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# TRAVELS AND ARCHAEOLOGICAL FIELD-WORK IN MONGOLIA AND SINKIANG — A DIARY OF THE YEARS 1927—1934

BY

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# THE 1927 EXPEDITION THROUGH MONGOLIA

In the beginning of January 1927 I received an offer that was as gratifying as it was unexpected, over the telephone. The speaker was Dr S. CURMAN, the King's Custodian of Antiquities, who asked me if I would be prepared to leave for China to take part as archaeologist in a big expedition to the interior of Asia under the leadership of Dr SVEN HEDIN. The expedition would take a year and a half. Meantime, I did not need to commit myself at once; I might first make further enquiries about the undertaking. I did so; but I was twenty-four years old, and my answer was a foregone conclusion.

At the end of the month I met the other Swedish members in Berlin: ERIK NORIN, the geologist, and DAVID HUMMEL, our medico, as well as the Germans W. HAUDE, C. HEMPEL and H. DETTMANN. We arrived in Peking on February 12th, via Riga, Moscow and the trans-Siberian railway over Mukden. Dr HEDIN and Prof. JOHAN GUNNAR ANDERSSON met us at the station. During this first month's stay in Peking the latter saw to my excavating equipment and did all he could to make me familiar with the new milieu.

The reason why an archaeologist was to join the expedition was the following.

In the beginning of the 1920's Professor J. G. ANDERSSON had made magnificent and completely epoch-making archaeological discoveries in the provinces of Honan, Kansu and Kuku-nor. Through these discoveries he gave to China's prehistory, that had thitherto been practically unknown, six successive periods, ranging from the later part of the stone age to the beginning of the iron age. Especially his second period, Yang-shao, proved to represent a flourishing of the potter's art that could vie with that of any of the tops in the development curves of the known civilizations. He had let the curtain go up for the fascinating and colourful drama of China's late stone age and its painted pottery.

The unsuspectedly rich fields of research that were opened up by his discoveries and investigations were for European notions overwhelming in their geographical scope alone. As the problems then presented themselves the older of these cultures seemed to be bounded by the Yellow Sea in the east and the Black Sea in the west. The distance between the nearest situated finding-places for painted pottery

in the east and the west, or between Kuku-nor and Anau, was about 3,850 km. SVEN HEDIN's old field of research, Eastern Turkistan, might in view of its geographical position be expected to have played an important rôle in the assumed connections between the Far East and the Near East during the stone age; and it would thus be of great importance to throw some light on the prehistory of this vast province. The archaeological investigations that had thus far been carried out there had dealt entirely with historical periods, especially with the advance of Buddhism and Buddhist art on its way from India to China. As regards the archaeology of Inner Mongolia, this was a completely unwritten chapter. It might, certainly, be expected that the finds would be more or less similar to those that the archaeologists of the ANDREWS Expedition had made in the desert tracts of Outer Mongolia; but there was of course nothing to guarantee that this would be the case.

I thus had the privilege of beginning a practically virgin field of work; but I had at the same time the disadvantage of being unfamiliar with both the country and the people, and of possessing an extremely slight knowledge of the cultures that I was to meet.

### *The caravan journey to the Edsen-gol*

On March 23rd I left for Pao-t'ou with the main group of the expedition. We were occupied with packing and preparations in this border-town until the caravan journey could finally be embarked upon on May 20th under Dr HEDIN's personal leadership. Just outside the walls of Pao-t'ou, during this period of waiting, a stone age site was discovered in a field. It yielded finds of flint points and small painted potsherds. This seemed a promising start.

At Camp VIII, Khujirtu-gol, on the Mongolian plateau, the scattered groups of the expedition were assembled for a couple of days. This was the sole occasion on which the great expedition was represented down to the last man in one place. We were of course far too many for it to be practicable to keep together in the sequel. And altogether, things would have been considerably easier if the caravan had been much, much smaller. With NORIN and the geologist TING I set off on May 31st eastwards to Batu-khalagh-sume,[1] the main temple in Darkhan-beile, where I commenced my field-work proper. Pretty soon I had found the first site for stone age tools near the stream Aibaghin-gol, that flows past the temple town. The absence of cultural deposits was surprising; all the finds lay on or just under the surface. This proved, however, to be characteristic throughout for the Mongolian stone age sites. The explanation of the phenomenon

[1] In STIELER's Atlas, which is here founded on Russian sources, it is marked as Batchalün-kurö, and in The Times Atlas, accordingly, Batkhalyn-Kure. We usually called the temple Beli-miao. Cf. foot-note on p. 76 in Part I of The History of the Expedition.

is that the erosion in these parts of Mongolia now has the upper hand, in consequence of the sparsity of vegetation, and the only accumulations occurring (apart from the sedimentation in the terminal basins) are sand-dunes.

A couple of stone graves were excavated without other result than the discovery of a few sheep's bones in one of them. Similar graves of several different types (see Fig. 1) proved to be very common — they are frequently found in groups constituting smaller burial grounds — the whole way to Shande-miao. To the west of this place I saw only a few single graves; the westernmost one at Hoyar-amatu.

We then slowly approached the main camp again, doing what field-work we could on the way, and I found some more prehistoric sites. Altogether, NORIN and I had seven camping-places. On June 21st we returned to camp VIII, where we remained until July 1st. During this time NORIN planned a triangulation of the country in the immediate vicinity of the caravan route we were to follow to the west. Major HEYDER was to accompany him to help him with the theodolite, and MASSENBACH and TING were also detached to our column. We set off northwards at first, to the hill Bayan-bogdo (camp 9)[1], which was the highest point in the tract. On a rich site from the stone age quite near the camp I found also iron concretions, and NORIN discovered that the »Rich Ruler» was iron ore bearing.

The sojourn at Khujirtu, and especially the excursions in the surrounding tracts, were useful as a transition from civilization to the simple camp life, that as time went on became increasingly primitive. I thoroughly enjoyed dwelling in an airy tent, and the freedom of the life in the open air. The only thing that in the increasing summer heat we who were unaccustomed to Asiatic conditions found difficult, was to get out of the habit of quenching our thirst with cold drinks. In China and in the inhabited parts of Mongolia a foreigner never dares to drink unboiled water; and in Mongolia it was pretty hopeless to try and cool the water that had been sterilized by boiling. We might thank our lucky stars that we were not Americans, and used to ice-water! Later on, however, we learned to appreciate the customs of the country, and drank hot tea on all possible and impossible occasions. Though it may be admitted that coffee was preferred at tea-time, as long as our supply lasted.

At first one also missed potatoes, but in time one became a confirmed rice-eater. For the rest, the composition of the menu did not offer any serious problems; as long as we had plenty of mutton we were satisfied, for the work in the open air or a long day's march gave us a roaring appetite.

The great herds of antelopes on the steppes around the Khujirtu-gol and Beli-miao were a delight for the eye. In the first big, swarming herd I saw I could

[1] During the expedition of 1927 HEDIN employed Roman numerals for his camp numbers, as appears, moreover, from his »History», Part I. I myself employed Arabic numerals.

count at least 250 animals from a point of vantage behind the crest of a hill. These were Gazella gutturosa (the goitered gazelle). Other members of the expedition claim to have seen thousands in a single herd. The young were born in the beginning of June; and it was probably to protect these from wolves and dogs that the animals kept together in such huge herds.

In these easterly parts of Mongolia, where the grass is still fairly plentiful, large herds of the small Mongolian ponies also grazed, with their long fluttering manes and with tails that swept the ground. Sometimes one saw piebald horses, white and red-brown; the effect was rather queer.

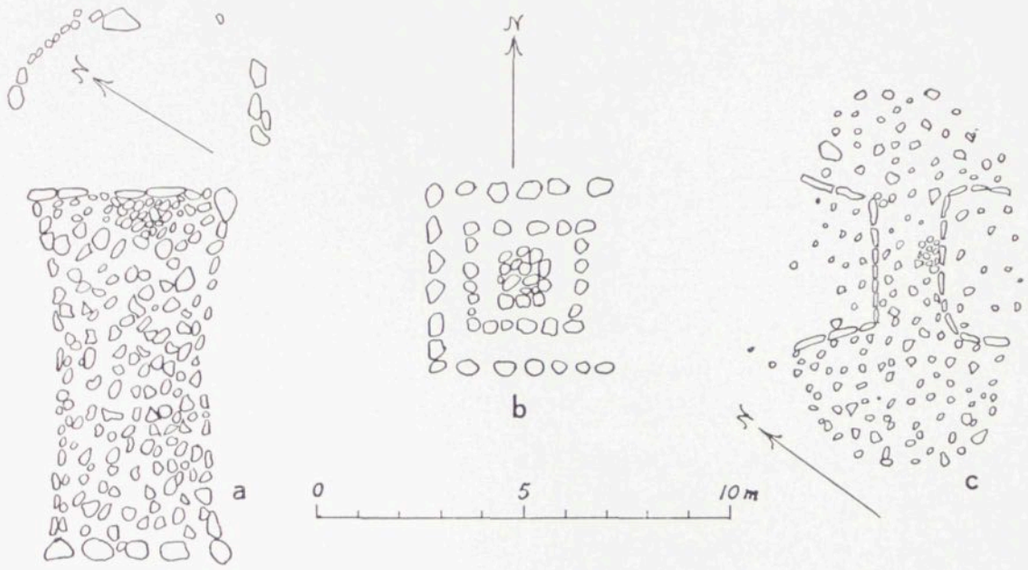



Fig. 1. Three types of Mongolian stone graves. a and b near Beli-miao, c in the valley of the Chugungtai-gol (Yang-chang-tze-ku)

NORIN had experience of travelling and working in China and spoke a tolerable pidgin-Chinese; in Mongolia we were all greenhorns, even the Chinese geologist.

We now moved westward, passed to the south of a little temple, whose name I never heard, and pitched camp 11 near the little temple Shara-chölo-sume. Camp 12 was at Chaghan-obo-sume, situated just to the north of Daghain-sume. All these small lama temples lay within Mu-mingghan or Mingghan-jasak. At each camping-place and in the surroundings I found remains of smallish stone age sites as well as graves from younger times.

Quite near camp 13, not far from the spring Ikhe-buluk and the hill Ulan-obo, I discovered for the first time traces of an ancient wall or rampart constructed of earth, or earth and stone, though very low and insignificant. On the way up from Pao-t'ou to Khujirtu-gol we had crossed a stone wall in the Sheiten-ula, the northernmost of the two mountain chains that here form the edge of the Mongol-

ian plateau. On a later journey I was to investigate these walls outside the Great Wall.

In this camp we were joined by the tall, cheerful, blond 23-year old GEORG SÖDERBOM, who was to serve as caravan leader and interpreter. Here our caravan was also joined by a big dog of an extraordinarily long-haired species. On account of his seeming strength and splendid size, we Swedes christened him »Snaps» (Schnaps). That he would turn out to be rather a harmless beast, indeed even cowardly, we had no means of knowing, but he generally frightened people by his mere appearance. On Pl. 20 c he looks rather like a hunting-dog, but nothing could be farther from the truth. No dog spoiled so many antelope-hunts for me as just this Snaps.

Near Bulung-khuduk there was a double stone grave with two so-called baba-stones, the first I had seen in Mongolia. Excavation was unfortunately out of the question, owing to the unwillingness of the local Mongols to allow anyone to dig in the earth. The Mongols asserted that there was silver in such graves.

From Bulung-khuduk we proceeded southwards towards the big caravan road, following this through Liu-tao-ku and Yang-chang-tze-ku.[1] On leaving the granite country with its low hills behind, we turned north once more, camping in the mouth of a dried-up river to the east of the little temple Burkhantei-sume. We had now left Mu-mingghan, marched through the narrow Dzun-gung, and found ourselves in the extensive Dunda-gung or the region of the Middle Duke. The soldiers of this potentate sometimes hung round us like flies, and GEORG had his hands full, entertaining them, offering them tea and cigarettes and explaining our curious interest in all obos and mountain peaks — the former were used by HEYDER as fix-points for his triangulation; and sometimes he built new stone mounds on peaks that had previously lacked such. The slowness of our advance (daily marches of at most 15 km and a couple of days' stay at each camp) also contributed to quicken the inquisitiveness with which they already regarded the strange foreigners.

With Prof. YUAN, who also had his own caravan, we had arranged a division of labour according to which he was to work to the south of the caravan route while we worked to the north of it. For the sake of the triangulation, however, we had to pitch our next camp south of the road, near the small box-shaped basalt hill Abdar. The ground was here in some places strewn with chalcedony, agate and other flint-like stones, and it was not long before we began to find chips and tools made from these materials.

The next camp was once more north of the road, at Khadain-ul, where also flint tools on several sites as well as stone graves were found. On August 2nd we pitched camp at the foot of the hills at the old temple Shire-sume, situated within

[1] A finding-place for flint artifacts in Yang-chang-tze-ku is reproduced in Vol. XI: 2 of this series on Pl. I: 1.

the first dome of sharp-pointed volcanic rocks that form a very picturesque part of a plateau cut up by deep valleys (Pl. 1 a). A little to the west of the old temple lies the new lamasery, dazzlingly white and well-kept (Pl. 1 b). Rich stone age finds were made near the old temple and the big obo Deldigen-obo, the latter situated out on the plain. All these finds seemed to belong to one and the same culture, probably of late neolithic age.

On August 3rd we were surprised by the most violent storm that I ever experienced in Asia. The rain simply came down in sheets, filling all the dry stream-beds and turning them into torrents. The whole ground was afloat, as it were, with water; and the hail pelted against the tents till we were afraid the canvas would give way. Everything was soaked, even in the tents, and creeping to bed that evening was not a very pleasant business. But the following day the sun was blazing, and our drenched belongings soon dried. That same day we were caught up by Dr HEDIN with the main caravan; they had not broken up from the region of camp VIII until July 29 th. The last strings in the long procession of camels cut up rough just below our camp, flinging off their loads and taking to their heels. When they had been rounded up and brought back, HUMMEL and HASLUND decided to stay with us overnight, while Dr HEDIN continued to the Hailutain-gol. There, in the course of the next few days, the scattered detachments assembled. This was HEDIN's camp XIII, and was the scene of conferences lasting some days. The main caravan continued on August 9th, and after this it marched ahead of us the whole way to the Edsen-gol.

Our next camp was situated at Gechik-khuduk, north-east of Khongkhor-obo. Nearer this stately, black obo-hill, my digger, CHIN, discovered one of the most promising sites that we had come across in the steppe region. The material consisted of both flint and greenstone tools made with considerable technical skill, as well as some pottery. I found the best site of all just as we were about to break camp and continue westwards, so the work of collection was rather incomplete this time. Fortunately I returned to this place one and a half years later (Plate 2 a).

We encamped first out on the wide steppe, within sight of Dedshilin-sume, and afterwards in among the rather high Barkha mountains to the south of the road where the little temple Ibelin-sume is situated. It was here that HEYDER shot the first, and I believe only, *kuku-yaman* (*Pseudovis nahoor*) during the whole of this expedition. He also included argali in his bag, and the list of antelopes that he accounted for became really formidable in time. Once he achieved the astonishing feat of killing three antelopes with a single bullet.

The next place we arrived at was Tabun-tologoi, that also lies to the south of the actual road but quite near Khashiatu. From here we proceeded to Murguchik,[1]

[1] LATTIMORE in "The Desert Road to Turkistan" has a picture of the hills at Murguchik (he writes Morhgujing) facing page 64.

where Jao-lu or The Winding Road begins. Here in the vicinity lived the Middle Duke (DUNDA GUNG), who sent an official to us to buy a pistol, a transaction that we were naturally obliged politely to refuse.

It was at this camp that the latterly increasingly serious trouble with NORIN's old cook culminated. The cook, who was a Shansi Mohammedan who had previously been in NORIN's employ, simply cleared off southward to the Chinese settlements in the northern Ordos, whence he returned to his home in Shansi. NORIN's coolie WANG took his place. He had never set eyes on a foreigner before meeting us at Batu-khalagh-sume. He was the dirtiest and sweatiest individual one could well imagine. But we got our dinner that day too, even if it was a good deal later than usual. And the following days likewise. WANG had evidently picked up a few notions as to foreign cookery from the old cook; and GEORG was always able and ready to lend a hand.

Between Murguchik and the next camp, Lao-hu-k'ou-tze, we passed a big obo built in two terraces, up to which led strings of smaller stone mounds. Curiously enough, it lay on rather flat ground, although there were hills in the vicinity. To the west of the obo the road crossed a watershed. From here the mountains in the south looked really imposing; they comprised the northernmost parts of the Lang-shan.

Around the camp in the mouth of the Tiger Valley there were one large and rich stone age site and several smaller ones, as well as burial grounds with beautiful stone graves.

We then followed the road through the Tiger Valley,[1] which was stony and narrow and impassable with vehicles, pitching camp near the well Durbeljin. This tract, too, offered several sites with stone age tools. Here we were caught up by Prof. YUAN, who had been requested by a Mongol official to travel faster. Having managed to get YUAN on his way, the man turned his attention to us. He was in a great state of excitement over our having built fresh obos. In this way we were adding to the number of landmarks in the region and disturbing the natural balance of the landscape. In a frenzy of rage he kicked over NORIN's high, pointed stone mounds that had been built up as fix-points for the mapping. He kicked with such a will that the stones rolled quite a long way. He also complained that by peering at sacred obos through our instruments we were giving rise to sicknesses among the Mongols. A girl was even supposed to have died in consequence hereof. This old man, who thanks to GEORG's friendly and diplomatic treatment gradually calmed down and became quite decent, accompanied us all the way to the region of the Tsaghan-gol, a couple of days' march east of Shande-miao.

We still stuck to the road, passing Dal-ulan-obo and Chendamen-khara-tologoi; but to the west of the latter we rounded the Boryp Hills, the northernmost offset of the Lang-shan, instead of following the road through these hills as the main caravan

[1] Picture in LATTIMORE, op. cit. facing page 64.

had done. At Chendamen-khara-tologoi two camels were stolen from us by a Chinese (who had been dismissed from one of the groups ahead of us). GEORG and a Mongol chased him down in the Lang-shan a couple of days' journey south-east, but in vain.

Just near the broad, dried-up bed of the Tsaghan-gol, that from the interior of the Boryp Hills flows northwards towards a great plain, we found a four-cornered enclosure, the ruins of an old fort. It yielded, however, no real finds. But in several places we did find stone age sites in the foot of the hills.

Between the Boryp Hills and Shande-miao on the steppe we discovered another four-cornered enclosure, but its position was never fixed on the map.

We encamped to the south-east of the yurts belonging to Chinese merchants beside a dry river-bed some kilometers to the east of the temple-town of Shande-miao, which is the biggest lamasery in Dunda-gung. Here the main caravan had dumped provisions for us, and there were also letters from several members of the staff. The next camp (37) lay a little to the south of the temple in quite a new type of country — sand-dunes. Between these there were two small moist patches, called 'lakes' by the Mongols. I understood their name as Hoer-nor (which ought perhaps to be Hoyar-nor); HEDIN writes Khoburin-nor. The form Ulan-nor seems also to occur. In the dune sand there were in several places plenty of stone age tools; and in one place there was a collection of so-called Ordos bronzes of the simplest kind, deriving probably from a disturbed grave. In the sand I also found a recent skull, most likely from some Mongol. Whether the temple uses the dunes as a dumping place for its dead I never found out; but if this were so there ought to have been more remains than a single skull. It may, of course, have been dragged there by dogs or wolves from some such dumping ground. At all events, whatever the explanation, the skull is now in Stockholm.

A Khalka lama was employed as guide, after relating that there was a short cut through the sand to the north of the usual caravan road, to which we had by this time returned and that SVEN HEDIN had also taken. This short cut could not be resorted to by big caravans, as the sources of water were too meagre; but they would suffice for us, and we were glad to be once more traversing untouched ground.

On September 28th we turned our faces northwards, marching in sand of increasing depth, though with a rich, bushy vegetation. At the next camp (38) we had a terrific row with the Chinese servants, who all gave notice. The trouble was, that they were not all able to ride; but after much crescendo-ing talk and hot argument they decided to stay on after all.

At Shande-miao NORIN discontinued his plane-table mapping and HEYDER his triangulations; this made our daily marches longer and gave us fewer resting days. We began to travel more in the style of a normal caravan. This meant that I had fewer opportunities of searching for archaeological sites and finds.

Fig. 2. Elms and thick tussocks of grass growing in a dry river-bed in western Dunda-gung

On September 29th we started off from camp 38 under an overcast sky. Our rate of progress was slow on account of the deep sand and the frequent interruptions to readjust or reload unevenly balanced loads. We covered about 40 li — the whole time through drift sand, for the most part covered with a species of leguminous bushes and another green bush, both forming good camel grazing. In some places there were, certainly, big, naked dunes; and to the east of the path in a couple of spots there were veritable mountains of sand. I now no longer used the U. S. army saddle we were equipped with, but sat on top of a load of rolled up bedding and tents, like HEYDER, TING and the Chinese servants. SÖDERBOM and MASSENBACH had horses, while NORIN walked and drew the route-map.

On September 30th a cold west wind swept the dunes, and the grains of sand whistled over the ground like hard-frozen snow particles over crusted drifts. The camels made good going of it, for the loads were evenly adjusted. The wind increased in strength, till we were marching in a regular sandstorm; and towards the end the sand drift was pretty disagreeable. The landscape was magnificent, with imposing dunes. Unfortunately, on account of the whirling sand, I dared not take out my camera, though the scenery tempted me sorely. After covering 25 li we emerged from the dunes; the line of demarcation between these and the steppe to the west was very sharp. We pitched camp out on the plain near the dry bed of the Tsaghan-gol.

The 1st October turned out to be a clear, sunny morning; but even as late as 7.30 there was still frost on the west side of the dunes. To the N. N. W., at a distance of 5—6 km, one could see the rather big temple Bombotei-tsaghan-gol-sume, glimmering like a row of pearls in the clear morning air. The bed of the Tsaghan-gol was quite white with soda, and certainly justified its name.

Our route took us through pleasantly varying country — now plains, now low hills. A few isolated trees grew here and there — something so relatively rare in Mongolia that one always experienced a throb of pleasure at the sight. (Fig. 2). In some places little river-beds were flanked with rows of trees. The country rose to the west, and for several hours one had a good survey of the sandy desert to the

rear. From one spot it was even possible to distinguish the big *suburga* at Shande-miao. We passed isolated Mongol yurts and saw a few antelopes. By the time we pitched camp by the bed of the Omboen-khara-gol, near some trees, we had covered nearly 40 li. As the ground was strewn with sheep dung there was such a stink in the tent that I preferred to sleep in the open and enjoy the magnificently starlit sky.

On October 2nd we began by following the Omboen-khara-gol, afterwards turning off to the W. N. W. and crossing a little tributary with an uncommon growth of trees in and around the bed. To the south we had the sand-desert, and beyond that rose mountains. The boundary between Alakshan and Dunda-gung was supposed to run through this tract. The ground fell again and became sandier. Despite a strong wind in our teeth we covered 27 km before pitching camp beside an isolated yurt — Gu-usu (camp 42).

During the march on October 3rd we entered a beautiful, hilly region, with shades shifting from green to violet. Camp 43, after about 22 km, lay just to the north of a mountain ridge and a little river-bed; there was no water in the vicinity, and the camel pasture was wretched, as it had been, moreover, for a few days past.

