will proceed to study the legendary history of the original of these forms of portraying him.

We find in a Tibetan work, *Mani Kabum*, which is ascribed to the first King of Tibet, Srongsang Gampo, A.D. 700, but which is probably of an earlier date, how the famous Chenrezig was created from a white ray of light which came from the left eye of the Dhyani Buddha Amithaba or Wopagmed. When this ray encountered a surface of water a lotus-flower appeared, in which was the youthful Bodhisatva Avalokiteshvara. He witnessed the unhappiness of the world and found its inhabitants living in sin and distressed, roaming about in the darkness of uncertainty and suffering from pride and arrogance. He then began to weep, and from

the tears which flowed from his left eye was created the goddess Drolma, and from those which flowed from his right eye came the goddess Tronza, who were to help him in his difficult task. At one time Chenrezig said to his spiritual father, the Dhyani Buddha Amithaba : " I wish to lead every creature to the highest and fullest light, but if I do not succeed, take my skull and break it in ten pieces." Six rays of light suddenly appeared from his body, which penetrated into the six inhabited regions of the world—namely, the gods, the half-gods, men, animals, the spirits, hell. Each ray was at the same time to be the salvation of the particular world ; but when Chenrezig ascended the Sumuru mountain he saw that he had not succeeded in his task, and his skull burst into many fragments with grief. His father collected these fragments and made eleven heads. According to his wish, Chenrezig was granted a thousand hands, each of which possessed an eye. Whether these thousand eyes did in fact watch and exercise powers of observation or not, the fact remains that the salvation of the world did not take place. According to Tibetan versions, Wopagmed then gave him the six syllables, by means of which those who repeated them should be eligible for reincarnation. Each of these syllables represents one of the six realms, to any of which the soul may be attached in its new life.

The exclamation *om*, according to Koeppen, nullifies the tortures of those about to be born or die among the gods ; *ma* nullifies the perils of fighting among the half-gods ; *ni*, the tortures of those about to be born, of old people, and the sick and dying ; *pad*, the tortures

of hunting and pursuit of wild animals ; *mi*, the hunger and thirst of the spirits ; *hum*, the torture of the hot and cold regions ; while *om* is the benediction of self-devotion and renunciation. Whoever bears in mind this formula, and realises the meaning of the transmigration of souls and reincarnation, will be able to understand Lamaists and the Land of the Lamas. Anyone who studies the mythology of Lamaism will comprehend many things in the lives of the monks which otherwise are incomprehensible, and will as time goes on realise the real meaning, and will soon be able to form an idea of the position which any deity of Lamaism has in the Lamaistic Pantheon. According to the researches of Francke and Thomas, this incantation has a more narrow meaning—namely, it is an invocation of a goddess, *Mani Padmi*, the so-called Sakti of the Avalokiteshvara, and, according to Francke, these six syllables are the translated formula of refuge of the pre-Buddhist Bonzo priests.

Tibetan monasteries always have something mysterious about them. The Lama who conducted us over the monastery opened the great wooden door of the *dukang*, or hall of the gods, and at first it was impossible to see anything through the gloom. Small oil-lamps flickering before the images of the gods were the only light-givers, as no rays of light penetrated from above through an airshaft which was draped with many curtains. During the hot periods of the year the butter in the large open lamps becomes rancid, and this naturally creates an almost unbearable smell in a monastery. In the monasteries of Ladakh the statue of the founder of

the monasteries fills an important place in the *dukang*. There is a large one of Staksen Raspa in each of the monasteries of Hemis and Chimrel. Many of the praying-rooms are like lumber-rooms, in which every kind of rubbish is to be found, but in any case the darkness makes it impossible to see the dirt and dust which lie in every nook and cranny. Besides the statues and the flags we saw bells and drums, as well as richly carved *chortens*, in which are placed the sacred remains of the Skushoks.