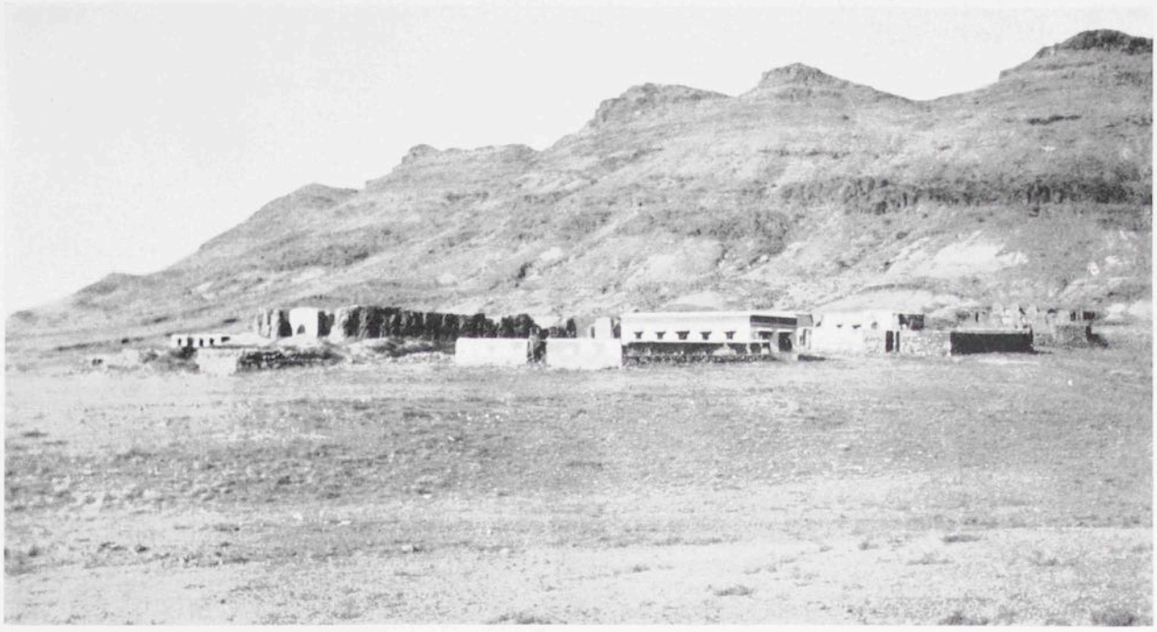
The following day the country was very sparsely settled. Curiously enough, the Mongols here had little huts of peat (*argal* and earth tramped hard) beside their yurts. These huts were square, and were situated in the corner of a square enclosure of the same material.

In the morning we found that a camel was missing. When it was found in the hills it was bound. Apparently this is the Mongol custom when an unknown camel is found astray. Since leaving Shande-miao we had not seen more than a single camel carcase the whole way, though along the road to the east of this place such mournful remains were far from uncommon.

After first traversing rather monotonous country we entered a hilly region in which there were in places tree-clad valleys. Just where the hills commenced, on a level terrace beside a stream-bed, there lay a long, stone-paved grave partly in ruins. This was the westernmost grave I saw on this road. We continued marching until eight o'clock in the evening. Fortunately, the road led over perfectly level ground, so it was not difficult to continue in the dark. In this way we managed to cover 63 li.

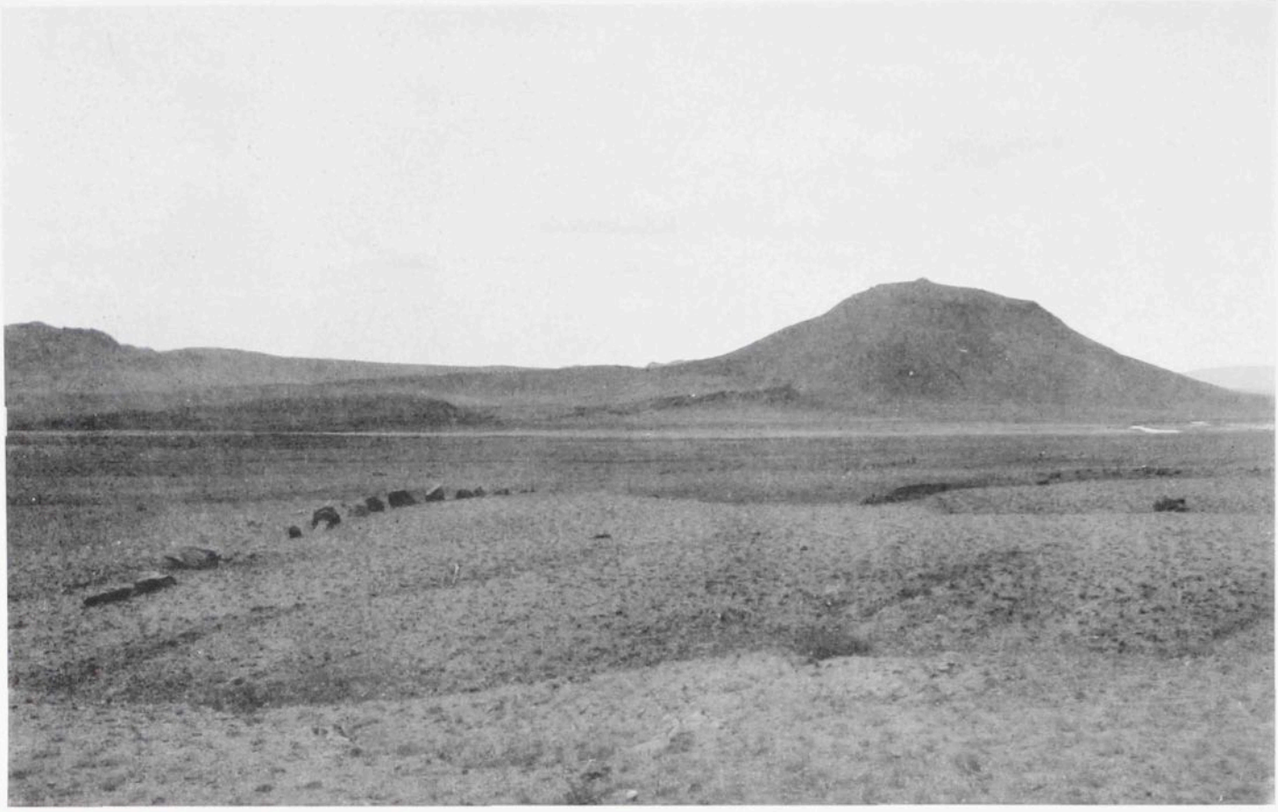
On the morning of October 5th I found a good site with rather beautiful flint tools to the south and west of the well at camp 44. Just to the north of the well there was a deserted Mongol hut of stone.

In the course of the day we passed the simple customs station whose function it is to squeeze money out of the caravans using this little road and crossing the boundary between Dunda-gung and Alakshan. The ferrety little customs officials, armed with ancient muzzle-loaders, did not dare to argue with us about any customs duty. We encamped in the dark, on a little plain.



a. The abandoned lama temple Shire-sume in Dunda-gung

b. The new Shire-sume among the basalt hills



a. Khongkhor-obo. In the foreground a row of monoliths across a rich dwelling site from the stone age

b. Dune-covered basalt ridges west of Ukh-tokhoi, Alakshan. The white stripe with the horseman is the proud caravan road

The following day we at last managed to get hold of a couple of sheep at a reasonable price, after a number of meatless days. To our regret, our pleasant guide left us at this juncture. It was a pity, for he had a good deal of serviceable knowledge, and was, moreover, very willing to impart it. By way of a parting gift he presented us with a part of his »medical supplies» — wolf's tongue and gall bladder, two fossil bones and a herb. GEORG made notes as to the right use of these potent drugs. This Khalkha lama knew a good deal about fossil localities, but none within striking distance for NORIN and TING. At home, he said, he had quite a few bronze arrow-heads and suchlike. To the west of our camp 37 at Khoburin-nor he now informed us, there was a town that had been sanded over; but he did not mention the distance. Unfortunately, I knew nothing of this when we were at camp 37, and I did not afterwards get an opportunity to investigate the truth of the matter.

The weather became so warm that GEORG caught two snakes that had been enticed out of their lairs by the sun. We passed to the south of a Chinese firm, calling a halt a little farther on at Dobolor, near the Winding Road. Here, in the charge of SONIN GIPCH and a Chinese, LARSON had left six exhausted camels. They were to go along with us when they were somewhat rested. But they were more like skeletons than living animals, and were scarcely able to move. One of them died before we started, and none of them lasted as far as the Edsen-gol.

We rested until October 7th, and I found a little site with worked flints. The Chinese firm was quartered in a proper house of a quite special type (the previous merchant had had one exactly similar): above the middle room, that was square, was a cupola set up with the help of the roof frame from a yurt. This made the room spacious and light, with sources of light both from above and the side.

On October 8th we set off again. From here on we followed the same route as Dr HEDIN practically the whole way to the Edsen-gol. At Ulan-tologoi we received a few camel-beans, and also at the next *mai-mai*. Camp 47 was pitched at Shara-khulus.

On October 9th we were joined by a little Chinese, a Jackie Coogan type who had been abandoned by his parents. He was supporting practically a whole Mongol family with the proceeds from his begging, though he himself was starving. He implored us to take him with us to the Edsen-gol, and this we did. At first we followed a path by the side of the main route, through a lovely river valley with many trees and splendid camel pasture. There were also wells. Finally we emerged onto a wide, black plain, and beyond this entered some hills. We proceeded in darkness until 11.10 p. m. This day's march, lasting 11 hours and 20 minutes, took us 79 li farther west, and was the longest so far. The camels were so tired that they did not get up when they had been relieved of their loads. We, too, were quite exhausted.

On the morning of October 10th the water in two cups that had been left stand-

ing overnight in the tent was frozen solid. In the west a strongly marked »four-peaker» appeared over the level horizon. According to what I learnt long afterwards, its name was probably Soyan-khairkhan.[1] The place where we pitched camp is called Horien-dubche, and just west of this are the Chinese huts at Kharadzagh (Khardjack). In both these places we collected chipped flints. In the evening, just before we reached the basalt hills around Ukh-tokhoi's well in the vicinity of the four-peaked mountain, we caught up with a slow Chinese caravan, bound for the Edsen-gol like ourselves. Pl. 2 b, 13 a and 14.

It was a most extraordinary sensation suddenly to meet mallards in the small salt-swamp Shara-khulustei. Water-fowl in the midst of this dried up, god-forsaken part of the Gobi Desert! And there had also lived human beings in the neighbourhood, but, alas, a very long time ago. On the level ground to the east of the swamp I found lots of stone age artifacts. I soon had all my pockets full, and I might have continued collecting indefinitely. This was probably the richest flint site I had come across so far. But the approaching dusk forced me to hurry on, to catch up with the caravan before darkness fell. As it was, I was just in time to see the last camel disappearing over the ridge of a sand-dune far to the west as evening merged into night. When after a couple of hours I had caught up with my companions, I was pretty tired after all the climbing and floundering about in loose drift sand, and it was with a feeling of luxury that I finally flung myself down on my sleeping-bag in the soft, clean sand. Fortunately, I had an opportunity later on of returning to this rich finding-place.

Quite near the camp was the well Bayan-khuduk (we were here somewhat to the southward of the usual camel-route). When GEORG was watering his horse at the well he found a number of chipped flints, and he came back with the whole fodder-bag full of elegant flakes, cores and scratchers.

It is with curious feelings that one stumbles across these rich finds of well-worked stone age tools in sharply delimited areas in the middle of this dried-up and sterile Gobi Desert. The chief reason why people found their way here during the stone age is to seek in the rich supply among the basalt hills of flint-like stones, that are excellently adapted for the making of tools and weapons. But one cannot imagine human beings living here if the natural conditions were as hard then as now. It is, therefore, more than probable that the climate has become drier, which has led to an increased formation of sand-dunes and increased the salinity of the ground. In the steppe region the stone age dwellers seem to have carried on agriculture to a certain extent. There are, at all events, simple hand-mills on several of the sites. This, too, is an indication that the climate during the stone

[1] In Part I of The History of the Expedition we have used the form Shugum-khairkhan on the advice of Dr K. GRØNBECH, our expert on Mongolian. In my diaries I have written Shogon. LATTIMORE, in »The Desert Road», gives Soya-, which he translates as »Overlapping Teeth». In RAMSTEDT's Kalmuck dictionary we find *sojān* or *soja* (i. e. with English spelling *soyan* or *soya*), which means »fang; pointed, erect spike»; and this fits the appearance of the mountain well enough.

age was more favourable than now; for it would now be impossible to carry on dry farming in the majority of the places where millstones were found.

Past the well Ukhyrin-usu we continued over the desolately monotonous, black desert plain to the dunes around Dengin-khuduk. In the morning, before we had got so far (October 13th), a very large Chinese caravan of 6—700 camels passed us on the way to Sinkiang. We had company with two Tibetan lamas, a fat, comfortable fellow reminding one of a well-fed friar, and a boy. GEORG taught them to say »Good morning!» in Swedish (as well as a form of greeting improvised by himself, which I do hope the holy man never used in greeting any Scandinavian).

The border between the sand-belt and the sterile gravel gobi is rich in vegetation: tamarisks, saxaules and reeds. We pitched our camp 52 just to the west of Dengin-khuduk, the beginning of Goitso, a region with good pasture and rich supply of fuel and water.

The next day we camped in the first oasis with trees along this route: Olon-toroi, where the wind rustled in the leaves of the gnarled poplars with a sound that reminded one of rain. That morning I got up really early, just to be among trees as long as possible, for away to the west extended the same treeless desert as before. And yet this tract, called Goitso, is richly blessed with bushes, reeds and watering places. After many meatless days we had meat for breakfast. Besides the sheep we bought for 9 dollars, HEYDER shot two antelope bucks.

At Arshan-obo we fell in with a huge caravan with wool and hides — about 270 camels in strings of 18. One of the animals had a white head.

In the sterile desert to the east of Goitso we had seen no Mongol yurts for many a long day, but here they were plentiful; and in the meres there were flocks of several kinds of wild duck and other waterfowl. In the south this narrow oasis is bordered by high sand-dunes extending as far as the eye can reach, while to the north is a vast expanse of black gravel-plain, magnificent in its desolation.

On October 17th the temperature was 23° C. when we started out in the middle of the day. We met 93 camels loaded with wool. We went on until after dark, reaching Yindirt at 7.30 p. m., after covering 44 li. This place was in the middle of a big plain, where the ground was washed clean by water, and as hard and even as a cement floor.

The following day we fell in with a Mongol, who informed us that the main expedition had built a raft or ferry on the Edsen-gol, with which they intended to go down the river to Ghashun-nor. The fellow also told us that a rich and valuable find had been made in the course of the excavations in Khara-khoto, but this afterwards proved to be a product of his fertile imagination.

In the afternoon we met 271 first-class camels with wool and hides. This caravan had contracted to go from Barköl to Kuei-hua in 60 days! They had already been travelling for 40 days, and thus had 20 in which to cover the remaining 900 km — a little matter of 90 li a day without rest days!

We pitched camp among the dunes at Dalain-khuduk in the evening, after a march of 57 li. The water in the well was wretched, owing to the quantities of camel-dung round about. There was a large obo, or rather, a shrine consisting of branches of trees propped together, in which passing Chinese set up a little wooden board with their names and the names of their firms as a sacrifice. I followed this custom by offering a couple of visiting cards.

On the morning of October 19th a herd of horses was brought to the well to be watered. At 2 o'clock, when the heat was pretty trying in among the dunes, where the route was confined to a single, scarcely discernible path, we met 378 fine camels with loads of wool, and belonging to the same owners as the previous day's caravan. GEORG was given the following information about our main caravan: one foreigner, two students and one Mongol from the main camp on the Edsen-gol had gone to Mao-mu to buy sheepskins and flour; three foreigners, one Chinese and two Mongols had gone to Hami to fetch money; two students, one Mongol and one Chinese were on the way back to Peking with four camel-loads of collections. The majority of the camels were in very bad condition. Most of this information was correct, or later became so!) The day's march was 36 li.

At the camp in the sand the Mongols made a big fire of saxaule branches, that make splendid fuel, as they burn silently, give off no smoke worth mentioning but generate much heat. Afterwards they baked bread in the sand under the glowing heap. The result was quite good, except that the outer crust was somewhat spiced with sand.

On October 20th a Mongol caravan of 25 camels passed us from the west. Their biggest animal was 2.20 m in height, and had the most magnificent humps. At 2.30 we came to the end of the sand, that we had been traversing since the 18th. We had put 45 li behind us when we called a halt for the day. Camp 59 was situated at the well a little way from the watch-tower Boro-tsonch. The water in the well tasted of sulphur. I visited the ruins of the watch-tower on a beautiful, strongly eroded mesa-hill, where I collected some Han pottery. (I returned in 1929, and then excavated the site.) We were now following a north-westerly course, and this was the first day for a long time that we had not marched with the rays of the setting sun in our eyes. We stopped, after covering only 17 li, at Dzam-khuduk, to wait for two of our Mongols who had gone to look for a truant camel.

From Chinese caravan-men GEORG heard that some sly fellows had set up an entirely private customs station somewhere on the Edsen-gol, where they were reaping a rich income from the passing caravans, that are very numerous at this time of the year, as we had seen ourselves. The caravans had finally to choose a more northerly route, but they first reported the matter to the Suchow authorities. We did not hear the sequel, except that soldiers had been sent to the place to look into the business. In all probability the authorities found that the customs station paid well, and promptly made it a permanent institution.

On October 22nd we pushed on to Khara-khoto, whose stately walls glimmered yellow at a great distance. We encamped just outside the west town-gate, and on the following day we had a look at this highly interesting ruined town. I noted at once that KOZLOV's plan was rather defective, and that the settlement stretched at least 100 m outside the east town-wall. I shall return to the discussion of this and other ruins in the tract later.

In the afternoon we reached the river, to our delight; and it was not long before we were once more united with the greater part of the members of the expedition at the main camp at Tsondol. SVEN HEDIN, however, with LARSON and HASLUND, was away on a boat-trip to Sogho-nor. On their return we had wonderful and unforgettable days together. Around the huge, flaming camp-fire in the evenings we discussed our work and future plans far into the night. Among other things, the following plan was drawn up for the crossing of the difficult desert separating us from Sinkiang and its first oasis, Hami: a column under HEMPEL-HAUDE-HASLUND was to take the most southerly route; HEDIN with the main force was to take a middle route; and NORIN, MARSCHALL and myself were to take a northerly route.

The original plan had been that NORIN and I should remain at the Edsen-gol to investigate the quaternary geology and archaeology of its lake-basin. This plan was changed, however, and it was decided that we should first concentrate on the Lop-nor basin in Sinkiang and afterwards return to the lake-basin here.

Our first desert crossing had been successful. We did not have so much trouble with the camels as had LARSON with those in the main caravan; but GEORG nevertheless had his hands full looking after the animals, treating the sores on their backs when such appeared, and procuring camel-beans from the Chinese firms along the road. Now NORIN and I had to dispense with GEORG, who was detailed to stay with ZIMMERMANN and the student MA at the meteorological station as interpreter and assistant.

Tsondol, that was camp XLIX for the main caravan, was no. 62 for us. On November 9th we set out, last of all, with our 22 camels with a northerly course, pitching camp on the bank of the Oboin-gol below Dash-obo after a march of 40 li. MARSCHALL had with him his tame antelope Dicky, who had the pleasant habit of chewing all leather straps and all papers. In the morning I discovered quite a respectable pile of Dicky's black pearls on my sleeping-bag; MARSCHALL regarded this as a mark of favour on the part of the antelope. To the N. N. W. one glimpsed light blue mountains at a very great distance. We crossed the pathless gravel plain which separated us from the Mören-gol, a march of 52 li. Here we stayed over for a day, to give the camels what we thought would be their last chance of pasturing properly before the desert began. We also bought

sheep, and slaughtered them in order to have a little meat in reserve in the wilderness.

On November 12th we followed a W. N. W. course over a flat, seemingly endless gravel plain. The only rest for the eye was afforded by the blue mountains to the north of Ghashun-nor; these must have been Tostu in Outer Mongolia. It was dusk when we reached the terrace on the south shore of Ghashun-nor; but it was far from here to the open water. I went out a few hundred meters on the salt-encrusted surface below the terrace, and could then distinguish a very faint, melodious sound that must have come from the wash of waves far away in the darkness.

The guide, the Alakshan-Mongol YALTSANG, struck into a track with the marks of wheels, although it led due south and not westwards. So we continued southwards until 9 o'clock in the evening, when we finally called a halt, tired enough after our longest march thus far — 86 li. We had a stiff wind to contend with the whole day.

On November 13th it was still more of a job to strike the tents than it had been to put them up the night before. The guide had snuffled out the well Sharakhulusun 15 li to the south, as he said, and thither we turned our steps over the same desolate plain as the previous day; but it was 21 li. There were trees with drift sand between, and some pasture. This was the first time the antelope Dicky had followed us on foot; otherwise he had always ridden in a box. He trotted along at MARSCHALL's side, and was rather afraid of the dogs, especially the rough and shaggy Snaps. Towards evening the wind had risen to a gale.

The next day we started with a westerly course in a whirling sandstorm. Dust and sand whipped our faces until they tingled again. Our goggles were protection only against the coarser grains of sand, the finer dust penetrated everywhere. Sand gritted between one's teeth, while every now and then a particularly vicious gust would drive big grains of gravel whistling past one's ears, and one got the same taste in one's mouth as when a dentist drills till chips of tooth fly.

We passed between the remains of wind-eroded clay terraces, and it was evidently from these that much of the dust came. We had the gale in our teeth the whole time. Visibility was never more than a couple of hundred yards, and at times only about ten. We covered 48 li all the same. Camp 67 had neither water nor pasture.

On November 15th we were up at 5.30. Over the early breakfast YALTSANG came in and told us that he had discovered a fire to the south-east. MARSCHALL and I decided that *if* it was robbers we would not begin shooting at them until we had peacefully concluded breakfast. YALTSANG and another man rode over to the fire and returned with the news that it was — the main caravan . . . It had been encamped there at a well for two and a half days on account of the storm. Since HAUDE-HEMPEL-HASLUND had taken the route that HEDIN had intended to

travel, HEDIN with the main caravan was obliged to strike northwards towards the new caravan-route that we were to have followed. We now bore the main caravan company through three chilly autumn days, and thoroughly enjoyed the comradely relaxation in the evenings.

*Through the northern part of The Black Gobi*

On November 18th we took leave of them again and turned due west through pathless desert. YALTSANG was confident that he would be able to hit upon watering-places, though he had never been in this tract before. And true enough, the first march led to a watering-place only 15 li distant, where our camp lay in a crescent-shaped indentation in a plateau. We stayed over here the next day, while the north wind whistled past, bearing some grains of snow. Fortunately we found a stone age settlement in the sand around the wells, where we collected microlithic flint tools.

On November 20th the wells were frozen solid, so we had to wait till they had thawed before we could take in a supply of water from them. Meantime, CHIN discovered a better stone age site 200 m north of the camp on the plateau of marls and conglomerate, where there was a semi-circle of small sand-dunes round the place, that was overgrown with saxaules.

We followed a broad latitudinal valley to the west. Through our field-glasses, far away on the horizon in the direction of our march, we could faintly discern the high mountain Tsaghan-bogdo, a matter of four days' march distant.

Camp 72 was pitched in the middle of the black gravel plain. There was a little pasture, but no water. In the course of the day we saw the spoor of wild asses and what may have been the spoor of wild camels.

On November 22nd we went through hilly country with wonderful colours — red, green and dark violet shifting in the most remarkable shades, just like JOHN BAUER's goblin mountains. Tsaghan-bogdo's peak disappeared among the clouds, and remained hidden from view the whole day. 55 li's march took us to camp 74, that lay on a plain with camel scrub but no water.

On the morning of November 23rd a wild ass (*kulan*) came walking over the plain towards us, the first we had seen. We shot and missed, and the shy beast showed its heels. At the foot of the hills whose south side we were skirting I caught sight of another wild ass. It was scared into flight by the dogs. But in the mouth of a valley I saw a third standing, and this time I was able to stalk it to within a couple of hundred yards, and it did not escape. MARSCHALL caught up with the caravan, and fetched our riding camels. On his return we tackled the wild ass with our knives, a new and interesting job. We were astonished to see one great stomach after another come steaming out of the slit up belly. Loading the carcass onto the camel was the hardest job of all, for it was

confoundedly heavy and stiff-legged. With girths and whatever other straps we could get hold of we bound it fast, and so began a slow march after the caravan, of whose whereabouts we had no notion. But the guide stayed behind at intervals and made fires to show us the way.

It was long before these flaming signposts turned into the campfire, and it was only when dusk had fallen that we reached it after a tiring march over difficult ground. To cap everything, we lost the charming young antelope Dicky, and to MARSCHALL's sorrow we never saw him again. The rest of us, too, keenly missed the lively little fellow.

On November 24th we stayed over at camp 75; for here, at the southern foot of the Kuku-tumurtin-ula, there was water coming direct from the rock, and the pasture was not bad. NORIN shot five chickores. Our Chinese said that the flesh of the wild ass was uneatable (pure nonsense, for as I have since heard, the Turkis look upon it as a delicacy). Unfortunately we allowed ourselves to be persuaded by the servants, and it was the dogs who got the treat. We cut off great strips and gave them, till they were so sated that they could not even look at the meat.

November 25th was a tiring day for the camels, for the route crossed frequent dried-up stream-beds with steep sides. So we pitched camp 76 in the mouth of a valley after a comparatively short march. Several antelopes were visible on the big plain to the south.

The next camp was at Toroi-shandai (a name at last!), just under a steep wall of rock — an ideal camping-place, where we found water, fine pasturage and trees in lovely surroundings. People seemed to have appreciated this place as early as the stone age, for I found some flint tools. And since then many Mongols and perhaps Chinese had stayed there, judging from a walled enclosure and a number of small circumvallated plots, where poppies had perhaps been cultivated. As at the previous spring, there were low walls with loop-holes, where camel-hunters waited in ambush for the wild camels to come and drink. When I went out with my rifle I saw one of these fleet-footed beasts, but did not get within range.

On Sunday, November 27th, we rested. In the way of game I saw antelopes, hares, and three big vultures. I had not seen these birds since leaving the Tiger Valley, where they had gathered to feast upon fallen camels.

When we struck camp the next morning we were surprised to see two Mongols riding towards us, armed with rifles. They were peaceful camel-hunters. One of the rifles was a flint-lock, the other was a Russian army rifle M/86. They told us the distance to the next spring was 30 li. It was cold the whole day, and the route led down and up over tiring ravines. It was only 24 li to the watering-place, that was called Tsaghan-buluk. Here the two Mongols had their camp, two yurts and a tent. They were very friendly, and helped us with everything. Amongst other things, they sold us four sheep at a reasonable price. While we were at breakfast

the following day one of them turned up in the company of an older, black-bearded Mongol with a rather unusual appearance (the beard was in itself unusual), and made us a present of some camel's milk. This tastes very good, and we had it with our porridge. We had not tasted real milk since leaving Pao-t'ou six months before, but the dried milk »Klim» had been a good substitute. These Mongols had been here only a few days. They intended to continue eastwards in our tracks for a little way and then strike off to the north to Outer Mongolia, where they had their homes.

In the middle of the day one of them came up shouting: »Wild camels! Wild camels!» Rushing out with our rifles, we crawled cautiously up a ridge; and there, on the plain to the north, we saw a whole herd of camels. NORIN and the Mongol were close together; I was about fifty yards to the right of them. I picked out the biggest of the camels nearest to me and fired. At the second shot it gave a bound and sank slowly to the ground, after having attempted, limping heavily with its forefeet, to make off. At this juncture I suddenly heard a shriek from the Mongol: »That was *my* camel!» Well, here was a fine mess! I had shot one of his tame camels, and one of the best into the bargain. I was struck dumb with dismay, and was completely at a loss to know what to do. There had been three wild camels that had come to graze with the tame ones; but both NORIN and I had got the impression that *all* were wild.

We offered the Mongol one of our animals together with the money for the difference, for none of our beasts was as good as the one I had shot. The Mongol drew out the nose-peg from his late camel and said that he did not want any compensation. We were not to blame for what had occurred. It had been his fault that we had made the mistake. He had taken us out on the hunt and shown us the herd. (That foreigners could be so stupid that at a distance of 2—300 m they could not distinguish tame camels with pegs through their noses from wild camels he had no means of suspecting. He did not say as much, but I should have understood his thinking it.) We conferred with our camel-man OTEHUNG. Our supply of silver was small, but after much calculation we decided that we might be able to dispense with 80 dollars and still reach Hami. This was, moreover, about what the camel was worth. When the Mongols put in an appearance I, the sinner, accordingly handed over this sum, and to my great relief the owner of the camel finally agreed to take it. That he did not consider that he had been badly treated was shown by the fact that at dusk he came riding up with a newly shot antelope, that with profound obeisances and professions of friendship he handed over as a gift.

On November 30th we took a cordial leave of our friends the Mongols, who on this morning also had given us a bowl of good camel's milk. We continued over the plain, presently turning into the mouth of a valley running north-west between beautiful rocks. Our faithful landmark Tsaghan-bogdo disappeared from

sight. The ground rose and a cold wind blew. The camels were tired, and many of them stopped, so that their nose-ropes were torn off. My riding camel refused several times to rise, and dragged along at a snail's pace. He was evidently at the end of his tether. We pitched camp before we had covered quite 35 li, in a little side-valley in the hills. There was no water, but fair pasturage.

The following morning the temperature was — 19° C., but the cold was not particularly noticeable. We continued through the valley, and crossed a small divide. The air was crystal clear, and the rocks were glorious. We passed a couple of old camping-places and the foundation of a Mongol yurt, coming out on a big plain with a well in a river-bed, showing the tracks of many caravans. It is probable that here was a branch of the road between Anhsi and Outer Mongolia. We encamped to the west of this branch beside a small field of reeds, after covering 39 li.

On the morning of December 2nd there was an extremely thin covering of snow on the ground, and it was still snowing slightly. The camels and dogs went about looking as if they had been sprinkled with icing sugar. When the sun finally managed to break through, visibility was still poor on account of the light yellow snow clouds, that had all the appearance of clouds of dust. We struck off due south to get away from the foot of the mountain, whose piedmont slope was strewn with sharp stones like coarse macadam, that hurt the camels' feet. One of them had recently been given a leather shoe for one of its forefeet, but now it was limping with the other.

The snow soon melted. We marched only 27 li, and pitched camp 81 in a narrow, wind-protected valley on the south side of the mountains.

The temperature was —8° C. on the morning of December 3rd. We trooped down to the broad latitudinal valley again and followed it westwards the whole day. As on most other days, I saw antelopes and hares, and also the horn of an ibex. There was no water where we pitched camp for the night, but the pasturage was tolerably good. We had covered 47 li. Owing to the sharp stones on the ground, progress was slow. Just before camp 82 we crossed a distinct path, runing from north to south. As there was complete absence of wind the whole day, it felt very warm, although the temperature was never more than — 1° C.

In the early hours of the morning, on December 4th, the wind rose; but it died down again before dawn, and the sunrise was magnificent. The day's march, 51 li, led the whole time over the plain, and the surface of the ground was the same as the preceding day. The guide rode along the southern edge of the mountains in the north to look for water, but without success. The three days' supply we had with us from camp 80 had now to last us also for the following day, so we rationed the drops: only one cup of tea instead of the usual two on pitching camp. Soup was not allowed, and all food was to be prepared with as little water as possible. As to washing, we had given that up long ago, following the Mongol custom;

and the skin fared much better in the icy blasts of the Mongolian winter. MARSCHALL was not quite satisfied at the beginning of the non-washing period: »Dear friends, this comes too late. I wish it had happened in my childhood.» But with his usual philosophical geniality he soon left his age out of consideration, letting his already deeply tanned face take on a still darker hue with childish satisfaction.

Camp 83 lay to leeward of smaller hills before the big chain to the north. As usual, since the cold spell had set in, one had to warm up the bread over the fire before one could eat it, for the inside was hard frozen. Round about the camp were fresh spoor of wild asses, antelopes and a wild camel. The pasturage was tolerable, but not much more.

On December 5th our supply of water was practically at an end, so we were up against it. After continuing for some distance westwards, NORIN decided that we ought to traverse the hills to the north of our route, since there was a chance of finding snow on their northern side. We found a path that had been tramped hard by animals, and followed it. It soon led us in among the hills and into a river-valley; but the going was difficult for the camels, and as the valley grew still narrower we had to pitch camp. A few of the men had gone on ahead, and a little later they returned with the news that there was a watering-place 5—6 li farther on. With great satisfaction we drank *two* cups of tea that evening.

Early the following morning the caravan turned and came out of the hills again to try to find an entrance from the south into the water-bearing valley. By this time the camels had been without water for six days. I followed the kulan path direct to the watering-place in the new valley; in parts the path was rather neck-breaking. In one spot I had to clamber past a sheer drop of 10 m. Whenever it rained in this desert it must form a splendid waterfall. Another half-hour and the longed for valley was reached — a broad ravine running from north to south and filled with reeds 4 m in height, big poplars and bushes. A real paradise in the desert! Sheets of ice indicated that it would be a simple matter to dig down to water. In this wild valley, whose walls were in places sheer cliff, blackish green in colour, there was an eagle's nest on a small ledge. From another ledge about 4 m below this there was a pole pointing up towards the nest, and held erect by a pile of stones. We were evidently not the first to visit this valley!

There was a good deal of soda in the water, and we all got diarrhea from drinking it. Here we stayed for two days. The valley broke through the range. I found a grotto some way up the west face of the rocky wall that had been used as shelter in modern time; unfortunately there were no older cultural layers. In among some big trees there was an old tumbledown fold almost entirely covered by fallen poplar trunks. A small assemblage of stones reminding one of a grave was probably a fox-trap (cf. HEDIN: »Asien» II, p. 52).

On December 9th we left this nameless valley, that was the first real oasis since

the Mören-gol. We first followed the valley down to the south; outside the hills the river-bed was several hundred meters broad, and filled with dry tree-trunks and small bushes. Presently we struck off to the west again. In the afternoon we saw an approaching caravan winding along the foot of the mountains to the north. We sent one of our men ahead to investigate, and found that it was a Mongol caravan bound for Outer Mongolia from Anhsi. We crossed a couple of little paths and encamped on the plain after a march of 44 li. There was no water, but the pasturage was fair. Fuel, in the form of bushes, was getting better day by day.

The moon was still high in the heavens at 6 o'clock in the morning on December 10th. We started at 8.30. To the south of the route there was a big expanse of salt with many bushes. The spoor of many animals led down to this region, so water was probably to be found there. We encamped, after covering 30 li, at 12.45 p. m. We had scarcely put up the tents before we saw a big caravan of several hundred camels coming from the north-east and proceeding south-west. Evidently a Chinese merchant caravan, to judge by the regular strings and the absence of riders.[1]

The guide rode up to the big caravan, returning presently with two Chinese on horseback. They had met our main caravan, that was now 3—4 days' journey behind them. LARSON had lost seventeen camels and the flour supply was practically exhausted; from the Chinese they had been able to buy only one sack.

The next day we should be arriving at a spring, they told us. Hami was ten days distant. They themselves were bound for Ku-ch'eng-tze.

After darkness had fallen we heard the bells of another big caravan in the west. The dully clanking music continued audible for about an hour.

On December 11th the sky was overcast. We soon struck into the big caravan route leading south-west, not west as we had expected. We traversed low, black hills and then green slate formations. In a number of places the colouring was magnificent, with predominating green together with light yellow-red parts of looser material, dark red streaks and glaring light green hills, and between these the brownish yellow hues of withered plants. Following a river-valley, we came out on the plain again, where the route was almost due south. Before us we saw the huge caravan of the previous day. They were just striking camp, and a number of strings were already beginning to wind in long rows along the road to the south-west. There were in all over a thousand camels from Kuei-hua. At one o'clock we stopped at their abandoned camp after covering 34 li. This camp, no.

[1] The Chinese have their animals in strings of 15—20 and a puller on foot leading the first camel; the strings proceed in single file. The Mongols, on the other hand, when the country permits of this, have their strings abreast, and the camel-men ride in front. This latter system was probably developed on the steppe, where there are no obstacles anywhere; but it is unpractical if the animals are nervy or restive, as panic may easily break out. But the Mongols prefer this method, perhaps because it enables them to sit and talk with one another on the journey. The Mongols have no camel-bells as the Chinese do; and the pack-saddles are also different.

88 for us, was situated beside a reedy source with big sheets of ice, bearing the name Sebestei, or more fully Narin-sebestei. We had not been here for long before antelopes came to drink; and in the course of the day I shot not only my first, but also my fourth antelope. Truly, a welcome addition to the larder!

On the morning of December 12th one of LARSON's Chinese camel-men caught us up with a letter from HUMMEL. From the Mongol caravan we had met on December 9th the main caravan had heard that we were bound for just this spring of Sebestei. We read that HEDIN had got another attack of gall-stones of the same sort as at Shande-miao in August, and HUMMEL wanted us to wait for the main caravan where we were. Meantime NORIN was to go back with the messenger to confer with HEDIN — a matter of 45 li. The prospects for the expedition looked dark indeed.

How HEDIN and the others arrived at Sebestei the following day, and how the caravans were there reorganized has been described by himself in Part I. NORIN's, MARSCHALL's and my detached column now ceased to exist as an independent unit. HEDIN, HUMMEL, NORIN and myself, as well as some servants, stayed at this spring over a very memorable Christmas and New Year, being relieved on January 8th, when we continued towards Hami. HEDIN travelled in a camel-borne sedan-chair, while we others went mostly on foot through miserably cold, snowy mountains and over wind-swept desert plains to the first village in Sinkiang, Miao-erh-ku (Mjörgo), where we arrived on January 19th.

It was pathetic and tragic to see how our faithful camels declined in strength during the winter, to see their movements getting slower and slower until they finally collapsed for lack of sufficient pasture. The loss I felt most keenly was that of my riding camel, that, certainly, I had not had for longer than from the Edsen-gol, but that I had become especially attached to. His skeleton was left to whiten in the inhospitable hills of the Black Gobi.

The digger CHIN, who had already arrived at Miao-erh-ku with the first column, had used the period of waiting to good effect, and ferreted out a little stone age settlement containing a number of sherds of the painted pottery for which I had so eagerly but unsuccessfully searched in Mongolia. (See Vol. VII: 1, pp. 14 f.). From Miao-erh-ku I now drove in an *araba* to Hami, continuing thence with HEDIN to Urumchi. We were not stopped as abruptly at the border by soldiery as the groups first arriving in Hami were; but in Hami itself we were closely guarded, and on the journey to Urumchi we had a military escort of Torguts from Qara-shahr.

From the middle of July till the end of January, i. e. for more than half a year, we got neither mail nor any kind of news from home whatsoever. In this period we had advanced 1,340 km as the crow flies towards the interior of Asia, and it was with the utmost curiosity and anticipation that we devoured the scanty post from Sweden we found awaiting us in Hami after

the desert crossing. That the bulk of the mail was smaller than we had the right to expect was not the fault of those at home, but of the Sinkiang censors. We were not received as decent and peaceful travellers, but as suspects, enemies and spies. True, this changed pretty soon when SVEN HEDIN had got into personal contact with the authorities. Unfortunately, however, this Chinese aversion in Sinkiang towards the expedition was renewed, and had then rather serious consequences that cost us much time and more money. Otherwise, all of us enjoyed travelling and working amongst the natives of the province. »Die Mohammedaner sind immer anständige Leute», as MARSCHALL said.

On the cart journey from Hami to Urumchi we had neither time nor opportunity for work, though in the mouth of the Sengim Valley just at the edge of the Turfan depression I did find a few sherds of painted pottery approximating to the Ma-chang type. On the same day I was able, as a tourist, to visit the magnificent Bezeklik grottoes, with their numerous Buddhistic paintings and the depressingly ugly traces of my worthy predecessors, who had sawn away parts of the mural paintings. We also paid a brief visit to the big ruined town Qara-khoja (Pl. 3 a). And then we rode on to Turfan.

After much wheedling, HUMMEL and I succeeded in borrowing a couple of the soldiers' fine Qara-shahr horses, on condition that their riders got our places in the carts. It was a treat to be able to move freely again after sitting cramped in the dusty, springless carts. After leaving Turfan we used to ride on ahead, to see that the wretched inns were more or less habitable by the time HEDIN arrived. We took the two last stages as one, riding direct from Ch'ai-o-p'u to Urumchi, where HUMMEL and I thus arrived a day before HEDIN and his cart-caravan on February 26th.

# TRAVELS IN SINKIANG 1928

In Urumchi several part-expeditions were organized. As early as March 9th NORIN was able to start out for Turfan, and on the 13th I followed, with HASLUND as caravan leader. And here again begins a phase of my life in the expedition that has not been described by others, except in the briefest of fragments.

We rode on horseback, taking the baggage in four carts, in which also the servants rode. These latter were the digger CHIN, the newly employed Chinese cook JOSEF and »SÖDER». The last-named was the Mongol-speaking Chinese lad whom HASLUND had saved from perishing in the sand at Khara-dzagh (see Part I, p. 137), and who now followed HASLUND like a faithful dog. His name was actually WU SUI-TEH or something of the sort, and we pronounced the latter part of it Söder, to which he apparently had no objection. He used to come and wake us every morning with a: »Haslund! Yabona!» — rather an original reveille.

About 10 li to the east of the inn Chi-chi-ts'ao-tze, just south of the road, there are the ruins of an old watch-tower. Between this and the modern ruins of a building beside the road there are the remains of a four-cornered fortification surrounded by a moat. To the east of this there are the marks of several houses long since destroyed, and reminding one of the remains of houses in Khara-khoto. The probable name of the place is San-shih-tun or -tu.

On the plain to the west of Ch'ai-o-p'u we met one crowd of Kirghiz after another. They had with them their yurts, camels, oxen (all heavily laden), horses, donkeys, sheep and goats. Tiny children rode on horseback. Some of the men were armed with rifles, flint-locks or M/71's provided with long forked rests. The general impression was immensely picturesque. Evidently a number of families in the middle of their spring migration.

Just between the two next ruins and in the middle of the plain lay the little finding-place for a few chipped flints discovered by CHIN on the way to Urumchi (Vol. VII: 1, p. 26). We stopped here and grubbed about for a bit, but we only found a few chips and a little Orthoceras, that later roused NORIN's enthusiasm.

On our arrival at Ch'ai-o-p'u we fell in with a big cotton caravan; and a little later another chorus of camel-bells was clanking outside the gate.

A little beyond the first house-ruins to the east of Ch'ai-o-p'u I noticed an erected stone out on the plain, and a little farther on another one that had fallen over, with a crudely carved face. (Concerning these stones see Vol. VII: 1, p. 202 f. and Pl. IX a.) A third stone was situated just north of the road.

Just before Davan-ch'eng the traffic was quite lively: an approaching Kirghiz family with herds of sheep and goats, Turkis with horses and donkeys, and Chinese with a big camel caravan loaded with small boxes or chests. Firmly bound on the back of one of the tall animals lay a little white camel-baby, that gazed inquisitively about him. In the last string a Chinese woman sat between the chests with a little child in her lap. From the load of the last camel there protruded a lot of bundles; and among these, on each side, I made out the head of a Chinese urchin.

On March 16th we rolled on towards Turfan. This time, however, we did not force the two passes to the east of the village, but drove down the river-valley. The width varied between 30 and 50 m, and the stream rushed impetuously round bends over the pebble-filled bed. The carts crossed the stream several times, and the water rose to the hubs, despite the height of the wheels. HASLUND and I rode on the cliff road on the east side of the stream. In parts it had crumbled, so that we were also obliged to go down into the river-bed. We met a caravan consisting of ten carts. As it was such heavy going for the carts, HASLUND and I got a long way ahead, and we had been sleeping for quite a time, with our saddles as pillows, when the carts came rolling into the inn-yard about midnight.

The next morning JOSEF served up nothing less than two thumping meat-courses for breakfast. Apparently he intended to make up for the absence of supper the previous night. As he had also done on the last occasion when I had spent the night here, the innkeeper came in and admired the material in my clothes. Now he made the further discovery that the buttons were of leather, and he must needs demonstrate this finesse to all and sundry; they came forward in turn, to convince themselves of the correctness of his information by feeling a button.

On the way from Qovurga to Kan-kan we noted that we were approaching lower ground, for the heat began to make itself felt. The dog Snaps, who was unusually long-haired even for a dog from Mongolia, panted along in his thick coat and flung himself down in the shadow of the nearest cart as soon as a halt was made. The horses had a strenuous day of it, and the drivers were obliged to resort to their whole repertoire of tricks to get them to move. They jabbed the poor creatures with awls in the upper gum, the eyelids and the withers until the blood streamed.

## *Turfan*

On March 18th we saw the first delicate green of spring just to the east of the night's camp; it was willow and sallow beginning to bloom. In and about the little runnels of water gleamed sparse green blades of grass and leaves. And

when we got nearer to Turfan the first lizards and flies also began to appear. We passed just north of the picturesque ruins of Yar-khoto, that is surrounded by deep, very lovely ravines, and were soon in the shady bazaar-street of Turfan. Here we were suddenly hailed with a: »NORIN?» — »Yes, yes, NORIN!» The man was one of MOSUL BAI's men, and he took us to his master's house, where NORIN resided. Before we had a chance of washing off the dust of the road the mayor came to visit us. There had been a change since we last passed through Turfan. This new mayor was a fat, lively, Russian-speaking Chinese who had been in France during the war with the »Coolie Commission». He informed us that our camels from Hami had passed Ch'i-chio-ching-tze. Progress was evidently slow indeed. We had expected them to have arrived already.

Our own arrival, meantime, coincided with Ramasan, when the orthodox Mohammedans fast the whole day. But they make up for it after sunset, as appeared from the magnificent supper our host provided. He was a big merchant, and his two-storey house, not yet quite finished, was imposing. In the courtyard was the shop, where one could purchase anything from silks, Russian soaps and *papyrossy* to spades and horse-shoes.

On March 22nd our camels finally arrived. Of the 67 that had left Hami forty days before, 3 had died; and the appearance of the others was scarcely calculated to inspire confidence.

On the 23rd Ramasan came to an end, and everybody was in festal attire. Piles of toothsome pastries and sweetmeats were served on the floor of the »dining-room», and the whole day turban-clad Turkis came streaming to the house. Their visits were very short; they scarcely had time to drink a cup of tea. We ourselves were regaled with an abundance of good food. All the little girls were clad more gaily and resplendently than usual, and they flitted about in the streets and courtyards in little groups. They had long multi-coloured skirts and lots of silver ornaments dangling among the numerous long plaits that hung down their backs.