We could not help marvelling at the highly decorative door and façades, showing Chinese influence. This is also noticeable in the paintings on the walls, where the much-favoured colours of red and blue of Tibetan art are conspicuous. The walls of the praying-room are nearly always decorated with paintings, which the Buddhist and Lama priests showed us. A representation of the life-wheel is never missing in any monastery. If the drawings differ from one another individually the main arrangement is always the same. Such a wheel of life is intended to represent to the layman the results of birth, death and reincarnation. The demon who holds the large disc of the wheel is the King of the Dead. In the inmost circle of the wheel are a pigeon, a pig and a snake, which symbolise the soul of lust, stupidity and hate. In the outer circle are depicted scenes of everyday life, such as a blind man walking with a staff, a potter, a pregnant woman, an old man carrying a dead body, all representing reincarnated lives. The parts divided by the six spokes show the various worlds into which the souls of the newly born

may arrive. The one above the centre is supposed to represent the kingdom of the gods. To the right is the kingdom of the half-gods, who are always at variance with the gods, for though the tree of knowledge grows on their territory, yet the fruit hangs within the reach of the gods, and it is only they who can eat of this tree. To the left of the gods the artist has created a picture of a world of men, while in the lower three divisions are portrayed the animal world, the spirits and the Buddhist hell. He has been particularly successful in illustrating the punishments of hell, and many of these harrowing representations cannot fail to make an impression on the mind.

We had seen before, in May 1927, the beautiful wall-paintings of the picturesque Basgo monastery, but we took the opportunity on our return of making a more thorough study of this tumble-down monastery. There are two praying-halls which are worthy of attention; in both the big gilded statues of the Chamba, or the Buddha Maitreya, which are both nearly one hundred feet high, are a sight not to be missed. The small figures of the Tara, the Padmasambhava and the Chenrezig are well designed. On two sides of one of the halls were the books containing all the sacred writings of the Kandjur and Tandjur. The walls of the older monasteries, which were situated on higher ground, were covered with paintings depicting scenes from the life-history of the Buddha.

We found in the numerous terraces at Saspul, on the right bank of the Indus, some caves in which were several well-preserved paintings, small pictures of

Gurus, Lamas and Lamaist symbols. These were well executed in soft colours on a stucco-like background. The eyes, nose and mouth, as well as the other features, had in reality been done with a feather. The way in which they had been painted reminded me of the old paintings from the Khadalik ruins and the pictures of the cloister of Tankse. Each figure had been designed individually, and it was not a case of stencilled work. There was one cave in which there were other curious pictures. Near a representation of the wheel of life I discovered, in the back of a niche, the blue-painted figure of a demon of Dhamapalla, part of which had been, unfortunately, destroyed. On the small walls of the niches I saw some peculiar figures of men and animals very clearly done, resembling the small paintings which we had seen in the Tankse monastery. A small Garuda and a penitent sitting in a queer hood were quite inconsistent with Lamaist paintings. The individual subjects had been painted over the whole wall like Persian miniatures, and we also noticed below some mythological animals like leopards, and several small Buddhas.

On 3rd September we once again climbed up through the pretty Hangru ravine to the big Lamayuru monastery, where we stayed a whole day in order to study the topography and geology of the district and to have a better look at the monastery. The great yellow heaps of gravel, which are piled up in this hollow in queer mounds, look like old castles and forts. This enormous monastery has certain praying-halls which are noteworthy, and in which are also some

old paintings. The life-size figure of the Chenrezig, with its eleven heads and thousand hands, is well worth seeing. At the foot of the monastery one can see the miserable remains of an ancient Bonpo temple where it is still possible to see traces of the painted walls. The most preserved of these old ruins were some decorated wooden beams which formed part of the roof, most of which had fallen in.

At Mulbekh we left with regret the Land of the Lamas, which has many more interesting features than countries where Mohammedanism is prevalent. We heard first in Kargil of the catastrophe which had happened just before our arrival. When we left Kargil for Shimsha Kharbu we saw signs of the disaster, for great masses of stone and earth had been pushed down the side valley into the main valley. Several bridges on the way to Srinagar had been washed away by the floods of the mountain rivers, but in important places improvised ones had been erected.

Once again we stood on the summit of the Zoji La, on 13th September. What a different scene lay before us from that of eighteen months before, for there was now no sign of snow and the weather was warm and pleasant. The lower path was completely blocked by landslides and mountain torrents, and for that reason caravans were all taking the upper path. In places it was possible to see traces of glacial erosion, proving that at one time, during the ice age, a glacier had flowed over the Zoji La into the Sind valley. Suddenly we were able to get a fine view of the pine-woods in the valley. We reached Gandarbal after five days. We

had previously ordered in Dras a *shikara*, or boat, which was in fact ready when we arrived.