Early the next morning NORIN's 20 camels were brought to the courtyard and loaded. He had also procured four donkeys for himself. At noon he set off due south on a little road leading to Singer in the Quruq-tagh, where we were to meet him. The very day NORIN sent one of the servants back to procure more donkeys; the camels were too wretched. We took advantage of the opportunity to send a good deal of our baggage with a hired donkey caravan to Singer this direct way. We ourselves were to take the highway through the Toqsun pass.

### *From Turfan to Shindi*

On the evening of March 27th we were finally ready to start out from Turfan, where the fruit-trees were beginning to bloom. We had 32 camels, a large number for such a small company; but it was necessary to make the loads lighter for

the thin and tired animals. We did not go far before pitching camp for the night. It was always a delightful feeling to sleep in tents again after having lived in a room for a time. Now that we had our own caravan we might say that the Lop-nor journey had definitely begun.

On March 28th we contented ourselves with another rather short afternoon march: from Jamchi to Ta-tun. It was here that I began the mapping of the route, that on the whole followed the telegraph-line to Toqsun. Beyond a little oasis with the ruins of a few houses the country became bare clayey soil with small *yardangs*. The next day we pushed on in sweltering heat to within easy striking distance of Toqsun. Not far from the camp on the north side of the river CHIN found a number of painted potsherds and a few fragments of bone, indicating the presence of an aeneolithic burial place here on the salt-encrusted steppe (see Vol. VII: 1, pp. 16—18).

On March 30th we passed through the little Toqsun bazaar and up the gently inclining piedmont slope towards the Chöl-tagh in the south, arriving after darkness had fallen at Su-bashi, where there was no fodder to be bought and no pasture. We knew of this beforehand, however, and had arranged for six donkeys to be sent here from Toqsun with hay and *kao-liang*. The tumble-down house had a dilapidated watch-tower in the south-east corner, an ancient feature. Through the magnificent sandstone valley, that gradually merged into a wild and narrow mountain gorge, we continued towards Arghai-bulaq (the Chinese pronounce the name Akha-bulaq). A narrow brook meandered along among the pebbles and stones in the bottom of the valley. In the course of the day we met a large camel-caravan from Qara-shahr, with loads of cotton and hides. On top of the loads two little baby-camels were bound fast; the mother-camels walked just behind, keeping a jealous eye on their offspring.

Darkness fell, and I dismounted from my camel to continue the mapping with the aid of a bicycle-wheel that I pushed along before me, counting the revolutions as I went.

Not until we had negotiated the difficult defile, with its huge blocks almost completely obstructing the valley, did we reach the serai, where the caravan had stopped. Pl. 3 b. Here we were able to buy fodder. I climbed up the mountain-side behind the inn, where there were thick clay deposits. Also on the other side of the valley, high above the valley-bed, fragments of this clay deposit still remained. It was evident that the entire valley had once been filled with clay. The slip of rock that had caused the difficult passage in the defile below the inn had ages ago completely blocked the valley for a considerable period. Beside the serai lay a little temple, probably Taoist.

On April 2nd our white camel decamped, and one of the ordinary brown-red beasts soon followed suit. Fortunately they could run only in two directions; in Mongolia, where the free steppe offered a liberty-loving camel an infinite range

of possibilities of absconding from a wearily monotonous caravan-service, an escape was more serious. But on the present occasion one of the brutes nevertheless managed to reach a point beyond Su-bashi before being caught by some Turkis. HASLUND started out in the afternoon with the caravan, while I stayed overnight, in order to have the whole day before me to map the valley in daylight. This long and tiring march was to take us to Shor-bulaq, and thither came also HASLUND. I myself did not notice when the little path to Shor-bulaq struck off from the highway, but landed up that evening in the village Qumush after a march of 100 li.

On April 4th I set out for Shor-bulaq over open desert country, with a 75-year old Turki as guide; his name was SAVAT. (Pl. 4 a). Just to the east of an abandoned house among trees east of the oasis there was a watch-tower; and after a monotonous march we finally reached HASLUND's camp at the salty spring Shor-bulaq.

The following day a 12 hours' desert march took us to Gansoho (Kan-su-ho? or, in Turki, Sukharla?), where the old Turki lived. One of the camels was so tired that it lagged a good way behind the others; so we had to spend the day here. The pasturage was good around this little village, where charcoal burning was carried on. This day chanced to be Good Friday.

On April 7th we pushed on to P'o-ch'eng-tze, also called Baishingtei, taking the most direct route. Besides three houses there were the ruins of what seemed to be a little fort. In addition to a little iron-smelting, rope-making from wool was carried on. We were surprised by a shower of rain and hail and grumbling thunder. It was said to rain often here in the Quruq-tagh, though the name itself signifies »The Dry Mountains». We hired a number of camels cheap for the remaining stretch to Singer. One of them was a dromedary, and was regarded sceptically by our camel-men: »A camel with *one* hump can't be a proper camel!» There was also a stately male camel among them, that could carry 100 catties more than the normal load. At Singer we found NORIN waiting for us.

The twelve P'o-ch'eng-tze camels were hired for the transport of our baggage the rest of the way to Shindi. We also paid a Chinese merchant to go to Turfan and from there to take camel-beans to Shindi for us; »SÖDER» was sent along with him. NORIN bought three new camels and handed his four braying donkeys over to me. On April 11th he set off southwards. The camels were kept bound for this day, and the following day they were fed with a mess of roots, a special sort of medicine that is supposed to provide a transition between old and fresh pasture, and that they must take on an empty stomach. The long hair on the neck and round the forelegs was also clipped. Strong twine is then twisted from the wool, and this in turn is made into thin ropes, the best nose-ropes that can be procured.

There was a risk that our wretched camels might not be up to a journey to Lop-nor, especially as it was already beginning to become uncomfortably hot. And

as far as that went, we were ourselves not particularly keen on the prospect of experiencing the worst of the summer heat in the burning hot desert. I therefore made some alteration in the plans, deciding to postpone the actual Lop-nor work and retire into the mountains on the south side of the Tarim basin. Here I intended to spend the summer, and go to Lop-nor only when the worst heat was over. In this way I should also get a chance of seeing much more of the country, and should be able to investigate the southern edge of the Lop basin. We thus left NORIN to work alone for the time being around Lop-nor. (As it afterwards turned out, he was also unable to remain there for long.)

Here in Singer we met the brothers ABDURAHMAN and ABDURAHIM, well known from HEDIN's and STEIN's journeys, Pl. 4 a. (They both live in Shindi now, while a third brother has Singer, which is their paternal home.) The little garden, where the cherry-trees came out in bloom on April 13th, was put under water from a canal running from a pond beside the springs at the eastern edge of a little collection of dunes near the village. On the yonder side of these dunes we found a lot of stone age tools. The arrow-heads were particularly numerous and well-made. Evidently stone age hunters had had a settlement in the sand near the springs. (See Vol. VII: 1, pp. 26—30). HASLUND carried out a number of anthropometric measurements on available Turkis.

On April 16th we left the little oasis and set out for Shindi, where we arrived on the 19th. Owing to some misunderstanding on the part of the guide, our marches had been very short. At the spring Aq-bulaq there were traces of lead-smelting. Yitem-bulaq had sold water that the cook tried to make potable by adding ginger. At Kak-su the water was better.

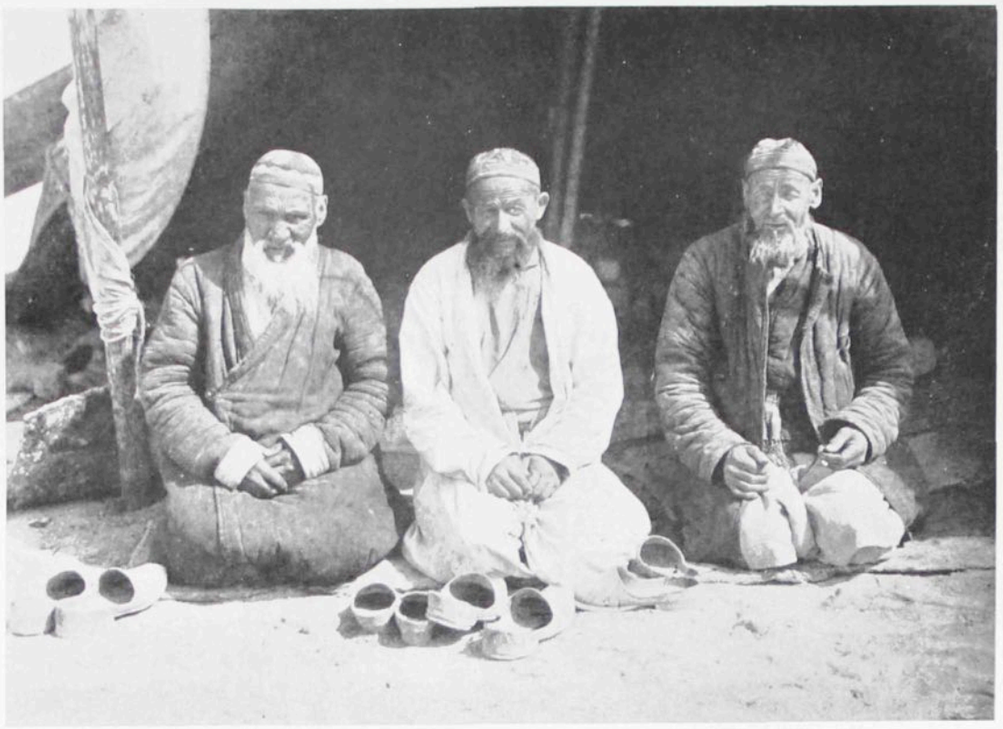
### *A Turki quadro-wedding at Shindi*

Two of the three houses of Shindi were situated quite near the spring, the terrace of which was quite white from the salt-water. There was spring in the air; the fruit-trees stood in full bloom. The other trees were also clad in their most delicate spring colours. A pleasant spot in which to await the transport from Turfan!

The Turkis were very willing to be measured by HASLUND, and thus compared favourably with the reluctant Mongols. There were, moreover, more people than usual here, for preparations were being made for a wedding. This began one evening after nightfall, when everybody assembled in ABDURAHMAN's house, where tea and bread was served. From the darkness outside young voices were heard approaching, whereupon those inside sprang up and set their shoulders against the door to prevent an entry. The new arrivals succeeded, however, in forcing their way in, and the room was filled with loud jesting and merriment. The musicians struck up a tune, and the two girls, for it was only a couple of lasses

a. *Stupa* ruin in Qara-khoja, near Turfan

b. The caravanserai at Arghai-bulaq in the Toqsun pass



a. At Shindi. Sayat, our temporary guide, and the brothers Abdurahim and Abdurahman. The polite Turkis take off their leather galoshes before entering even a tent

b. The confluence at Arghan of the Yarkend-darya (from the right) and the Konche-darya (from the left). August 28th 1928

that had forced an entry, danced a few steps and then disappeared into an inner room. The band, consisting of a stringed instrument and two hand-drums resembling tambourines, sat in a corner that was only faintly lit by a single little wick. They played and sang shrilly, and the men sitting around stood up one at a time and danced alone. Their slow movements and rustic clumsiness were well adapted to the firm rhythm of the somnolent and monotonous music. The smith AVUT from P'o-ch'eng-tze, whose features remind one of Darius II, collects money for the dancers and the musicians in a bowl in which the coppers clink and jingle when he shakes it over his head and calls out the donor's name. The dancers bow politely to the giver. When he gets a one-liang note from me there is great rejoicing, and he sticks it under his calotte so that half of it is left showing.

We stayed until eleven o'clock, and afterwards we could hear them from the tent, dancing and playing far into the night. On the evening of the following day we were invited to ABDURAHIM's house, where tea was served on the flat roof to the accompaniment of drums. A cart was driven up and covered over with mats. The musicians stood outside the door and sang: »Will you leave your homes and follow your bridegrooms?» — »No, no, no!» shrieked the two girls from within. But they were carried out, wrapped up in gaily coloured cloths, by women, and perched up on the carts. Some other women also climbed the carts. The musicians jumped up behind and off they went. But only a few steps, for the menfolk appeared with ropes and barred the way, seizing the horse by the bridle and endeavouring in every way to prevent the cart from leaving the yard. But the burly blacksmith AVUT, who seemed to be in charge of everything, whipped up the horse, the bridegrooms pushed the spokes of the wheels, and after slueing about a number of times the conveyance had bumped its way over stones and pot-holes, tussocks and canals to the other house nearby, that was supposed to represent Singer. All this took place to the accompaniment of lamentations and weeping on the part of the brides. Outside the house burned a fire, through which the cart must be driven, so that the newly arrived brides should »feel warmly» for the new home.

The girls, who were only 9 and 10 years old, were ABDURAHMAN's daughters, and were to marry their cousins from Singer. Another horse was now harnessed to the cart, and other mats were spread out on it — preparations for the next wedding procession. This time it was two girls from Singer, sisters of the bridegrooms, who were to make the journey over to their waiting bridegrooms, brothers of the first two brides. Thus a further double wedding between cousins! These two were rather older, girls of 13 and 14, and very beautiful. Their husbands-to-be were tall youths of scarcely 18 years. Exactly the same ceremony was now repeated. This wedding took place on the appearance of the new moon.

Afterwards we were invited to ABDURAHIM's house, where we were given tea

and food and there was more music and dancing. ABDURAHMAN, of whose eleven children four were now marrying at the same time, was over 60 years of age. He had shot 60 wild camels and over a thousand argali, he declared. His brother ABDURAHIM had shot 140 wild camels. Their guns, now adorning the walls, were ancient muzzle-loaders with long forked supports of wood. In the mountains around Shindi there were bears, too, they told us.

Two days later the Singer crowd left the scene of the wedding. A woman had bound her two small children one on either side of a donkey, where they hung in their bundles like ordinary baggage. The brides wept. This time their grief was unfeigned, and several of the women also shed tears at the parting. Indeed, even old ABDURAHMAN, for all his dignity, was unable to restrain his tears when his little girls departed from their paternal home.

The Shindi of that year had been founded 10 or 12 years before, and consisted of three houses for as many families — a fourth was being built for the newly-weds. Actually it was more than four households, for several young families were still living with their parents. There were plenty of cows and sheep, as well as some camels and a few horses. In the mouth of the valley that begins just to the south of the village, and into which flows a little brook, there are the remains of an older Shindi on a small rock — the ruins of a watch-tower of considerable age. Beside these ruins are the indistinct remains of houses. A small burial ground here is probably Mohammedan.[1]

### *Out of the Quruq-tagh*

On the 26th »SÖDER» finally arrived with the hired donkey caravan and the camel-beans. The following day we set off southwards along the winding lovely valley of the Shindi brook, that had never been mapped. As it forms, deeper in the mountains, an impassable waterfall, we had to leave the valley with its rich vegetation and climb up among the sterile rocks on the right side. The country was very unsuitable for camels, and progress was laborious and slow. It took our little caravan four hours to cover a little stretch of 1500 m. In several places we had literally to build a road or shift huge blocks. The forelegs of the camels were rather badly knocked about; the Mongol camels were so used to the plain that they could not get into the way of lifting their feet. The newly purchased camel from Shindi, on the other hand, was accustomed to mountain country

[1] According to the two brothers, the place-name Shindi was Chinese. If this is so it ought to be written Shen-ti, as STEIN has suggested (»Innermost Asia», p. 728). In Mongolian the place was called Khulustei, which is The Reedy Place; but what they gave as the Turki name, that I recorded as Bödjénte (Budjente), is more difficult to explain. It reminds one of Bujentu (or Buyantu) in the name of the Shindi river, a name that we have accepted as Mongolian. But there may be something in STEIN's suggestion (op. cit., p. 752) that this name of the river is a corruption of Bejan-tura, The Lonely Tower.

and managed much better. But we had to take off the loads from all the camels, and the feet of our Mongol animals had literally to be lifted up the steps in the rock. In places the ravines were too narrow for loaded camels. On a rock in the broiling sun basked a lizard, about a foot in length. Probably it was creatures like this that Russians in Urumchi referred to when they spoke of Lop-nor's crocodiles, a mild exaggeration, to say the least.

After this difficult stretch we got back into the valley again, with its wealth of tamarisks, poplars and rose-bushes, and the cheerfully purling brook. The latter was called Bujentu-bulaq.

On the morning of April 28th the drizzle of the night became a real downfall. Presently it was snowing, and this continued until 5 p. m. Everything became winter-clad; bushes and trees looked strangely transformed with snow on the light leaves. The mountains assumed an alpine appearance and the stream swelled to two or three times its previous volume, till a brownish soup filled the entire bed. Thin veils of water came gauzing down the almost vertical sides of the valley.

We had almost reached the mouth of the valley; and the following morning we were out on the *sai*, the slightly sloping black gravel plain to the south of the Quruq-tagh. By ten o'clock we had already arrived at Ying-p'an's one-time post-house, now a ruin. We spent the day going over the ancient ruins of the Buddhistic buildings (all the stupas were destroyed) and the round, rather impressive ancient fort in the vicinity, near which there was a damaged Mohammedan burial ground.

On the western side the circular wall had been eroded by the Bujentu-bulaq over a stretch of 40 m. Inside, in the remains of a little house, were two fragments of a millstone.

The ground was still moist after the rain, and it was evident that a stream of water had reached thus far in the bed of the Bujentu-bulaq. The water-filled reedy pools, that in shape remind one of an old river-bed, though they need not have been such originally, are fed by springs. On the salty surface of the ground we found one or two ancient objects. The air actually seemed to reek of salt after the rain.

### *The new lower Tarim*

On May 1st we covered the few kilometers separating us from the Qum-darya, the new course of the lower Tarim. We left the belt of trees around the pools, coming out on the tamarisk-covered clay plain, at first white with salt. The rain had made the ground slippery, and in one depression the camels floundered dismally. They sank a foot deep in the mud. The donkeys could not get through with their loads on. On the left, dead trees stretched their naked trunks out of the partly sand-

covered clay plain. After crossing a low dune we were suddenly confronted with the broad, magnificent river, about which HEDIN had heard in February. We now had optical proof of its existence, though it was situated rather farther south than we had believed. This was the old Quruq-darya or Qum-darya, that was once more carrying water. It had begun in 1921 or 1923 (accounts vary). At the sides the river is shallow and filled with mud-banks, though the bed of the current is about 2 m deep, and the speed is quite considerable. At our camp 147 the river described a big arch and was 250 m broad. On the south side there was a big field of sand-dunes, which had evidently had a decisive influence on the course of the new river.

At this point there was a ferry, plied by a fisherman from Tikenliq. He had three canoes in all. The actual ferry consisted of two such boats bound together side by side. There was no difficulty in taking the donkeys over; but the camels were a tougher proposition. With their awkward, bungling clumsiness they could not be accommodated in such a primitive ferry. We led one of the animals out into the water, to see if there was any chance of its wading over. By the time it had reached a depth of a meter it was lifting its feet as if it were trying to climb over something — (perhaps it had learned this pathetic gait in the Quruq-tagh?). The ferry was waiting as near the bank as it could get, but as soon as the camel got into deep water it lost its foothold and lay on its side, and ferry and camel began floating down the stream together. The fellows were unable to get both over, however, and had to return to the bank. This experiment cost us two hours. By filling the canoes with saddle-felts, we managed to get a couple of the quietest animals to lie down on the ferry and freighted them over one at time. But the craft was very low in the water, and if the camel had become frightened there would have been a catastrophe, for none of my fellows could swim either. In connection with one of the loadings a camel got stuck in the mud, and it seemed that we should never get him free again. It was not until we had three canoes tied together that we managed to get the animals over. And it took an unconscionable time. It was not before May 6th that we could leave the river. During these six days the level of the water sank at least 10 cm. High water in the river comes in August and lasts till October. Three Turkis arrived from the north with 200 sheep. On the south side there is a little lake, possibly a cut-off arm of the river where new reeds flourish. A crane and several kinds of wild duck haunted here. There were also swallows and a few other varieties of small bird, frogs, gnats and other little insect-pests.

We started off southwards in the level sand desert on the afternoon of May 6th. The dunes were few and far between, and no more than five meters in height, after which they diminished in size. We passed lots of dead tamarisks and scattered groves of dead trees. In among the reeds we found a mere surrounded by verdant tamarisks, whose reddish violet sprays filled the air with a

lovely fragrance. Deeper in the desert, where the dry bushes were sparse and the clay undersoil was exposed in places, a series of signposts began. In a square sort of plinth of bricks over a meter in height a long pole was fastened. The distance between these so-called *p'u-t'ai* was about 1 li. When we had passed about four or five of them we came to a yurt-like brick building, a gumbaz, with a door opening to the south. Inside this storm shelter lay a deep layer of sand. There was also a well here, P'u-t'ai-quduq, which dried up when the water went over from the Konche-darya to the Qum-darya.

The following morning we reached the Konche-darya, now a very insignificant river with a well-marked bed 17.7 m in breadth and with a maximum depth of 2 m. The speed of the current was minimal: 4.5 m a *minute*. At the sides there were very shallow furrows that had probably carried water a long time ago.

Getting the camels over was an easy matter. A long rope was flung over the river and bound to their nose-ropes, whereupon they crossed over without offering any resistance worth mentioning. The last ones even crossed voluntarily. The same ferryman as at the Qum-darya did the ferrying here too, where he had two slender Lopliq canoes. (Cf. Tafel 8 in A. HERRMANN's »Lou-lan», Leipzig 1931).

We left this quiet river behind at six o'clock in the morning on May 8th, taking a south-westerly course over reedy grass-land. Now and then we caught sight of a family of wild pigs at a distance. The yellow reed-beds, standing in places as much as 5 m in height, resembled fields of ripe rye of some unknown giant species. They were magnificent in their monotony. Out of pure mischief the cook set fire to a reed, and it flamed up at once. In no time, even with the faint wind that was blowing, it had turned into a huge conflagration with billowing blue-black smoke. Fortunately, the blaze seemed to have died down before we were out of sight.

### *The old lower Tarim*

Just where a little arm from the left (N. E.) flowed into a river-bed bordered with trees there was a group of reed huts, from which curious faces peered out as we passed by. Soon afterwards we had reached the village Tikenliq, straggling along the south bank of a branch of the Tarim. Without transition we found ourselves surrounded by the blooming exuberance of high summer, with green leaves, flowering bushes filling the air with fragrance, and juicy grass. We encamped a little way beyond the village on the bank of the Ara-tarim, a shallow stream flowing slowly in a well-marked, not very broad bed.

The following morning four dignified Turkis came on a visit. They were the head-men of the nearest villages on our route to the south, and desired to place their services at our disposal. It was evident that preparations for our arrival had been made at the instance of the authorities in Urumchi. The same day

we were regaled with a dinner at *hsiang-yeh* YUSSUF's (= JOSEPH) house in the village. After tea and bread, boiled mutton was served. Our host did the carving himself, afterwards serving us with his fingers; and we ate the meat with similar implements. The next item on the menu was a solid portion of *ash* (rice boiled in fat and with mutton, carrots and raisins). In the course of the meal our host's old father came in and made his bow, and several contingents of elderly gentlemen were let in as observers, but they were not offered anything to eat. (Was this to let them see with their own eyes that the meal to which they had all contributed their mite was not being scoffed by the host alone?) Two servants in sheepskin caps and long wadded coats were instructed to keep us cool by fanning the air with a big ragged cloth. Our host assured us that he owned 10,800 sheep, 600 cows and over 100 horses, but as for the authenticity of this I know only that it is extremely doubtful.

The following day he came to our camp and asked us to write a letter to the magistrate in Yü-li-hsien, his immediate superior, to certify that we had been well received and taken care of, and that Tikenliq was a good place. We complied with this request, but could not resist the temptation to append illustrious titles to our signatures. I have sometimes wondered what happened to this document, and whether anyone who could read English ever got hold of it! If anybody did he must have got a laugh.

A number of anthropometric measurements were carried out, despite the summer heat, on the Turkis in this region. Plate 5 shows two pictures from Tikenliq.

On May 11th we started off again, landing up after sunset in the vicinity of the modern ruins of Dural. On account of the heat we had begun to use the Chinese caravan practice of not setting out until late in the afternoon, and then continuing long after dark. This prevented my making a route-map with an unbroken sequence, true; but as STEIN's expedition had mapped the main route to Charkhliq, that we were to follow, and HEDIN had mapped the courses of several branches of the lower Tarim, the loss was perhaps not so great.

In the morning we were woken up by the sand blowing into the tent. The wind had changed over to the north-east and was fairly stiff. It increased to a gale as the morning wore on, and prevented us from setting out. The drift-sand was a plague, and everything in the tent was covered over with a thick layer. The heat was so oppressive that it mattered little that the cook could not provide anything beyond boiled eggs, for we had no appetite anyway. I rummaged about for something to read, and found some old newspapers (last summer's copies of Svenska Dagbladet and a Christmas paper). It was quite a treat to re-read about LINDBERGH's Atlantic flight and various other items of »news» that one had studied several months ago and on divers occasions since. That evening we went to sleep with a growing »quilt» of sand over us. The storm raged the

whole night and the greater part of May 13th. In the morning the dunes inside the tent were 30 cm in height.[1]

The walls of the houses in Dural were still standing, but the woodwork had been taken away. Just near the village there is a fortress surrounded by a wall. The latter, which is crenelated, is about 200 × 200 m and makes rather a powerful impression. Inside are the remains of a few houses, including a Chinese temple. The Mohammedan burial ground lies about 500 m from the village. At the time of our visit only two families were living in the neighbourhood. The population of Dural moved to Charkhliq in the 1880's.

It was a deuce of a business getting all our things together when we were ready to start, for everything was literally buried in sand. The chests that stood on the sand had taken a heavy list in the direction of the wind, for the sand to windward had been swept away, and a dune had been formed on the leeward side instead.

After leaving Dural behind we passed two dried-up river-beds. A bright band glimmered in the dark just to the right of the route. If this was not the Yarkend-darya, i. e. the Tarim proper, it must have been a broad branch of it. Beautiful old poplars bordered its banks, and thickets of tamarisks formed the under-vegetation. I felt as if I had been transported to a Swedish park on a cloudy late summer night, for the atmosphere of mystery and romance was exactly the same. But it was a transient reminder, for we were soon out of the grove again and crossing a number of tributaries to or canals from the Yarkend-darya, with wretched bridges. We pitched camp after midnight at Yangi-su.

Rather early the following morning the villagers began to pay their respects in the concrete form of a sheep, two chickens, a couple of dozen eggs and raisins. We accepted these gifts and expressed our thanks in our pyjamas.

We carried out some anthropological measurements and dispensed some of our little supply of medicines to the sick. There were said to be 25 families in Yangi-su, that was the first village on this route that lay within the Charkhliq district.

The road led at first more or less due east, on the left bank of the dry Yarkend-darya. The bed was filled with sand-dunes that had been formed by east

[1] Readers of HASLUND's description of this journey in »Zajagan» may easily get an impression that we travelled in luxury and comfort from some of the flights of his glamorous pen. Thus, on page 240 of the Swedish edition, speaking of our common tent, he says: »The floor of the tent was covered with genuine Khotan carpets, whose lovely colour designs copied Nature herself. Our azure sleeping-bags lay like ottomans on either side of a low Chinese lacquer table. — Our tea was served in old copper pots of noble shape, and we drank it from silver-mounted cups of birch-wood.» Although my own heart is not altogether alien to poetry and romance, I cannot but admit the facts that the mats were ordinary Turkistan felt mats (though they, too, had very lovely colours — later on I also bought a beautiful genuine carpet, but it was only on very particular occasions that it was spread in the tent); that only HASLUND's sleeping-bag was blue; that the table was of unpainted wood and rather clumsily knocked together, and that we drank our inordinate quantities of tea from the rather chipped everyday service of the expedition: mugs of white enamel with a blue rim.

winds; and here and there was a moist spot that in some places took the form of a pool of water. It was evident that the irrigation canals to Yangi-su sucked the dwindling Yarkend-darya quite dry. During the evening the pools of water in the river-bed gleamed faintly through the dark (though I am by no means certain that it actually was the Yarkend-darya all the time). Just before midnight we were led by a fire to the village Qara-dai.

Here, too, we were presented in the morning with sheep, chickens, eggs and raisins, for which, however, on finding ourselves alone with the respective donors, we nevertheless paid. Strangely enough, it was quite chilly that night, and I had to creep into my sleeping-bag. We carried out some anthropometric measurements and practised a little quackery with some gouty old fellows who assembled from the thirty houses of the village. Just near Qara-dai there were several meres in the half dried river-bed (Konche-darya?), in which there was no running water. During our southward march we came upon the river half-a-dozen times, finally encamping in a bend with stagnant pools. This place, Toqumanla (on the Konche-darya?), was uninhabited.

On May 16th we continued to Arghan. The camels and horses were much troubled by a kind of tick called *saldjack* (*saljak*), a flat camel-louse of extraordinary vitality that buries its head in the skin of the animals. If it is pulled out, the head is left behind, and if it is left undisturbed it swells into a bag the size of a grape. They also attack people, and one must be continually on the alert to catch them before they get a chance to bite themselves fast.

At first we followed the river, whose bends we skirted five times. For practically half the way poplars grew densely, and when we crossed open spaces we always had a green line of trees on either side, probably marking the course of arms of the river. The country was on the whole flat, though somewhat broken by the occurrence of *yardangs;* the ground had a thin covering of sand in which ancient poplars grew. Two long since dried up river-beds were crossed in the dark, and by 11 o'clock we had reached Arghan, with its two small houses and solitary reed hut. We were received with profound reverences by a Turki, who conducted us to the better of the two houses. Here a Chinese who had been sent out from Charkhliq offered us tea. He had ridden here in four days simply in order to meet us! He presented us with a sheep on behalf of the magistrate and told us that grain for our animals was on the way, as this would be unprocurable during the last part of the journey. One felt really confused by all this beneficence.

Arghan is important as marking the point where the Yarkend-darya and the Koncha-darya flowed together, and it is given on all maps. According to the local people, the Yarkend-darya had not carried water for four years here; later on I heard 6—7 years. Pl. 4 b shows the stagnant pools at the point of juncture of the rivers (see also p. 73).

On May 17th we started at dusk, heading almost due south through woods of poplars and over fields with big thorny bushes and licorice plants in blossom. We skirted the river twice, and after we had crossed a little dry arm the country opened out to the west and the nearest high dunes in the Takla-makan's endless sea of sand became visible. We passed dead woods and yardangs, finally pitching camp on an opening at Armonchoq with 16 km behind us. (On BYSTRÖM's map Almonchuk).

Although the camels had been freed from vermin the previous day, they were once more swarming with these flat, eight-footed little pests. They seemed to be everywhere in these regions. I had been wondering why some of our animals when marching had been »marking time». The explanation was that the ticks had bitten themselves fast between the toes of the camels.

Between camps 157 and 158 (May 18th) we struck the river a couple of times, and crossed clay plains without a trace of vegetation. Almost the whole way there was a thin layer of sand on the ground. Just after passing a house we found ourselves on the river-bank in the most idyllic little wood at Toqum. There was a deep pool of water in the river-bed.

On May 19th we continued along the right side of the Tarim, that soon swerved off eastwards, however. A little later we traversed rather a broad arm of a river with some pools in the bed that the guide referred to as lakes. (These were perhaps bends that had become isolated from the main stream?) The most westerly of them was called Achiq-köl. On leaving the wood behind we came to a broad belt of tamarisk-cones around which drift sand had collected. Farther south only dry bushes were left on the cones, and there, too, was a dead wood. About 1 km to the west there were huge dunes like a wall of sand. By the time we had put another couple of wooded belts behind us we had reached Yeken-buljimal (STEIN's Liken-bujumal), where the remains of a house stood on the bank of the Tarim. There were some pools in the river-bed; and here we pitched camp, surrounded by small-grown, leafy poplars.

On the anniversary of the expedition's start from Pao-t'ou we set out despite a stiff E. N. E. wind with driving sand. The wood began to grow thinner, and tamarisk-cones with drift-sand around them began to appear on otherwise bare clay plain. We encamped at Qurghan, where a Turki from the magistrate of Charkhliq handed over hay, maize and a score of eggs. The postal rider stationed here gave us a hen and goose-eggs. The latter, as we discovered later, were intended only for the propagation of the species, but not for food.

The next day was very hot. At Qurghan, with its little ruined fort, we left the dry and dying Tarim definitively behind us, and set our faces to the S. S. W. There were now no more trees, and the vegetation consisted solely of tamarisks and reeds. Long stretches were quite sterile. We called a halt near Lop, a village with a couple of miserable houses.

The following day the weather was so remarkably cool that we were able to make a start in the morning. Three Turkis from Charkhliq handed over a sheep, eggs and a sack of maize on behalf of the magistrate. Beds of reeds extended in every direction, and here and there there were traces of salt on the clay. We had never seen such swarms of camel-lice as at Lop. We passed a small and a larger bridge over a couple of inconsiderable watercourses. The water in them tasted bitter; the name was Takhta-qumruq (quruq?). After another quarter of an hour's march we came to a third little bridge. Off to the right began open water — little meres one beside the other, about 300 m from the road and extending westwards as far as the eye could reach. After a while we had water also on our left. From 1.30 p. m. onwards (we had started at 11.40) we were traversing a broad expanse of water. This was the first time I had been out on a lake in Asia, and it seemed queer to be doing so on camelback. But with the pitching and rolling beneath one and the sea-air one almost had the illusion of a voyage in a boat. The air was swarming with terns, gulls, mallards and cranes, as well as a number of medium-sized black and white birds that I did not recognize. The water was a foot deep; wading through it the camels took only 57 steps a minute, as against their normal 70—75. After three-quarters of an hour we were up on dry land again. Lake Qara-buran is thus 2.5 km where the route crosses it. By 2.20 p. m. we had reached the disemboguement of the Charchan-darya into this lake. The water in the two broad arms of the river was sweet. We rested here for some hours, and then pushed on through a small flooded area with a depth of about a decimeter. More or less soft mud-banks emerged from the surface, dividing the water into small meres. The soil was completely sterile. This lake was called Karavaji, »The Still Waters». It took us at least half an hour to cross, though it was scarcely 2 km in extent. In another half-hour we had left the whole lake region behind us. Later in the evening we crossed a river, the Tayir, whose stream was over half a meter in depth. (This may have been some branch of the Charkhliq-su). Darkness had fallen by this time, and one could scarcely make out whether some light patches to the south were alluvial clay or water.

Getting up at four o'clock on May 23rd was a shiversome business. We marched over a completely sterile clay plain reminding one of a ploughed and frozen field. The surface was salt-encrusted and as hard as iron. Just as on the previous day the route was strewn with the carcasses of camels, horses and donkeys — this was the worst part of the way. After a couple of hours we reached a belt of small bushes in the broken salt-crust; and when this came to an end tamarisks and little cones began. In a diminutive oasis we were stopped by two men. In the shade of a leafy poplar a felt mat was spread out, while a wooden bowl with lovely sour milk (*qatiq*) was set before us. A Turki recommended us to eat it with pieces of bread instead of with spoons, and this was easy enough, the bread

being thin and the milk thick as junket. It was a delicious lunch! Round about was the finest pasturage, so our beasts, too, had a treat.

### *Charkhliq*

The rest of the way to Charkhliq we were passing through groves, green fields, avenues and scattered houses. At a newly erected house we were stopped by a group of elderly Turkis who invited us to step in to drink tea and eat a little. The most dignified of these grey-beards was QURBAN BEG, a stately old fellow who was the chief Turki in Charkhliq. A house had been prepared for us in the bazaar, and thither we were conducted with groaning stomachs and faces creased with satisfaction, through avenues of Lombardy poplars and between rows of Turkis in motley attire who rose politely as we passed by. The house was large and pleasant (it belonged to QURBAN BEG himself), and the courtyard was shaded with a roof of leaves on a high wooden framework. The floors of the rooms were spread with fine carpets, and everything had been done to make us feel like little fairy-tale princes in this our first genuinely oriental oasis-town.

We remained in Charkhliq until May 31st. The magistrate, a Mr CHANG, placed difficulties in the way of our projected round-tour in the Astin-tagh, the mountain tract to the south of the town, as we should there be beyond his jurisdiction and, as we found afterwards, also outside the border of Sinkiang. It was only by dint of long negotiations and after he had been exempted from all responsibility for us that he yielded. Our next goal was Temirlik, near Ghaz-nor. A young Turki, ETT AHUN, we took over as a guide from a Russian emigrant by the name of SMIGUNOV[1], who had just arrived from that place on his way to Urumchi. In exchange, he took FU, one of our Chinese camel-men, back with him.

I planned to make a round-trip up in the mountains during the worst heat of the summer: over Tash-davan to Temirlik, and thence westwards to the upper reaches of the Charchan-darya, afterwards going down to Charchan and returning to Charkhliq via Vash-shahri. This route would afford good opportunities of supplementing existing maps, and I also hoped I might make archaeological finds. The trip would also bring us into contact with the Dede-Mongols at Temirlik, whom HASLUND hoped to use as subjects for his anthropometric measurements. From a Chinese caravan on the way from Kansu to Khotan, that was being detained in Charkhliq, we hired eight camels that were in better condition than our own. We should thus be able to leave the most worn-out of our own beasts to rest and recuperate as soon as we came to a spot with suitable pasturage in the mountains.

[1] This STEPAN IVANOVICH SMIGUNOV, who carried on a trade with furs, travelling as far as to Khara-nor in the Nan-shan, is more fully presented in PETER FLEMING's »News from Tartary», London 1936.

On the day of our departure a three days' festival, Qurban-ayit, was begun. This was supposed to correspond to ABRAHAM's sacrifice. Every family slaughters a sheep, observing special ceremonies in this connection; and people come flocking from the entire countryside. In the back-yard, where we had had the camels, a high pole had been erected the evening before. To the top of the pole was affixed a cart-wheel to which two cross-pieces had been bound. From the ends of the latter four ropes dangled, while red cloths and a camel-bell were hung round the wheel. The finished product was thus a crude merry-go-round, with »music» and all. See Fig. 3.

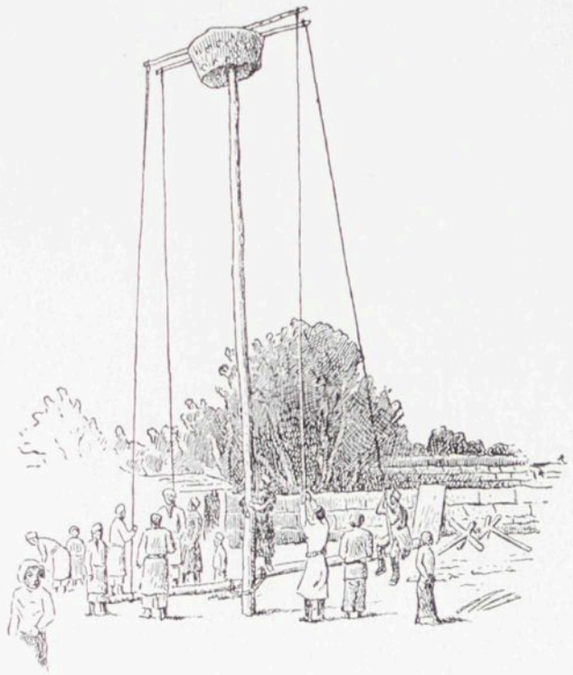


Fig. 3. A primitive »merry-go-round» being arranged in Charkhliq in preparation for the Qurban-ayit festival

### *From Charkhliq to Temirlik via Tash-davan*

On May 31st, however, we set off eastwards in the evening across the barren piedmont slope of the Astin-tagh. The nearer we approached the foot of the mountains, the stonier and the more furrowed with dry stream-beds did the slope become. On June 2nd we reached Jaghan-sai, quite a rushing little mountain-stream with a fair volume of water. Here the elders of the village Miran, by order of the magistrate of Charkhliq, had sent a sheep and four sacks of hay. The stream, whose water was chilly, fed the Miran oasis, and any surplus water enters Qara-qoshun.

On the afternoon of June 3rd we climbed up to a sandstone plateau that was very deeply cut up, providing us with an endless series of ups and downs. We pitched camp among small tamarisks.

The following morning we started at 4.30, and by 7 o'clock we were crossing the deep-cut ravine Chuqur-chap or Chuqur-sai.[1] The camels found it rather a job to slither down the steep side of the ravine, about 30 m deep — and still more of a business to clamber up the other side. During the heat of the day we rested on the plateau 1—1.5 km from the foot of the mountains. High up in the crevices in the rock lay yellow dust, probably brought there by the wind from the clay sediments of the Lop-nor Desert. One just faintly glimpsed the ruins of Miran in the distance, in the direction N 3° 30′ W.

We crossed a number of little ravines and one bigger gorge, Yete-chap, that was supposed to go past the ruins mentioned above. And finally, we negotiated

[1] See picture in BONVALOT, »De Paris au Tonkin à travers le Tibet inconnu», Paris 1892, p. 135.

the great ravine Auraz, that in the course of ages had been carved to a depth of over 100 m in the alluvial cone outside the foot of the mountains. It was a pity that the day was so far advanced that it was impossible to photograph the stately spectacle of the caravan winding down this gigantic steep. To get the animals up the other side was an enterprise that cost us many hours and many unloadings. In parts, the loads had to be carried up by the men. By the time we reached level ground again we were more than ready to call a halt, and we pitched camp at once on the eastern side of the ravine. That we had climbed to a fair altitude could be felt in the air, that was colder and clearer than in Charkhliq. Unfortunately I had no sort of instrument with me to determine the altitude.

Fig. 4. Camp 169 at Sai-bulaq in the Astin-tagh. The spring is situated in the small valley behind the tent

The next morning we followed the eastern side of the ravine. We were on a rising incline, and presently came into drift sand. On the northern side of Qumdavan the incline became steep. Although this pass (only a secondary pass to avoid an insuperable obstacle down in the ravine) was not particularly high, it was very trying to cross it on account of the sand[1]. We had, moreover, not yet become accustomed to the altitude, and soon got out of breath. The southern slope was both steeper and longer than the north side, owing to the fact that the road once more led down into the gorge of the Auraz. The latter soon swerved off to the east, receiving a lateral valley from the right into which a path led.

By one o'clock we had reached the little spring Sai-bulaq, in the midst of wild mountain scenery. Fig. 4. The wind howled and whistled in the jagged peaks as if they had been tree-tops. The steep walls of rock rising up around the camp were covered with a muddy clay: eolian dust from the Lop Desert. The

[1] According to CAREY the altitude of Qum-davan is 3,262 m. In his »Scientific Results of a Journey in Central Asia» HEDIN has regarded this pass as marking one of the two ranges forming the Astin-tagh. Along the road I followed one gets no impression that there are two chains, and, as stated above, the pass Qum-davan is no real divide.

There is a striking picture of the wild nature of the Auraz gorge near Qum-davan in BONVALOT, op. cit. p. 137.

ground, too, had a layer of the same fine dust, that was whirled up by every puff of wind. Tiny dry bushes grew in the valley, and the camels contented themselves with this pasture, though it could scarcely contain much nourishment. The source lay in a little side-valley. The water had first to be scooped up in a bucket, that was then lowered over a steep 3 m high and emptied into a barrel. This was then carried on a pole borne by two men for 100 m. There was not the slightest possibility of watering all the camels here. And before us we had a waterless stretch that it would take three days to cover.

We started out in the afternoon. Just east of the camp a large valley led southwards. The valley bottom was broad enough, and flat; but in its cement-like conglomerate water had carved a canyon which in places was no more than a meter in breadth at the surface; it widened downwards, however, and meandered along at a depth of 10 m half underground. The glen is so to say two-storeyed. If one of the animals had tumbled down it would have been a goner. We proceeded slowly, gaining altitude the whole time, and pitched camp in the dark, without water and without fuel. The only drink we had was the cold tea in our flasks, that tasted vile, as the water was bitter.

I kept on waking up that night with a feeling of suffocation, just as if I had forgotten to breathe for a while. I was not yet accustomed to the thin mountain air. From this camp, no. 170, CHIN was sent on ahead with the horse, the four donkeys and the dogs to the water-carrying river on the other side of the pass Tash-davan, in order to save our supply of water.

It was cold in the morning. The valley contracted; the canyon was carved deeper, and the ascent was hard going for the camels. For the first time that year we saw the lovely little blue Iris that borders the caravan routes in Mongolia. Here and there was a little clump of a Sedum species with white flowers. One of the camels grew tired of the climbing and had to be left for the time being. He was followed by six others. The loads lay just where their bearers had to be freed from them. Just before eight o'clock we reached the foot of the steep pass, and realized that it was impossible going on like this. All the camels were unloaded and remained exhausted between the loads, too tired to rise.[1]

A little way below the pass were the memorials of the tragedy that occurred here on March 6th. On a little beautiful terrace just where the valley bifurcated lay the graves of the two fallen comrades of the Russian SMIGUNOV. His fellow-countryman MAKEEV rested under a stone rectangle enclosing a cross of stones.[2] MAKEEV's Turki companion lay under a similar rectangle with a stout pole upon which a horse's tail had been hung, according to the Mohammedan

[1] BONVALOT's caravan apparently stopped at exactly the same spot, and probably for the same reason. Cf. the picture on p. 143 in his op. cit.

[2] HASLUND afterwards put up a Russian cross of wood. See *Zajagan*, fig. on p. 255.

custom. As SMIGUNOV had told us, they had succumbed to mountain sickness. When he had arrived here eleven days later they lay covered under four meters of snow. The Russian's horse had stopped beside his fallen master.

But now we had to get our stuff over. There was little enough prospect of the camels' managing to carry it over. HASLUND therefore made the following arrangement: the eight best camels were to remain on the hither side of the pass with three men, who were to collect the loads that had been left along the ascent, and then try to get as many of these over the pass as they could. We others, meantime, were to go over to the first place with pasture on the other side. The five next best camels were to be lightly loaded with bedding and tents and the barest essentials from the kitchen equipment. The others were to go unloaded. At nine o'clock we got started. The climb was so steep that it was not possible to pace the distance. The path wound in zig-zag. The carcases of three camels lay close beside one another and emitted such a disgusting stench that if our animals had not been so tired they would certainly have refused to go past the place. A lot of big eagle's or vulture's feathers bore witness to what must have been a battle royal between the scavengers. With shouts of encouragement the three loaded camels were driven up. The higher we got, the longer and the more frequent did the rests become. In one place there was no path, so that the animals had to be led past with the greatest caution. If they had taken one false step they would have been lost. One of the camels became so exhausted that the poor beast had to be dragged over the last bit on its fore-knees — it was unable to stand erect.