On the morning of 18th September we set off across the blue waters of the Dal Lake to Srinagar, arriving at noon, when we went straight to Nedou's Hotel. Our task now was to make ourselves presentable for civilisation. We were unable to leave our rooms for a few days while the tailor was making us some suitable clothes to wear. The caravan people were paid off and sent back, our baggage was overhauled, and we sold our tent and the kitchen utensils. We also bade farewell here to Habiba, who had been so invaluable, and gave him Kurrum as a present. We passed several very pleasant weeks on our houseboat, to which we migrated from the hotel in order to recover from the worries of the journey. Our English friends did everything they could to make our stay as comfortable as possible, and we shall not forget those days in Kashmir.

We were very pleased indeed to have the opportunity of meeting Sir Aurel Stein. He had pitched his tent in a small garden by the Nishat Bagh, far from the life and noise of Srinagar. He is one of the few men of whom one stands in awe when one thinks of what he has done towards the advancement of the geographical and archæological knowledge of Central Asia. It is much to be regretted that his famous travel books have not appeared in a German edition and thereby found a wider circle of readers in that country.

The days had passed all too quickly in the happy vale of Kashmir when one morning the car appeared, ready to take us across the foothills of the Himalayas

to Rawalpindi, where we were to join the railway. Once again we saw the mighty snow-peaks of the Himalayas, the most prominent of which, the 26,620 feet ice peak of Nanga Parbat, stood out, bathed in the morning rays of the sun. We again had a peep up the Sind valley. For over a year and a half we had trusted ourselves to this mountain world, and to the deserts as well as to the inhabitants of Central Asia. We had come to like them and appreciate them as much as our own people, and to-day our thoughts still wander to the land where we passed some of the happiest days of our life.

APPENDIX

APPENDIX

Scientific Results of the Expedition

THE immense amount of topographical work carried out by earlier travellers in Central Asia during the last thirty years has to-day given us an extensive knowledge of the general topography of these regions. A glance, however, at the 1:1,000,000 map of Tibet will reveal many small unmapped areas which still await the tread of the explorer and the plane-table of the surveyor. Men in earlier times were lured by the call of the unknown. The word "unexplored" on a map was sufficient to attract a traveller who was content merely to map the region, thinking then that he had done all the scientific work necessary. Exploration and scientific research do not, however, mean only the penetrating of regions which have never been trodden by any European. The majority of Sven Hedin's long journeys fall into this category, for the main results consisted of extensive topographical work. As time went on, travellers extended their activities, turning their attention to geological, morphological, glaciological and archaeological problems. Among these were Thomson, Drew and Godwin Austen, but topography was always the main object of their work.

The chief aim of my expedition was to study the geology and morphology of the regions traversed, and

topography was of secondary importance, only to be done where the existing maps were either insufficient or proved unreliable. My companion, Doctor de Terra, who undertook the geological investigations, was very successful in his work. He paid particular attention to the age of the unfolding of the Kara-koram and Kunlun ranges. He made a thorough geological survey of the route traversed, and has been able to combine his results with those of Stoliczka and Bogdanowitsch. The wide distribution of cretaceous sediments containing marine and plant fossils on the Lingzitang and Aksai Chin is especially noteworthy. These cretaceous deposits, which were deeply affected by the younger tectonic disturbances, are covered by tertiary land deposits of red sandstone.

I myself paid special attention to the glaciology of the regions through which we passed.¹ Professor Dainelli, the geologist of the Italian Kara-koram Expedition of Sir Filippo de Filippi, has shown that during the glacial period vast regions of the Upper Indus valley, as well as of the main Kara-koram ranges, were buried under snow and ice, and that large glacier streams filled the valleys of the Shyok, Nubra and Upper Indus.

I am able to establish from my observations that the western Kunluns during the ice age also had been extensively glaciated, and that the snow-line was approximately 950 to 1700 feet lower compared with the present snowline. The higher mountain

¹ *Geographical Journal*, vol. lxxv., pp. 225-232: "The Ice Age on the Tibetan Plateau and the Adjacent Regions."

ranges on the Tibetan plateau were also at one time much more glaciated. The traveller often sees the remains of old moraine walls. We do not find this in the arid central regions, where all traces of former glacial action have been destroyed by the strong disintegration of the rocks which has taken place. There are no glacier striæ to be found and no *roches moutonnées* to be seen. We cannot therefore say positively whether the large plateau areas like the Lingzitang and Aksai Chin were formerly also covered by ice. It is, however, very probable that, during the earlier glacial period, when the glaciers covered a much larger area, all the higher ranges in the central region were also the home of bigger glaciers. Sir Henry Hayden, when speaking of the former glaciation of the Himalayan mountains, has already said: "The small glaciers on the northern side of these mountains are but the shrunken relics of what must once have been a great ice sheet almost completely covering the slopes of the culminating range of the Himalayas and extending far into the neighbouring plains and valleys."

The lakes of Tibet owe their existence, at any rate in part, to the glacial period. Lake basins like that of the Pangong Lake were excavated by glaciers of the glacial period in a depression. The water filled the basins and depressions when the ice melted. In general, I could state that the lakes on the plateau which we saw were all in a state of shrinkage. Nearly all lakes are surrounded by strand terraces and old shore-lines. Sections which we studied showed us that there were clearly two periods of high-level water

separated by a period when the surface of the lakes had shrunk considerably.

All recent researches tend to show that at least during the glacial period the high mountainous regions of Central Asia were situated at a lower altitude, allowing the monsoon clouds to penetrate deeper into the heart of Asia than nowadays. We cannot state yet exactly to what extent these regions have been elevated, but it is probable that the amount of uplift lies perhaps between 500 and 1000 yards. Some explorers even believe that these regions are still rising to-day. We can recognise in many places the old denudated land surfaces. Remains of these old denudated and eroded land surfaces can be seen on the southern slopes of the Himalayas, as well as in the northern foothill regions of the Kunluns. Our explorations are still in their infancy, and we are not yet justified in saying that the whole mountainous region of the Himalayas, Tibet, the Karakorams and the Kunluns once showed a plateau-like character, which was destroyed by younger uplifts. The more we study the geology and the morphology of these regions the more will we be able to see what processes have taken place here and are responsible for the present configuration of these parts of Central Asia.

I have already had occasion to call attention to the geological and physiographical events connected with the younger geological history of the Tarim basin of Chinese Turkistan. I have evidence and data to establish that the sand-dunes of the large Taklamakan desert are resting either on the bed of an old inland lake, the

last remnant of which is the Lobnor, or on clay terraces formed by great rivers emptying themselves into the Tarim basin. Occasionally these rivers overflowed, spreading their mud deposits over large areas of the country. It is clear that the last of these inundations took place in historical times, as we find that, in the Khotan region, the old culture stratæ of the third to the fifth century are buried below the stratified clay deposits. Judging from my own observations I believe that the age of the present Taklamakan desert is not very great, and I think that some three thousand years ago the country presented quite a different appearance. The Neolithic implements which were found in various places by Sir Aurel Stein prove that Neolithic settlements existed where to-day we only find bare desert. The dead poplar-trees which were conspicuous everywhere on the edge of the Taklamakan show that the conditions of living must have altered.

Much has been written on the subject of the desiccation of Central Asia. There can be no doubt that some two thousand years ago several of the rivers coming down from the high mountains fringing the Tarim basin penetrated farther into the desert. The Niya river was about seventy miles longer, and the Keriya river, which is now gradually drying up in the sands, very probably at one time reached the Tarim basin. What was the cause of the decrease in the volume of water which used to flow in these rivers? The best answer to give at present is that we do not yet know. It will only be possible, with very exact observations covering long periods of time, for us in the future to state whether

there has been any substantial decrease in the rainfall or in the size of the glaciers. The more evidence we obtain to show that the mountainous regions of Central Asia have risen since the glacial epoch the more probable it is that the rainfall really was at one time greater, because, by the uplifting, the rain-bringing monsoon clouds were more and more cut off. Sir Henry Hayden has already laid great stress on this process.

The lakes on the Tibetan plateau formerly covered a much larger area. The larger area of these lakes was caused by the melting of the glaciers and ice masses of the last glacial period. The more these ice masses melted the less became the volume of water running into the lakes. The theory has been advanced that, some three thousand years ago, there was still ice left from the last glacial period, especially on the high plateaux and mountain ranges bordering the Tarim basin, and that these ice reserves have now melted. This theory, which has been put forward by Burrard and Rickmers, and which has also been accepted by Sir Aurel Stein, certainly deserves careful consideration. At least one thing seems certain, and that is that the rainfall in the Tarim basin itself cannot have been much greater, as otherwise the manuscripts and wall-paintings in the old Buddhist ruins would have been destroyed by the moisture. On the other hand, we might attribute the cause of the shrinkage of lakes and rivers to the fact that the ablation of glaciers and snows was formerly greater than now, so that the rivers then received more water. There is no doubt that the desiccation of Central Asia is one of the most difficult

problems that awaits solution in this part of the world. It will be possible only after extensive research to say definitely whether a desiccation is really in process or not.