From the pass, that according to STIELER's map has an altitude of 3,960 m,[1] a jagged mountain landscape extended in every direction. Unfortunately, the air was rather misty, so there was no point in awaiting the arrival of the camera. In every direction extended magnificent mountain scenery of peaks and ridges free of snow and quite bare of vegetation. There was a bitingly cold wind, as there is, indeed, on all passes. We noted no symptoms of mountain sickness, except that our pulses were rather more rapid than usual. At 10.33 the descent began. This took 37 minutes. The path on the south side was considerably better, and ran in a regular zig-zag. We trudged along in a valley that became deeper and deeper, until we reached a spot that was sufficiently broad for us to call a halt. There were some small bushes and grass, and here we pitched camp for the night in the open air.

It was of course sheer lunacy to take a camel-caravan over this pass; but certain deficiencies in BYSTRÖM's map to HEDIN's *Southern Tibet* made me determine to take just this route. And our only means of transport was our camels.

On the morning of June 8th we left camp 171, continuing down the valley and

[1] This probably derives from HAUDE, who went over the pass later, or else from CAREY. PIEVTSOV gives 3,808, and BONVALOT 5,200, which latter is certainly too high.

then striking off south-west to another valley. Over a small divide and a clay plain we came to a clear, rushing stream, where we soon found CHIN. The river was the upper reach of the Jaghan-sai, i. e. the Miran river. The camels fell upon the green bushes with keen appetites. In the course of the evening our eight best camels arrived with tent and provision chests. Not even these animals had been able to carry the loads over Tash-davan; the men had been obliged to haul them over themselves.[1]

Before sunrise the next day HASLUND and a Turki returned with the horse and the donkeys, intending with these to bring over sacks of flour and such small loads as they could bear. After four days, during which I went on mapping tours in the surrounding country, he returned bearded and unkempt, but glad at having got the rest of the caravan over the pass.

Another name of Tash-davan (Stone Pass) is Yaman-davan (Goat Pass). And HASLUND, true enough, saw a great number of *kuku-yaman* or *Pseudovis nahoor* there. The three weakest camels were taken down to Auraz-bulaq where they were left to pasture in the deep ravine. We intended to fetch them afterwards from the north. There was not a hope of getting them over Tash-davan, even without loads. And they were too weak to stray far from the spot where they were left.

A company of Turkis from Miran passed us on their way into the mountains. As they were travelling with horses and donkeys they had had no particular difficulties with Tash-davan. The air was simply laden with yellow dust, evidently whirled up by a storm down in the Lop-nor basin.

On the 15th it rained the whole night, and the saddle-felts were so drenched that our start had to be postponed for a day. HASLUND had difficulties in breathing during the night and was in a pretty bad way. During the day I also had a touch of the same trouble as soon as I did anything strenuous, and my heart, too, made itself felt.

[1] If one compares BONVALOT's itinerary with ours, one finds that he, too, made slow progress with his camel caravan. On November 19th he arrived at Jaghan-sai, the following day at Chuqur-sai, and rested on the 21st. He reached Bulaq-bashi (which must correspond to Auraz-bulaq) on the 22nd and crossed Qum-davan the next day. On the 24th he was in the vicinity of Tash-davan, negotiating the pass on the two succeeding days and arriving at the upper reach of the Jaghan-sai on the yonder side of Tash-davan on the 27th.

It is doubtful whether BONVALOT went up the Chuqur-sai as BYSTRÖM's map (sheet VI) indicates. Since he had passed Qum-davan and afterwards crossed Tash-davan, he must have proceeded to Auraz and up its ravine just as I did myself. The name Auraz-yilgha is placed too far east on BYSTRÖM's map. Most probably Chuqur-sai ought to lie farther west, and Auraz-yilgha should take its present place.

CAREY's and DALGLEISH's route coincides with BONVALOT's.

That on the above-mentioned sheet VI BYSTRÖM represents the river Jaghan-sai as flowing directly over the pass Tash-davan has to the best of my knowledge been remarked upon by no-one. The mistake has not been observed because the pass has not been specially marked in. As a matter of fact, the two rivers enclosing the mountain Shia-manglai (i. e. N. W. Ilve-chimen) join to form the Jaghan-sai or the Miran river. This flows rather a long way to the west of Tash-davan, and the valley in which it breaks through is impassable by human traffic, which is also described in HEDIN, »Scientific Results.»

On June 16th we were able to leave this place, that the Turkis call Su-atchi. One shower of rain followed the other; and when the masses of cloud lifted from the mountain peaks these had got little hats of snow. We followed the river upstream to a spot with tolerable pasture. The rain had cooled the air so much that we had to light a fire in the evening. The two arms of the river flowed together here. We intended to follow the eastern one, that came from the S. S. E. Through the tent-opening one saw a magnificent landscape: on either side of the right arm of the river were low, brown-yellow hills, and in the background the valley was closed by high, black-brown mountains, while behind these again towered real Alps with clouds round their dazzling snow-clad peaks. These were the Shia-manglai or Ilve-chimen. In the opposite direction, i. e. in the north, one could still glimpse a little of the dark chain of the Tash-davan where some flakes of snow had been left in a crevice here and there. This was undoubtedly the main chain of the Astin-tagh. The landscape in other directions was a welter of hills, and far away in the west rose some dark masses of rock.

We started out at half-past one, crossing the left arm of the river straight away. This arm is called the Ilve-chimen-darya. We followed the north side of the right arm, the Pashaliq-darya. Its bed is 150—200 m across, but the actual stream is very narrow and in places divides into smaller channels. From the left it receives a broad tributary, around which succulent grass grows. The ground there is evidently swampy. The river swerved gently to the right and there we left it. For a while we had low hills on either side of us. We crossed an insignificant swelling and descended to a plain where the Ilve-chimen-darya flowed right across our route, afterwards going about 400 m south thereof. The route traversed a big swamp with little round pools of water in which a lama-duck waddled about with its young. Progress was difficult in this swampy tract, for the animals showed a tendency to flounder, and had to be led forward slowly. We pitched camp 174 at a place called Seghiz-yar at 7 o'clock. The night was chilly.

On June 18th I made a trip to the little lake Shor-köl, that lay to the left of the route. In the clear morning sunshine the snow-clad Ilve-chimen was resplendent, but at 8 o'clock thick cumulus clouds came rolling over the highest ridge like gigantic waves over a breakwater, but with incredible rapidity. They spread out and concealed the peaks from view. The same phenomenon was repeated the next day at the same time.

With a camel and a donkey the guide and I set off, at first along the road. The Ilve-chimen-darya disappeared behind small hills. We struck off to the north and kept a steady course towards a big green patch in the deepest part of the plain. A streak of water gleamed from the general green here and there, and over all hung a grey veil from a big black cloud. When we reached our green patch we found ourselves on swampy ground, and had to follow a tortuous path between strange circular water-holes and pools of mud. Just near a little stream, sheltered

by a wall of rock, some herds from Miran had their summer camp — two wretched tents and a dilapidated yurt. An old woman was tending sheep. The old fellow who lived here fetched us an armful of firewood and a bowl of sour milk.

The open stretches of water were not particularly large, but the surrounding swamp was a good deal more extensive than I had expected. Some small 'witnesses' of greyish white clay rose about two meters over the swamp. On the north side of the lake there were some small hills; but otherwise the plain sloped gradually and without interruption to the foot of large mountains with a couple of snow-clad peaks. The swamp was in part bare of growth (loose salt surfaces with little meres). Out on the water there was a rich and colourful bird-life. Cranes, geese, three species of wild duck, a beautiful white bird with black-tipped wings and a comically uptilted bill, as well as several kinds of smaller birds. Three wild asses or *kulans* proved to be quite tame (of course I had no rifle with me!), and advanced to within 400 m.

The Turki here called the Ilve-chimen mountains Yngölik. On June 19th I returned to the road. A kulan disappeared in a cloud of dust and seemed to hover over the ground as a result of the mirage. The clouds swept down from the Ilve-chimen and concealed their mighty walls of rock. But the wind suddenly changed over, and all the clouds vanished as if by magic. A slight shower of rain passed by. I stopped at 7 o'clock at Mandalik (the place with Manda-flowers), where there was lots of camel-scrub but no water. To the north and north-east extended a big plain, in whose lowest parts glimmered blue streaks. These were the north-west part of Uzun-shor, that on BYSTRÖM's map is called Kala-köl. My guide was of the opinion that the two sheets of water, which are connected by a swamp, had only one name, Uzun-köl.

An hour later HASLUND caught me up, and later that evening the caravan arrived. We had now entered one of SVEN HEDIN's routes. He pitched camp here on December 2nd 1900.

The next morning we passed two Turkis with six donkeys on the way to Temirlik from Khotan. Our own course was almost due east. It was hot in the sun, and the camels stank more than usual. The wind grew fresher, and small whirlwinds danced over the wide plain in the north-east. The ground fell gradually towards Lake Uzun-shor (The Long Salt), and the road ran nearer to the mountains, that were here lower and free of snow. On the boundary between the piedmont slope and the swampy, saltish grassland around the lake big bushes were growing, and here we encamped. I saw a couple of kulans at a distance of 500 m; they were slowly approaching a herd of 60—70 animals, that galloped off in an ordered troop as if they had been commanded by a human instructor.

Gnats thrived in these parts, and we were grateful for every puff of wind. On June 21st we continued past the lake, that extended as far as the foot of the mountains, where progress was rather difficult. We entered a region of small hills and

crossed a flat watershed. Before ascending the latter, curiously enough, we passed a spot with yardangs. On the yonder side of the watershed we went down to the Ghaz-nor basin. We spent the night at Köl, where there were several sheets of water on the tussocky steppe.

On June 22nd the road at first followed the boundary between a grassy marshland and bare gobi. Hares and antelopes were much in evidence, and the hares were unusually audacious. Five beautiful, half-wild horses galloped back and forth, keeping together almost as if on military parade. They behaved more like wild than tame horses, and HASLUND made the same unhappy mistake as I had made when I shot the tame camel in the Black Gobi — but he shot not only one, but two horses.

A short distance from Temirlik we were met by TOKHTA AHUN, the headman of the village, and a Turki merchant by the name of ISAK HAJI, both Mongol-speaking and pleasant fellows. We also ran into a couple of Dede-Mongols, the first we had seen. The older one was a *merin* (roughly synonymous with »village headman«); and to all of them HASLUND related his accident with the shot horses. None of them knew, however, who was the owner. We did not feel very enthusiastic as we entered the little village that evening, for we knew there was trouble ahead. To shoot a Mongol horse is a very serious affair.

### *Mongol justice*

The village consisted of a few miserable dens dug into the loess-like edges of a terrace, and was inhabited by Turkis. The Mongols will not allow the latter to build proper houses. When HEDIN had his headquarters here in 1900 the present head of the village had only been a little boy; but he well remembered that HEDIN had had his camp not far from our own.

Next day four or five Mongols came to visit us. Their deportment was kingly; they carried their heads erect and searched us with penetrating looks, and their speech was dignified. Their attire was according to the Tibetan model, the heavy robe drawn up above the girdle to form a voluminous all-around »pocket«. Their sleeves were long and the knee-boots were Tibetan. The rank smell of mutton-fat filled our tent as soon as they entered, and one had a feeling of being transported to Mongolia.

One of them differed from the others both as regards attire and appearance. He was clad in a sumptuous, purple-coloured velvet gown with broad red borders and trimmed with leopard-skin; and instead of the red, turban-like headgear worn by the others he had a brand new, gold-embroidered cap. But his toothless old visage was that of a fox. We entertained them as well as we were able, and showed them pictures from HEDIN's books, something of which especially some Turkis who joined us showed visible and audible appreciation, for they recognized both HEDIN and several of his servants on the pictures.

Later the same day the Mongols returned, and the oldest among them began abruptly with the words: »You have shot two horses for us.» Whereupon HASLUND immediately told how the thing had happened. It now appeared that the horses belonged to the old fox with the barbaric attire. HASLUND offered to pay full compensation for them in pure silver. The Mongols began, however, to adopt a more impertinent tone, and finally Foxface said: »Yes, you have begun by shooting a couple of horses, but you have come here to shoot Mongols.» At this insult HASLUND fired up, and without mincing his words he told them off so thoroughly that when they rode off shortly afterwards they really looked quite crestfallen.

In Temirlik 22 Mongol pilgrims had been staying for two months. In a fortnight they were to set out on the long journey to Lhasa, or Mongotso as they call it themselves. The majority of them were from the Ili Valley, and there were some Chakhar-Mongols among their number. (Under the Emperor CH'IEN LUNG a group of Chakhars were transferred from their steppes in eastern Mongolia to distant Ili, where there are still many of this tribe). We were also visited by three Tibetan lamas from near Lhasa. They had unusually noble types of countenance, and they were very pleasant fellows to boot. Especially the young Dede-Mongols have a wild and barbaric look, and they seemed to be still clumsier than the Mongols I had previously seen. We also met a couple of Mongol merchants — the one from Hsi-ning and the other an emigrant from Urga. They dealt chiefly in cloths.

TOKHTA AHUN and ISAK HAJI rode to the nearest Mongol official, a soldier-chief who lived about 15 li to the south, and told him about the affair of the horses. The chief promised to come over to us, so that we did not need to visit him, as we had intended.

At about noon on June 24th the chief arrived, in the company of fourteen other Mongols, including Foxface. The chief looked stately and dignified, and had a powerful face. His gown of purple-coloured velvet was bordered with gold brocade and leopard-skin, and was lined with green. Around his neck hung a string of large beads of malachite, coral, amber and glass. The others were not quite so finely apparelled. We showed our passports, and it took them a long time to spell them through; fortunately there was someone who could read. When they were shown photographs of our journey through Mongolia they thawed visibly. Especially the picture of the winsome features of the Princess of Barun Sunit made a great impression (see History, etc. Part I, Pl. 9).

HASLUND then brought up the business of the shot horses, and the trial began. He related in detail how everything had happened, how he had made the fatal mistake, and shot in the belief that the animals were *kulans*, the horse-like wild asses, and that he knew very well what a great crime it was to shoot a horse. To clinch his argument he placed a *yamba* of silver on the table.

A lengthy, whispering conference began among the Mongols. It resulted, in effect, in the following judgement by the chief: »You came here without knowing the country. You have shot two horses for us. Now you give us money, and it thus appears that you did not mean any harm by the shooting.» The question then arose as to whether this *yamba*, that corresponded to 50 silver taels, was sufficient compensation for the horses. We ourselves knew that it was more than adequate. Another conference followed between a dozen whispering heads inclined together. Yes, the sum was sufficient as payment for the horses, but the owner ought to have some compensation for the grief that had been inflicted upon him! Foxface's meanness had got the upper hand. But he had gone too far, and HASLUND saw his chance (more accurately: he saw red and exploded): »But am *I* to get no compensation for the way that fellow has spoken to me?» (pointing to Foxface where he sat in the tent-opening) »His speech has been very bad. I have lived among Mongols for a long time and in many different places, and I know Mongolian customs. To say that we have come here to shoot people, as he has said of us, is not according to Mongol custom. If all Dede-Mongols are like him we don't want to have anything to do with you. But I don't believe it. That old fellow» (he pointed at Foxface again) »is a bad man, a very bad man. Look at him! Look carefully at him! One sees at once from his eyes that he is a bad man. He wears lots of gods on his breast;» (as is the custom in the Tsaidam, he had large *gaos*, metal boxes containing idols, dangling from a cord hung diagonally across his chest) »but *in* his breast he has no gods. But I know the gods, I am a lama; and I say that now he is a rich man,» (this we had ascertained) »but in two years he will have lost his herds and will be a poor man. I see that he is marked. I suggest that *he* should give *us* a sheep or a goat as compensation for the way he has insulted us. If he does that then this matter is settled. Then we are agreed.»

Ensued a whispering conference outside the tent between the elders and Foxface. They came in again and announced the result to the chief, who gave the following judgement: 50 taels was full payment. The owner had at first denied that he had »spoken badly» to HASLUND; but now he admitted his fault and said that the words burned him. »This is the judgement of the Mongol council. If you are not satisfied with the sentence you must address yourself to the *beile* of the tribe who lives at Taijinar-ghashun farther east in the Tsaidam.» — »I am satisfied», answered HASLUND.

The Mongols set off on their small horses, the chief inviting us to visit his camp the following day. We were content; we had emerged as the moral victors.

This was further confirmed the next day by the arrival of a fine, large, fat sheep, that was handed over by Foxface's son together with a *khadak* and flourishing phrases. He *might* have given us a cheap goat, or a poor sheep, but he was sending one of the dearest sheep. HASLUND's bluff-prophecy had put fear into

the old man. Later we heard that he had been so frightened that he had betaken himself to a very holy lama who never left his tent, telling him that a foreign lama had foretold that he would be a poor man in two years — »Is this true?» The holy man examined his dice and replied: »Yes, it is true. You will be poor. Only not in two but in three years. And horns will grow on your head.» And if a *real* lama has said that a rich man will become poor within a certain time one may rest assured that the prophecy will be fulfilled, for the lamas have ways and means of cozening people. Whether Foxface also had his anything but handsome features further uglified by the growth of a pair of horns remains for research to show. However this may be, he immediately began to give sheep to all the lamas in the tract to induce them to pray for him for three years to avert the effects of HASLUND's prophecy. We ourselves presented his fine sheep to the foremost Tibetan lama in the neighbourhood in order to show that we had only aimed at moral rehabilitation.

We visited the soldier-chief in his camp, consisting of nine yurts and two tents. The easternmost yurt was a temple and had as a crowning emblem a lamaistic prayer-wheel that was driven by the wind! This construction undeniably bore witness to a certain rationalization of religion, and was a marvellous illustration of the Mongol aversion to work.

The conversation over the tea cups was rather desultory, and when I finally asked to be allowed to photograph the chieftain it was refused. After some hesitation he changed his mind, however, and retired to put on his gala dress. When he returned in all his splendour he looked magnificent. For the solemn occasion he had put on a fur-lined gown of thick purple-coloured Chinese silk, brand new Tibetan boots and a silk Mandarin cap with red cords and black feather. As background he arranged a black carpet with a tremendous tiger, a Russian(?) factory article of poor quality. Otherwise, everything in the yurt was Mongolian and there were practically no Chinese articles to be seen.[1]

The language of the Dede-Mongols exhibited some dialectical peculiarities as compared with the Mongolian we had been accustomed to hearing from our Mongols. But this is only to be expected, when one considers the great distances between their respective domiciles. Originally the Dede-Mongols were Khoshut-Mongols who migrated from Dzungaria 300 years ago. As I have mentioned above, the dress of these Mongols has certain Tibetan features; but Mongols and Tibetans are said not to inter-marry. The older men have rather full beards for Mongols, a feature that some would certainly interpret as a Turki strain.

[1] I had the bad fortune to spoil most of the photographs I took on this mountain tour, by developing them in the field with bad water. As a matter of fact, all the pictures we developed in the field turned out much worse than those we saved up for our arrival home, even when the latter had been exposed for a year or so. In *Zajagan* HASLUND has reproduced a number of my pictures. Unfortunately, the negatives disappeared in this connection, so that I am unable to give any of them here. The chief in question is to be found in HASLUND's book on p. 262.

And it is probably beyond doubt that Turkis and Mongol women do have relations.

During our stay in Temirlik we got permission to carry out anthropological measurements on a number of Turkis and, surprisingly enough, also on Mongols. This showed that our way of handling the unfortunate horse-affair had left no ill-feeling.

We sent one of our Chinese camel-men to look for the three camels in the valley of the Auraz-bulaq and bring them back to Charkhliq. Meantime, we decided to leave the thirteen worst camels to pasture here for the summer months. They were to meet us again in Charkhliq in the autumn. (When they returned they followed the main highway over Bash-qurghan, that was, certainly, longer than the road we had taken over Tash-davan, but much easier going). Now we had to cut down our baggage to a minimum, as our caravan was reduced to 12 camels, 3 donkeys and 1 horse. We took a westerly course, in order to reach Charchan along a route that according to BYSTRÖM's map no-one had ever followed in its entire length.[1]

### *Following the Yusup-aliq-darya sourcewards*

The first camp after a windy march over flat gobi was at Bash-malghun or Kukchen-malghun, a very broad, shallow river-bed. The second camp was at a spring at Köl (where the lake that gives the place its name has now disappeared), or Shara-burgas, as the Mongols call it. The whol eplain seemed to be

[1] Long after my return home I discovered that PIEVTSOV had followed this route. Altogether, I was poorly equipped with maps and instruments on this journey, and earlier literature I had none. The only map I had with me was BYSTRÖM's map to the scale of one to one million appended to HEDIN's *Southern Tibet*. I had not, however, HEDIN's route-maps on a larger scale, that would have been very useful on the stretches where I trenched upon his routes. I have already pointed out a number of defects in BYSTRÖM's map. HABENICHT's map of HEDIN's journeys 1894—1908 is for the tracts of the Astin-tagh that I visited more correct than BYSTRÖM's.

I had a connected route-map from the vicinity of Turfan to Tikenliq, of which, however, nothing remains. The loss is not so serious, though, as NORIN and AMBOLT afterwards mapped practically all these roads, and in a much more expert way than I was capable of. Much more serious is the loss of my map-sheets between Charkhliq via Temirlik to Charchan. All these sheets disappeared, and much else besides, including notes from the journey through Mongolia and HEDIN's diaries from this period, in a transport that was arranged to Novo Sibirsk in 1931 in connection with the winding up of expedition headquarters in Urumchi. For the recovery of a part of the contents of the six chests that were sent we had to thank the vigilance of an official at the German consulate in Novo Sibirsk. One day he saw some chests marked »Sven Hedin's Expedition» in a shop where goods were auctioned, and enquiry revealed that the six chests had been sold at auction as undelivered railway goods. The purchaser had already sold a good part of the contents, and the papers (including my maps) had been used as spoilage. This discovery gave rise to an official enquiry, from which it finally emerged that the man in charge of the left-luggage office at the railway station was in the habit of keeping goods arriving by rail in the store-room past the period allowed for storage, after which he would sell them. This provided him with a nice little source of possibly needful extra income. The affair developed into quite a tidy scandal, and much was written about it in the press of the Siberian capital.

The part of the contents of these chests that was saved was collected by HUMMEL and myself in 1934, the last time we called at the Swedish Legation in Moscow.

one huge complex of rain-water furrows. The nearest mountains to the south were partly covered with sand. Before the Chimen-tagh, in fact, there were in several places big dune formations.

On July 3rd I turned off northward from the route in order to correct a mistake on BYSTRÖM's map, which has an unbroken mountain chain to the north of our camp.[1] But one saw clearly that there was a wide east-west depression between what the Turkis called Bagh-toqai (Kara-chuka on BYSTRÖM's map) and the Ilve-chimen-tagh. About on a level with the east end of the Bagh-toqai Hills the river Yusup-aliq-darya, coming from the west, runs dry; the moisture is sucked up by the sand, and seeps underground to Ghaz-nor. We intended to follow this river right up to its ultimate source along its broad latitudinal valley.

In the crevices in the Bagh-toqai (Qara-chuka) Hills there was a good deal of drift sand; and in the wide depression that separates them from the Ilve-chimen-tagh there was a dry bed leading east.

The following morning I joined the main caravan again at the river, that here had a number of arms in the well-developed bed. The deepest were about half a meter in depth. Gases bubbled up everywhere from the muddy bed. There were swarms of stout, yellowish kulans (*Equus kiang*) and long-horned orongo-antelopes (*Pantholops hodgsoni*) in these parts.