I can give only a very short résumé of the scientific results of the Expedition, and the problems which we have to consider in these regions of Central Asia. A detailed account, however, of the scientific results of the Expedition in German is at present in the press, and I refer my readers to this work.

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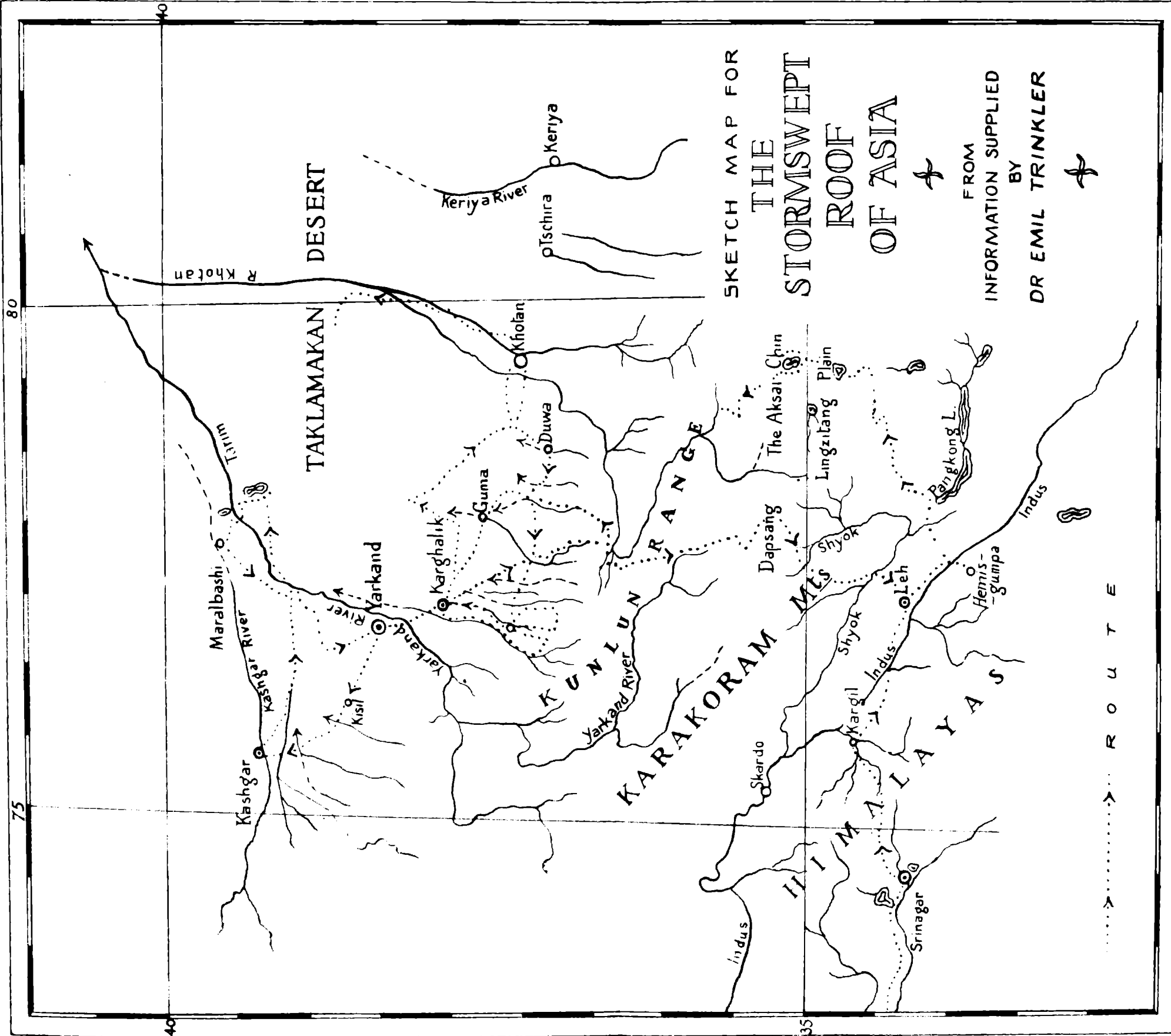
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SKETCH MAP FOR
**THE
 STORMSWEEP
 ROOF
 OF ASIA**

FROM
 INFORMATION SUPPLIED
 BY
DR EMIL TRINKLER



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