On July 5th we made an early start along the south river-bank, over marsh and expanses of salt. The path, where any such existed, was uneven and winding, and the gnats did their level best to spoil our tempers, till a friendly breeze came to bring relief. We passed a Turki from Charkhliq who was tending sheep. At 10 o'clock we rested beside the clear river, that was now flowing in a single channel. HASLUND shot an orongo-antelope, and we saw big herds of these creatures. At 4 p. m., when we had resumed our march, clouds came driving along the Ilve-chimen from the east, enveloping the mountains in a dense grey veil that trailed on the very ground. Something like a yellow-brown wall came up in the rear, thrown into sharp relief by the blue sky. The clouds approached with astonishing rapidity, and within 40 minutes they had caught up with the caravan. Thirteen minutes later nothing could be seen at all. We were enveloped in a cloud of dust that obscured the field of vision like a thick fog. The sun appeared as a bright patch, and the air seemed suddenly to smack of autumn. HASLUND lost touch with the caravan, and found the camp only thanks to a fire that I lit.

The river formed a big bend to the south, and here we went over to the other side. It was surrounded by extensive grassland with several smaller watercourses, little lakes and marshes. We met a shepherd with a big herd of sheep and goats; and here we encamped.

Early on the morning of July 6th it began to rain, and continued for some

[1] The same error is to be found on BONVALOT's map.

time. When the rain stopped we were pestered by mosquitoes, gnats and horse-flies. In the course of the afternoon the mountains reemerged from the masses of cloud, and the evening turned out clear and very chilly.

The following day we pushed on westwards, and were much plagued by the swarms of insects, both during the march and on the botanizing excursions that I undertook. The good pasturage came to an end, and the ground was now almost sterile gobi. We pitched camp at Bulaq-bash after a short march. Here begins a tributary to the Yusup-aliq-darya that appears to follow the foot of the alluvial cone in the east. According to Russian maps, the name of the river for the greater part of its course is not Yusup-aliq-darya but Gulja (Guldscha, Guldja), though I myself never heard this name.

July 8th was rendered historic by the gnats. Our pack-animals rushed from the vegetation belt and out onto the gobi (where they were generally less in evidence) before we had time to finish loading up. We had the river in the south. At noon we pitched camp below the edge of its well-developed northern terrace.[1] A hard east wind, increasing to a gale, and reducing visibility to a few hundred meters, prevented our pushing on to a better pasturage as we had intended. The delay gave me the opportunity of observing how at four o'clock a tributary from the north, situated just east of the camp, was filled with rushing, brownish red water, although the bed had been barely moist at noon. When it is sufficiently warm in the daytime the snow up in the mountains thaws, and gives rise to a whole stream. The water in the main river was now also dark brown, thanks to the influx of melt-water from other streams. The last time we had seen it the water was crystal clear; either the mud must have had time to settle, or the thaw in the mountains was negligible that day.

At midnight it began to come down; the dust-storm was succeeded, as had several times been the case recently, by rain. By one o'clock we were able to continue along the edge of the terrace. We crossed a number of deep-carved tributaries from the north and took leave of the river, that swerved off into the mountains in the south-west. In the north was scrub-covered steppe, presumably reaching to the foot of the mountains. The next time we struck the river it was a rushing stream, flowing in mighty sweeps between hills. We camped beside it at six o'clock in pouring rain.

Throughout the whole march on July 10th we had the broad river on our left, with its many stream-beds separated by mud-banks. We crossed a number of tributary beds, many of which had a little trickle of water after the night's rain. We rested in the middle of the day at a place where the south bank of the river was high but the other one indistinctly marked.

Another uncomfortable night of rain. When we resumed our march we moved

[1] On HEDIN's sheet 42 to his *Scientific Results* this terrace is marked as the edge of a hill on each side of the river.

off from the river. Just to the south were low mountains; farther off they were probably higher. At some distance to the north one distinguished a low chain. Kulans in groups of 3—4 one saw continually, and antelopes, too, were common. At 6 p. m. it became so cold that I could no longer hold my pen. So I dismounted and walked until we pitched camp at 7.15 p. m. Pasturage there was none.

On July 12th we continued over uneven ground, carved by rain-water. It was decidedly chilly. We were probably at an altitude of about 4,000 m, and I had now and then a slight feeling of mountain-sickness. It rained for a while before we pitched camp on the bank of the river, and still kept on afterwards. The clouds swept low over the mountains and enveloped them in grey. In the river-valley lots of little flowers grew and thrived, most of them some species of pulse. The alpine flora was lovely.

The rain kept us in camp 190 over the next day. We froze, made fair copies of maps, and yearned for less rainy regions.

July 14th, however, turned out a brilliantly clear morning, and the snow-clad magnificence of a completely new landscape met our delighted gaze. We had, certainly, had a suspicion that we should have big mountains in the south; but the rain-clouds had hitherto concealed everything. As far as the eye could reach there were mountains south of the river and on either side, with the highest peaks capped with snow, the lower ones just slightly sugared (Pl. 6 a). In the north, too, a number of smaller mountains appeared over the edge of the terrace at camp 190, but they did not form any connected chain. And in the north-east, finally, towered several mighty peaks, clad in shining white.

The volume of water in the river diminished in the course of the day's march, as we were getting nearer to the source. I had to go on foot, pushing the cycle wheel before me, for all our watches had stopped. We covered 31 li, but frequent rests were necessary, for every exertion was felt as doubly strenuous at this altitude. Islands and mud-banks in the river-bed were spangled with flowers, all small and pressed close to the ground, that shone red, blue, yellow and white. I soon had an armful of them. As I was searching for a strange »forget-me-not», whose tiny flowers actually bloomed on the very root of the plant, I caught sight of a flock of beautiful kulans at a distance of only 500 m. They were all close together, and grazing peacefully. Even after they had discovered me they remained quite calm, standing stockstill with pricked ears; and it was only when I got pretty near to them that the proud creatures trotted off with extremely elegant movements. One distinctly heard the sound of their hooves on the river-gravel, and the splash of water. In an orderly column, like a regular military formation, they sprang up the terrace, stopped as if at a word of command, turned for a look and then trotted off in single file again and disappeared. Only four antelopes remained behind. They had joined company with the wild asses, but less shy than these, they thought it was not yet time to take to flight.

On July 15th we met a caravan with a crowd of Turkis on horseback and with 65 donkeys. They were on the way from Charchan to Temirlik. A couple of patriarchs with Jewish noses bore the queerest looking guns: the stocks were home-made and resembled crooked planks with a gigantic forked rest in front; the barrels were thick and polyhedral in section.

### *From Qozoq-qaqti to Charchan*

The watershed between the Gulja (Yusup-aliq-darya) and the Charchan-darya is flat, and crowned by a little cairn in the east-westerly valley. This cairn marks the boundary between the Ghaz and the Charchan districts. To the east of this point the water flows to the Ghaz-köl basin and to the west of it to the basin of Lop-nor. The altitude, according to PIEVTSOV, is 4,314 m. Up there around the divide only two kinds of small white flowers grew. Just on the other side begins one of the streams that feeds the Charchan-darya; and this river we now intended to follow practically to its disemboguement in the ephemeral lake Qara-buran, that we had passed before midsummer. Very soon the channel began to carry water; it is called Qozoq-qaqti.[1]

The air was beginning to feel warmer, and at 1.30 the temperature was ideal. In camp 192 we were in a good mood, partly on account of the lovely weather and partly because our meatless days were at an end, thanks to HASLUND's fortune in the hunt: he shot an antelope. At this place we were also met by some Turkis. One of them was said to be the richest man in Charchan. He invited us to stay at his house there. We gave him a little tar-ointment for his scabies, receiving raisins, almonds and a little grain for the horse in return. The other Turki had lung-disease.

Both the horse and the camels had fallen off considerably during the rainy days, and the pasturage at this altitude was of course pretty meagre. Otherwise, the camels were beginning to look quite handsome in their new, soft, light red-violet coats. The mane under the neck and the long wool around the upper part of the forelegs had grown apace; but the rest of their bodies was covered only with a thin, fine coat of down.

On July 16th we covered only a short distance. The snow-clad peaks of the Sulamning-tagh glittered in the clear light, Fig. 5.[2] The mountains in the south now reached the river. HASLUND shot another antelope. There were also argali and marmots in these parts. About 5 li to the south of our camp, no. 193, Sulam, there were said to be three houses, one of them inhabited by a Turki

[1] FILCHNER, who passed here in September 1936, writes the name Kosuk-kak-de-bulak. Plate 37 in his travel book »Bismillah! Vom Huang-ho zum Indus» (Leipzig 1938) shows the small obo on the watershed.

[2] The picture on p. 254 in HASLUND's »Zajagan» shows the same mountain.

Fig. 5. The Sulamning-tagh as seen from the south

family. The next morning the master of the house came to the camp with mutton-fat, a sack of maize, and a big wooden bowl of lovely sour milk. He, too, suffered from disease of the lung. Curious that these mountain-dwellers, living as they do over 3,000 m above sea-level, where the air is free of bacteria, should have lung trouble.

On this day we had a tiring march, up and down, across one ravine after the other. They were about 15 m deep, and some of them were carrying water. In the main river the flow was strong and swift. We crossed over, coming out on a wide plain surrounded on all sides by high peaks, and from the bottom of which a number of lesser hills thrust up. Here began good pasturage in the shape of bushes and scrub. Here and there were sand-dunes. A couple of passing Turkis informed us that a maize depôt awaited us two days' journey from here, thanks to the beneficence of the magistrate of Charchan.

When we were just about to start, at one o'clock on July 18th, a Turki with two horses appeared in the east. »Look!» jeered HASLUND, »don't you see he's coming with a whole horse-load of mail?» (I had mentioned that I had dreamed that night that we were going to receive mail). HASLUND went to meet him, and with profound reverences the Turki handed over a big packet of — letters!! The post-offices in Tikenliq and Charkhliq had nothing for us, but here, in the middle of the wilderness we suddenly got a packet of mail! This fellow was from Temirlik, and to that place the letters had been sent by another messenger. The letters seemed in the first place to have been handed in at the post-office in Korla by DETTMANN. It was well done indeed to track us down as far away as this. We only noted that we had letters both from home and from HEDIN and other members of the expedition, and then we made a start. The camels seemed to go even more slowly than usual on this march, for our unread letters were burning holes in the portfolio. Tree-like whirlwinds stood quite still on the plain, while others whirled on in their wild dance. The mountains were hidden from view by the haze in the atmosphere, so that only the high snow-clad peaks in

the south were faintly visible. For the first time this year we enjoyed the high-pitched chirping of cicadas.

We pitched camp in the descending dusk, and by the light of a little fire I fell upon my mail. Thanks to a long letter from HUMMEL we got a detailed description of all that had happened, amongst other things, that HEDIN had left for Sweden. HASLUND and I sat up late that night, discussing the news and chortling over the cultivated wit in a copy of »Söndagsnisse Strix» that a thoughtful friend had sent me. The new moon, the thinnest of crescents, had long sunk behind the mountains in the south-west when we finally crept to bed. The starry firmament was lovelier than usual, and I lay watching the sudden shooting-stars. The arrival of our mail had appeared as arbitrary as they, but it did not vanish into the void in their fantastic fashion.

We made an early start on July 19th to avoid the heat of the day, that was once more beginning to make itself felt. We saw a yak cranium; but no more wild asses or orongo-antelopes. Two Turkis from the nearest village met us with cold, fresh drinking-water. A little farther along the road a cloth was spread out containing boiled mutton and bread — we were invited to breakfast. The Turkis are really touching in their friendliness, and they offer their simple gifts with such dignified courtesy.

We encamped near three unpretentious huts of sticks, brushwood and felt inhabited by Turkis, on the bank of the river Bash-malghun[1] out on the plain. The latter offered a rich pasturage of tall grass. The villagers came with their presents before we had even managed to get the camp ready: bread boiled in dripping and big bowls of sour milk. Most of them were away at a funeral, however; but they came home in the afternoon, and then our tent was crowded with people (even women and children were allowed for once in a way); and fresh piles of bread and more bowls of delicious sour milk as well as a couple of sheep were handed over with apologies for the absence of the donors on our arrival. They hoped that we should not be angry with them for this neglect!

These people had outlying stock-farms analogous with those in the north of Sweden, tending the sheep, goats and cows of some Charchan people; but they did not come down from the mountains in winter, as we do in Sweden. They are *taghliqs*, mountain-dwellers. We stayed with them for a couple of days to give our animals a chance to recuperate and to carry out some anthropological measurements on the people. When we finally set off we were presented with still more food, including two more sheep. We were at first almost in despair over this superabundance of food, for meat did not keep for long in the heat; but we found out in due course that the Turkis were sensible enough to give

[1] This is the place where PETER FLEMING and ELLA MAILLART, when coming from the Tsaidam in 1935, joined our route. Thereafter they followed our route down to Charchan. Cf. PETER FLEMING »News from Tartary», London 1936, pp. 221—232.

us living sheep, and then when they had been slaughtered we received only a part. The rest they feasted upon themselves. But the fifth and sixth sheep we got all for ourselves.

The Turkis' politeness and magnificent hospitality frequently embarrassed us, though we always tried to avoid taking unfair advantage of it, by paying for what we received (at least when it was as much as a sheep). But one had to use a great deal of tact in such transactions. What we could and did do, however, was to show our good-will by attending to all the sick who came to us for help; and even if our efforts were in the highest degree amateurish they were for the most part happy in their effects. We gave them tablets from our little supply of medicines, dropped boric acid in their smarting and bloodshot eyes, or supplied them with potassium permanganate to wash their sores with. Quinine tablets were especially appreciated (perhaps on account of their bitter taste), and they really did seem to give relief for the majority of ailments.

Now, when we were ready to break up camp, they offered to facilitate our journey to Charchan by lending us beasts of burden, a proposal that we gratefully accepted, as several of our camels were beginning to weaken. So when on July 22nd we left camp 196 the caravan included four horses and two donkeys as well as some extra drivers. The horses were difficult to load, and were unruly during the march. We traversed a grassy plain, meeting sheep and herds of horses in many places. Our route took us quite close to the mountains in the south. Innumerable springs bubbled up near the road; and at Kurutluk, a very copious one, we called a halt for the night. The prevailing wind on this plain in the afternoons seemed to come from the west.

On July 23rd the road followed the transitional belt between the gravel slope consisting of light sand from the mountains in the north, and the extensive scrub-covered grassland around the Patqaqliq-darya, i. e. the upper Charchan-darya, which river we came upon at Seghiz-otjak. The bed of the stream was 40 m across, the water brownish yellow. The beautiful yellow *manda* flower (a clematis) grows side by side with a reddish violet leguminous plant (half bush) that reminds one not a little of the sweet pea, although the flowers are considerably smaller. We followed the river, that glistened in the sunshine. The mountains on the south side are called Bulung-dung. The big chain in the north goes under the name of the Kekere-tagh. We pitched camp at a bend in the river, Chegkul-toqai.

On July 24th we still followed the river, but the mountains in the north were now no longer visible — though they were really quite near — owing to the haze. From these mountains came a number of watercourses with coarse gravel and big stones in their beds. One water-carrying tributary from the south was called Aq-su. We clambered up to a high terrace, but were obliged to come down again almost immediately. And then once more up at Ejek-kashte. It was about 20 m in height, in some places 30.

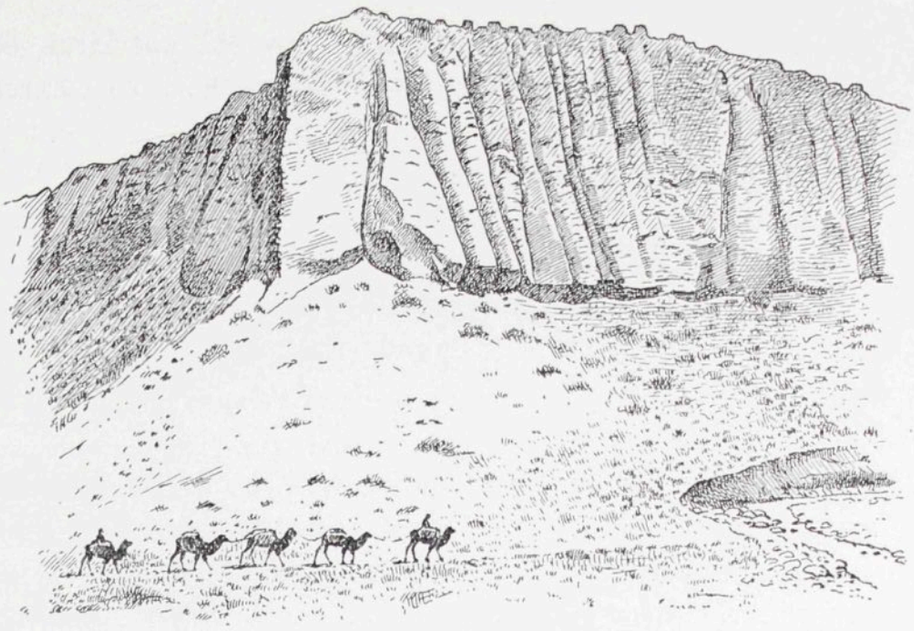


Fig. 6. The southern terrace of the upper Charchan-darya recalled the mighty walls of some medieval stronghold

It began to rain, and with the hard wind that was blowing it was not long before we were thoroughly chilled. Owing first to the haze and then to the rain, we had not noticed at once that the river had now entered a valley between mountains that were quite close. The rain grew heavier, until it was coming down in torrents, and the road became worse. We passed Toquz-davan, i. e. »The Nine Passes», all constituting different passages of terrace spurs. We now left the river and ascended a long, steep slope, my camel groaning terribly. After a lateral valley filled with large stones followed another ascent, up which I toiled on foot. This was a narrow rocky ridge that had to be crossed. On our next meeting with the river we found it running in a deeply cut canyon with vertical cliffs. The surroundings were fantastic, with their grottoes and conglomerate pillars resembling Swedish »raukar». In places the path went perilously close to the rushing river, and if one's camel had taken a false step one would have had a nice bath. Great blocks from the cement-like conglomerate mass constituting the walls of the canyon had fallen into the stream, that was undermining the banks, so that the direction of the path had to change now and then. In one place the fallen blocks actually formed a kind of bridge on which one could cross over to the other side; but the animals could not use it. It is referred to as Köbruk (The Bridge).[1]

Beside the narrow spot on a level with the river where we pitched camp there was a grotto in which the Turkis had set up a sort of *k'ang* on which to lie. The roof was quite black with soot.

[1] FILCHNER spells Töweruk. His plates 36—41, 44, 45, 48 and 49 are from our common route along the upper Gulja and onwards to Charchan.

On the night of July 25th it rained again. An old patriarch of an *aqsaqal* and some Turkis who were to help us the rest of the way to Charchan, instead of the men who had accompanied us for the last few days, now put in an appearance. The patriarch had ridden for five days to meet us; and he would have come much earlier, he assured us, if only he had not had such an accursed backache. As a gift of welcome he presented us with a delicate lamb. And later on he gave us four sacks of grain as fodder for the animals. Like all Turkis, he wore a fur cap, only with the difference that his was much »wilder», with angrily sprouting tufts of wool in every direction, giving him the air of a thunder-god.

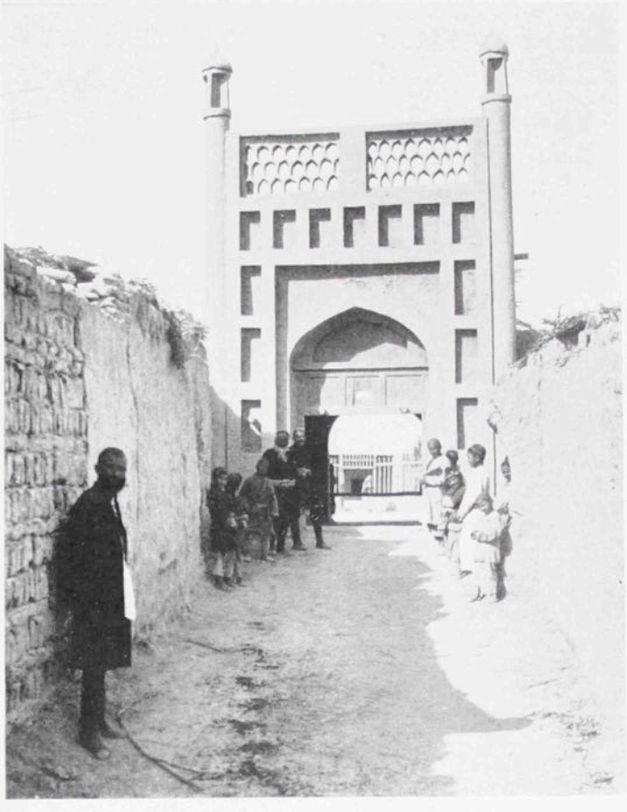
Our next camp was only a few kilometers away from the preceding one, and quite near a spot inhabited by some Turkis (this was the first place where we had found fields in the mountains); but in order to cross the rushing stream I had to return to the »bridge» of fallen blocks, which meant making a considerable detour. The southern terrace of the river recalled a medieval castle with strongly built walls (Fig. 6).

On July 26th we once more had to cross the river; and all went well, despite the strong current. But then the water did not reach higher than to the horses' bellies. The road now led south-west, and almost immediately into the mountains, leaving the valley of the Charchan-darya behind. At the foot of the pass itself, that is called Chuqur-davan (The Stone Pass),[1] HASLUND stopped with the caravan while I went over the pass with the guide. The crossing did not offer any difficulty to speak of.[2] There were both argali and chickores, the delicate tasting mountain-partridge. Once down in the valley on the other side of the pass, we were obliged to follow a zig-zag course. From the right came the tributary Chageliq-sai, carrying a little water. We stayed the night at Munabulaq, that was salt, as are all springs in this mountain chain. There was even a little withered tree, that we stripped of a few of its branches in order to get a fire under the kettle and the *qebab*-sticks.

That night we had more rain, that continued until 8 a. m. The only shelter I had was provided by the rather small tarpaulin in which my sleeping-bag was wrapped; and the clothes I had taken with me naturally became wet. We waited for the caravan in a grotto farther down the valley, Lazel-ungi, to which shepherds used to resort. They had built in a proper fireplace and an earthen seat. The open part of the grotto had had walls of reeds, that had now fallen down. There were horns of *kökmek* or *Pseudovis nahoor*. Quite nearby, the water from a salt spring trickled down a steep with a faint plashing sound. When the caravan

[1] In Vol. IV of his *Scientific Results* HEDIN gives the name Tschoka-davan, quoting PIEVTSOV, but LITTLEDALE has Chokur, which must be identical with the form I heard. PIEVTSOV's altitude is given as 2,906 m.

[2] Cf. FILCHNER's Plate 45.



a. Mosque at Tikenliq

b. The graveyard at Tikenliq

a. The mountains to the south of the upper Gulja or Yusup-aliq-darya (the river visible in the foreground) near its source. July 14th 1928

b. Turkis in our courtyard in Charchan. The white-beard with turban is the »Major»

had arrived, and had had time to rest, we continued our march down the valley, that now widened steadily. The river-bed was called the Muna-bulaq-sai. There was pasture, even tamarisks in fact. We pitched camp at the salt spring Chiqin-sai.

On July 28th it did not take us long to emerge from the mountains. But some time elapsed before we could see anything of the plain on their north side, for the sides of the ravine cut off the view entirely. Now, however, we were approaching the Tarim Basin from the south, and had the eastern part of the mighty Takla-makan before us. Just near the transitional region between mountain and plain, inside the foot of the mountains, we found a spot with chipped flints, that had probably been a dwelling-place or a resting-place for stone age people. (See Vol. VII: 1, p. 35).

As we came out of the mountains and reached lower levels the heat began to make itself increasingly felt. We noticed it first from the hanging tongues of the dogs, and the way they kept scratching away the sand from the shady side of any suitable bush, in order to get a cool place to rest in. It was something of a sensation to see real plains again, after having been in the mountains since June 5th. The Astin-tagh we now left behind us in the south, and in the shimmering haze the chain soon disappeared from sight.

We passed a belt of small dunes, less than one meter in height. It seemed as if the sand was gaining ground here. Among the clouds of sand sweeping along the ground we saw some antelopes; these were the short-horned race again (similar to Gazella subgutturosa). Towards evening we reached the bank of the Charchan-darya, whose bed was here 5—600 m across and lay 7—8 m below the surrounding plain. The water coursed swiftly in a number of channels; but pasture there was none.

The following morning we had not covered many li northwards along the river before stumbling on a heap of bundles of hay and chaff, evidently sent for us by the magistrate of Charchan. A pity we had not found it the day before.

The dunes on the right side of the river grew in height from 1 to 8 m; and in one place a dune reached all the way to the river. They had been formed by E. N. E. winds. The terraced banks of the river sank to 2—3 m, and that in the west became so distant that it was lost to sight. Through a belt of dunes one could see no road, but several rows of cairns showed that the route had been moved. Down in the river-bed tamarisks throve, and here we called a halt for a rest. During the afternoon march we were met by a Turki with melons — a delicious surprise out in the desert, with the air filled with clouds of sand! A little nearer to Charchan we found a whole deputation awaiting us, headed by a corpulent, jovial old grey-beard whom we christened »The Major». From him we received a sheep, a goat, bread and melons. We might have pitched camp here, for it was 6 p. m., and the spot provided everything necessary both for ourselves and the animals. But we were advised to continue, as the river was

easiest to cross in the evening. So we soon found ourselves passing fields, lovely trees and houses in the part of the Charchan oasis situated on the east side of the river and called Aralchi. The crossing of the Charchan-darya offered no difficulty, largely thanks to the Turkis, who gave us all possible help in leading the animals over to the other side. Here we were awaited by the magistrate, a Turki from Kashgar with the Chinese name of A. I was now given a mettlesome horse to mount. We had two outriders riding in front, while two other Turkis ran beside us with big Chinese paper lanterns. A curious crowd brought up in the rear. Our entry into Charchan in the gathering dusk was thus as pompous and festive as could be desired. Along winding roads, through avenues, past houses and beside canals, we rode into the town itself, where an inn had been made ready. There were in all five rooms, including two proper bedrooms. Mine was already occupied by a family — of swallows.

### *Charchan*

We felt quite at home in Charchan, and thoroughly enjoyed the oasis, that was really lovely, with its trees, fields, farmsteads, and the friendly, hospitable Turkis. Everything was proper and clean, and the people seemed to be living a happy and good life. But disease was a scourge, and one with which we came into close contact: every morning 20—30 sick people came to be cured by us, whom they apparently believed to be wonder-working doctors. (Pl. 6 b). There was no reasonable medical attendance to be had within less than a month's journey.

The fields bore good crops, and the gardens yielded an abundance of grapes and melons. The Turkis lavished much care on their avenues of Lombardy poplars, that bordered the irrigation canals. They even wrapped bast or some similar material around the trunks near the ground, in order to prevent passing animals from feeding on the bark and damaging the trees.

When I saw the volume of water carried by the Charchan-darya I began to revolve a scheme for continuing the journey down the river in a boat or on a raft. The first discussions of this plan sounded quite hopeful, and we began to look forward to the prospect of avoiding the wearisome rocking on camelback, and the stench from the sweaty animals. The negotiations in the matter were carried on in Mongolian, in which HASLUND was proficient; but as our Mongol-speaking Turki had a genius for complicating simple issues we were unable to arrive at a clear understanding of how far the river was navigable by boat. It transpired later that at this time of the year the river was too shallow to bear even a light boat farther than a few days' voyage. And to cap everything, there was in any case no boat!

We had not spent many days in this pleasant town before people began to come to us with small finds that they had come across in what they referred

to as Kohna-shahr, i. e. the old town just to the west of the present oasis. I planned to move to this place as soon as we had concluded our arrangements for the return to Charkhliq. These little finds were mostly beads; but there were also some bronze objects and a few clay pots. But I was really glad when CHIN came to me with an acquisition from one of the few Chinese living here. This was nothing less than a perfectly intact stone age vase of noble form and with very beautiful painting. (See Pl. 1 in Vol. VII: 1.) This was the first intact painted prehistoric vessel from the whole of Sinkiang! Here, too, Kohna-shahr was given as the finding place, and it is not impossible that it was actually found there, though all the other finds I saw were of rather recent date, for the region referred to as The Old Town was pretty extensive. CHIN went out to the site and returned in the evening with an earthenware vase from a grave, as well as some bits of bronze.

As I should probably require a longer period for an investigation of The Old Town we decided upon a radical change of plan. HASLUND was to ride on ahead to Charkhliq in order to make arrangements about the camels that we had left there on summer pasture, and to »return» ETT AHUN, whom we could not keep indefinitely, as he really »belonged» to SMIGUNOV. Accordingly, on the same day that I moved out to the edge of the oasis, HASLUND and ETT AHUN rode off together, leaving me alone with the natives and my old town. When our friend »the major» took leave of HASLUND he doffed — his turban.

The oats lay newly reaped in the fields, and in several places the business of threshing was already in full swing. The procedure was as follows: the seed was spread out on a round patch of even, hard-tramped earth, whereupon oxen were made to tramp round and round upon it. In one place I saw as many as nine oxen working as threshing-machines. As far as I could make out, the animals were not dragging any stone rollers after them.

My Swedish flag was hoisted over the new camp, but no friendly puff of wind played with its ragged folds. And in the evening the cicadas struck up their wild, stridulating music in the green around.

Out here, away from the bazaar, I was quit of the long, daily »medical consultations»; only one or two patients turned up. In return for the pills or ointments I was able to give I received lovely bunches of grapes, and melons without number.

### *Old Charchan*

Kohna-shahr is a huge area beginning immediately to the west of the oasis and consisting of bare gravel desert, with here and there a sand-dune. Almost everywhere one sees old potsherds of coarse earthenware and fragments of mill-stones and slag. There are no traces of house remains; but the ground is slightly undulating, and it is possible that such ruins are concealed in the mounds.

I excavated several graves, in which the skeletons, owing to wind-erosion, lay rather near the surface. It was clear that the finds on the surface of the ground derived both from graves and from dwellings. Unfortunately, the best grave had been plundered by a couple of Turkis before I discovered it (grave 6, whose skull, according to the anthropological measurements that were carried out ten years later, proved to be that of a 20-year-old woman with mainly Nordide features. See Vol. VII: 3). The relics of apparel in this grave had been spoiled by the plunderers.

On one of my mapping excursions with the cyclometer, that I could undertake only early in the morning and late in the evening on account of the otherwise insufferable heat on the black desert surface, I found an old irrigation canal flanked by embankments. This was quite a long way outside the oasis; and a whole net of smaller canals branched out from the larger one.

The finds from the obliterated ruins of this town seem to date from various periods within the first millenium A. D., and also from the first centuries after the year 1000 A. D. The reader is also referred to my monograph (Vol. VII: 1 pp. 204—218).

### *From Charchan to Vash-shahri*

On August 13th I left The Old Town and the pleasant Charchan oasis behind, setting out on the main road to Charkhliq. This is the same route that MARCO POLO followed in the 1270's. It is well-known, and has been described by several travellers.

Just below Charchan the landscape reminds one of the Lower Tarim: beds of reeds, grass plains, poplar groves and thickets of tamarisk — the latter now bloomed for the second time this year. But the vegetation is more luxuriant along the Charchan-darya.

In the rather large oasis Tatran, where I stopped for a rest and a bite of lunch on the 14th, I was met by a Turki with mail — including the first letter from home for five months.

How disagreeably dense and confusing the vegetation along the banks of the river was, I discovered one day by getting lost, and wandering about endlessly without finding the caravan. One of our camels also cleared off on its own, and was away for a day and a half. For my own part, I was on this occasion several times hopelessly entangled in the tamarisks; and the reeds were so high that they met over my head. Even the ground was covered with old loose reeds — not exactly the best sort of surface for one on foot. It even happened that my Chinese, who like the rest of their compatriots seem to have the points of the compass in their bones, and whose whole view of the world is strictly cosmological in its foundation, mixed up north and south in these tracts.

As far as Aq-tash-dung the road follows the river quite closely. A smaller road

runs alongside the river also in the sequel; and this seems to have been taken by earlier travellers. The main road goes more direct through the sand to a place called Yaqa-toghraq. It was from Aq-tash-dung — thanks to a clearing of the air by a storm — that the Astin-tagh in the south was visible for the first time since we left its lofty regions. The chain is rather even, without high peaks, and partially snow-clad.

We came immediately upon a dry, tree-bordered river-bed, where a flock of sheep stirred up the dust in clouds. We rested at a shallow well, where we got water by dint of digging. The wind rose, and the sand was set in motion. It was simply swelteringly hot! One of the she-camels had a miscarriage; but it seemed to affect her but slightly, for when we resumed our march she bore her load again. We went through proper dunes, about 15 m high, and here we lost the road. Pitched camp in the vicinity of the well Boghuluq. The stars apparently had not the force to shine through the whirled up masses of dust except in the zenith, and even here they were only faintly visible. The moon disappeared long before it had sunk below the horizon.

The following morning the atmosphere gave the impression of November fog; and yet the air was as dry and hot as a baker's oven. In several places along the road we came to wells; and one struck water already at a depth of about one meter. The desert was thus not particularly dangerous; but then the distance to the Charchan-darya was not very great either. The sand was succeeded by *sai*, after which came a poplar wood, Yaqa-toghraq, where there were two wells. On either side of the dry river Tash-sai there were both drift sand, tamarisk cones and small yardangs. I pitched camp in a raging sandstorm at Chingeliq, a *langar* of reeds and brushwood. Here I was fortunate in buying a chicken, and it was really quite a treat, for I had not had a bite of meat for over a week.

## *Vash-shahri*

On August 22nd I calculated that we should reach the ruined town in the vicinity of the village Vash-shahri; but when it came to the point the guide could not find the place, although he had declared that he knew the way. The next morning we got hold of some natives, who led us through the fantastic labyrinth of the tamarisk cones to the *tati*, that here, too, was called Kohna-shahr (see Pl. XX a in Vol. VII: 1). There were completely insignificant remains of brick houses. The real finding-places (there were two of them), where one finds potsherds, bits of Celadon porcelain, beads, fragments of glass, little bronze objects etc. in the sand, are not so extensive as the Charchan Kohna-shahr, but still extensive enough. On account of the dense tamarisk cones it was not possible to get a proper survey of the whole field. Some of the cones had grown over house remains, for I saw a bit of brick wall projecting from the face of a hill-

ock. Spindle whorls were prominent among the finds, from which it is evident that spinning was an important occupation here when the town was flourishing. To-day there is only dry desert here, but at that time — the 13th and 14th centuries — a river-arm must have flowed past here. For the finds, see Vol. VII: 1, pp. 219—223.

### *Charkhliq*

Via the modern oasis Vash-shahri I continued on August 24th on the main road to Charkhliq, that followed the boundary between piedmont *sai* and the vegetation belt to the north thereof, that consisted of tamarisks, small bushes, grass and a few isolated poplars.

In a couple of pits dug in the river terrace at Yilik, where we rested on the 26th, I was met by a mail-carrier from Charkhliq. It was heart-warming to find that postal communications seemed to have been properly established, and to get letters from home of which the most recent were not more than two months old. It was here that I received the sensational news of the assassination of Governor-General YANG in Urumchi on July 7th by our friend Foreign Commissioner FAN, who had himself been killed soon afterwards.[1] Curiously enough, CHIN had already got some wind of this business in Charchan (thus only 5—6 days after the murder). There was no telegraph between Urumchi and Charchan, and the nearest telegraph station is at least 650 km distant.

On August 27th I arrived in Charkhliq, where I ferreted out HAUDE's meteorological station on the northern skirts of the oasis. Here I met HASLUND again, and saw HAUDE for the first time in ten months. DETTMANN, on the other hand, had gone back to Urumchi to return home. The student LI was up in the Astin-tagh at the high-level station.

So now I was once more in civilized surroundings; but it went so much against the grain with me to settle down indoors that I preferred to set up my tent in the garden of the station and sleep there. HAUDE, too, tented in the garden.

My reunion with HASLUND was brief this time; for after having got my camels together and wound up the business of the hired animals he was off again, on August 30th, to Urumchi. It was with a heavy heart that I parted from this splendid comrade and manliest of friends.

### *Miran*

September 5th—13th I spent making an excursion to Miran to go over the ruins, that had already been investigated by STEIN. Unfortunately, I had none of his publications with me. There were 30 houses in the village, which had grown of recent years; for all the people from Abdal had moved to this place

[1] This was the general version then; long afterwards FAN was rehabilitated.

since the Lower Tarim had changed its course and left their previous settlements without water.

The majority of the ruins at Miran are the remains of Buddhist temples that have been built and decorated under strong Indian influence, if not actually by Indians. The largest ruin is that of a fort built some centuries later, from which the Tibetans ruled the southern edge of the Lop-nor basin and protected the great east-westerly caravan route that once ran past here.

In the solid fortress there were a lot of very tiny square »rooms» that had been excavated by STEIN; but they had now begun to fill with drift sand. From the tower of the fort one had a magnificent view to the north over the wide tamarisk plain, where mirages were already shimmering at six o'clock in the morning, although the chill of the night still lingered in the air. In the south, the familiar and mighty profile of the mountains stood against the skyline.

As is the case with so many other ruins in Eastern Turkistan, the river that was the primary factor for the settlement of the locality no longer flows past the place. Its course now lies 5 or 6 km farther west. If the garrison of the Tibetan fort had been sufficiently numerous, it ought not to have offered any great difficulty by means of dams and embankments to keep the Miran river in its old bed; but this was evidently not the case. It appears at least probable that the displacement of the river and the abandoning of old Miran have something to do with each other; but which is cause and which is effect is perhaps more difficult to decide.

A deputation from the village, headed by HEDIN's old servant TOKHTA AHUN, came with melons, apricots and grapes in such quantities that I should have needed a month to eat them up by myself. TOKHTA AHUN had with him a thirty year old son, who had the same genuine look of goodness in his face as his father.

The old fellows showed the way to a burial place about 5 li to the north, near an ancient watch-tower. Here I afterwards excavated three skeletons, one of which had a very original coffin: the hollow trunk of a tree. Unfortunately, however, the finds were few. These graves were interesting chiefly in the light of the anthropological measurements of the craniums that were afterwards carried out in Sweden. They belonged to a twenty-five year old man, probably Tibetan, a twenty year old Chinese girl, and a woman between the ages of twenty-five and thirty with both Indide and Mongolide, but predominantly Nordide features. (Cf. Vol. VII: 3). The inhabitants of old Miran thus constituted a rather motley crowd.

Threshing was going on everywhere in the fields in Miran. On the top of the centre-pole around which the oxen tramped there was affixed either a bough or a little sheaf. Unfortunately, I did not find out what this signified.

According to plan, I should have proceeded from Miran to the lowest part of

the dried-up Tarim and thence to the Quruq-tagh to meet NORIN at Shindi. But as I went down with some throat trouble accompanied with fever I deemed it best to return to HAUDE in Charkhliq, where I duly arrived on September 13th, after a stormy ride over the drearily sterile gravel desert. HAUDE bundled me into bed indoors and prescribed a regular horse-drench, that restored me to health in some days.

### *From Charkhliq to Tikenliq*

On September 23rd I bade farewell to HAUDE and LI (the latter I never met again), and set out northwards the same way that I had come. It was exactly four months since I had arrived in Charkhliq for the first time. Then, there was burgeoning green wherever one looked; now, many leaves were beginning to wither and turn. But 'en revanche', the earth seemed overflowing with ripe fruits and magnificent autumn flowers. The oasis was less fertile in the north, for the life-giving river flowed in this direction. The numerous house-ruins and weed-choked fields in these parts showed that the water supply was insufficient. It was said that the rich, who stood on a good footing with the irrigation official, had their maize-fields properly flooded three times a year, while the poor had their fields watered with the surplus — if there was any. Although the oasis makes a prosperous and flourishing impression, much poverty is made permanent by this arbitrary distribution of the water; and Charkhliq is said to be one of the heaviest cares of the Governor-General, and has to be given annual financial support. It is very uncertain, though, if anything of this support found its way to the poor.

The caravan now consisted of 20 camels (we had not lost a single animal), and 3 donkeys. It was difficult to recognize the surroundings when we passed the lower reaches of the Charchan-darya. We were able to fill the water-barrels from the stream-bed; but otherwise, all the country round about was as dry as a bone. Of Qara-buran, that had been a big lake with a foot of water in May, there was now only a white layer of salt between the clumps of reeds. Past the desolate station-house at Lop, with its reed-walls smeared over with clay, flows the main stream of the Charchan-darya in the direction N. 70° E. It is about 50 m across; but now there was only bitter water in a few isolated pools. The village of Lop is situated a little farther down the river, and consists of about fourteen reed huts. The stillness of the evening was broken by a most spectacular conflagration in the reeds just near the village. The smoke billowed up like a gigantic tree of blue-black colour. That the reed huts did not catch fire was astonishing, for they seemed to be almost licked by the flames. But then these huts resist the sparks from the fires that are made inside them, and they are perhaps more fire-proof than one might expect.

Flocks of wild geese, mallards and gulls flew in both directions along the river. I also saw one or two eagles and vultures hovering with their mighty span of wing in the upper air. And the ravens were astonishingly familiar, to the great vexation of the dogs.

To the north of Lop there had also been a lake-bed; but now young tamarisks were beginning to sprout among the reeds. There were a number of quite superfluous bridges there.

The road to Tikenliq did not, however, offer anything really new, over and above what the journey out had done. In some places I went dry-shod on the bottom of the river-bed, where at the beginning of the century HEDIN had voyaged in a boat. In the wood at Toqum I found two bird-traps made of net and set with reeds. Inside one of them sat a fettered hen, who was evidently not having a very pleasant time of it in the heat. The big dog, Kitcho, got caught that same day in a steel trap, fortunately without hurting himself seriously. The poor people hereabouts, who were formerly fisherfolk, have now started to trap land animals, since there is no longer any river to spread their nets in.

The old Turki living in Arghan, in reply to my enquiry, declared that neither the Yarkend-darya nor the Konche-darya, that flow together here, had carried running water for a matter of 6—7 years. All the water from the whole Tarim system goes into the new river Qum-darya. Only a year before people had lived at Shirge-chapgan. The old fellow knew all about SVEN HEDIN and the ferry in which he had voyaged down the Tarim in 1899, though he himself had seen neither, but only heard about the voyage from his father. As I happened to know that the ferry had been brought up here to be used for the river-crossing, after HEDIN left it at Chigeliq-öi, I tried to hunt up the possible remains of this historic craft. It was not hard to find them: in the huts fine thick planks had been used as roof-rafters, door-posts etc., and in the rooms of the house were shelves made of similar planks. One might safely wager that these were all relics of the proud ferry that had been built at Layliq, east of Kashgar. I was unable, however, to find SVEN HEDIN's name, that one of his Cossacks had carved in a plank; but then I could not examine more than half the planks on both sides.

After Arghan I followed a course almost due west along the Konche-darya, that now had relatively much water, though not running. I stopped at my old camp 155 at Toqumanla, where the poplars near the river were beginning to show dashes of yellow in their green attire. In the morning the air was as refreshing and clear as on an Indian Summer's day in Sweden. And the luxuriant green on either side of the river with its standing pools was more reminiscent than anything else of a middle Swedish landscape. (See SVEN HEDIN's »Gobiöknens gåtor», plate facing page 297).

At Qara-dai there were plenty of wild ducks in the pools in an overgrown

lake. Near the road women were baking bread in one of those curious ovens dug in the ground and widening downwards from the surface hole in the shape of a beehive. The cakes are pressed firmly against the walls of the oven while the fire is built on the bottom with sticks, till it is blazing like a Bessemer furnace. Turki bread is uncommonly good, especially the thin, large wheat-cakes that are baked rather crisp. Some mix a little hacked onion in the dough. The smaller, round cakes with a big hole are also very tasty. The melons in Qara-dai, on the other hand, were miserable affairs: small, dry and woody. But what more can be expected of a tract that is in process of becoming desert? The river no longer supplied irrigation water; the villagers themselves were dependent on four or five wells. In the river there was scarcely a single little pool. And the water in these few pools was bitter. One noticed a distinct deterioration in the taste of the river-water since the journey out. I dare say there is not a single drop of good water between Charkhliq and Tikenliq on this road.

From Qara-dai's *aqsaqal* I heard that the Yarkend-darya had not carried water for ten years, and the Konche-darya not for five. The village Tüghemen to the north of Qara-dai was now deserted. He complained of the process of desiccation and begged me to urge the critical situation of the population to the higher authorities in Urumchi.

In a little pool in the Konche-darya my men set about catching fish in a highly comical way. Two of them rushed about in the water holding archaeological cribbles before them. And they actually did catch quite a lot of fish — the largest about a foot in length.

This time I did not go through Yangi-su, but took a more direct road to Dural. We passed a river about 50 m across with a few pools and a dam construction similar to one at Qara-dai. The river ran N. 65° E. I pitched camp at Achiq-su, some pools in a river-bed (probably the Konche-darya).

At Dural there was now more water in the river than in the spring; but there was scarcely any current.

In Tikenliq, where I intercalated a rest-day, I heard that the volume of water in the Qum-darya was so great that it was very difficult to make the crossing with camels on the little ferry that plied from bank to bank near Ying-p'an. I therefore decided to go up to Korla, whence I would take my way through the Quruq-tagh to Shindi and Norin.

### *From Tikenliq to Korla*

When on October 3rd I set out from Tikenliq it was on a road that was entirely new to me. Immediately to the west of the oasis commenced a wide clay plain with tamarisks. After dusk we passed several groves of trees and kilometer-wide belts of drift sand. Towards the end of the march we now and

then skirted a dry river-bed to the south of the road. We encamped, finally, beside a pool therein at Chigeliq-örteng, where there had formerly been a reed hut. On STEIN's map (of 1915) this uninhabited spot is marked in just as big lettering as Tikenliq, which is a medium-sized village. It had been deserted for 25 years, my guide stated, but the Turkis' sense of exactitude as regards numbers is next to nil.

The following day we crossed the river (Ara-tarim) immediately, going over on a dam construction on the left side of which was water. At first we followed the road on the north side of the sinuous windings of the river, from which numerous dry canals branched out. A little later a dry river-bed was running on the right side of the road. We next struck the river to the left of the road again; and this time it was carrying water. Just to the east of the village Kuzliq (on STEIN's map Kuzlek-mahalla, given with very small letters) we crossed the once again almost dry river.

In the village, consisting of 70—80 houses, a Chinese merchant from Tikenliq had opened *p'u-tze* for some days. The place made a dreary and grubby impression, for there were no trees. Thereafter we had the dry river, the Ara-tarim, on our right. Beyond it lay a wall of sand-dunes. STEIN's map has here a water-carrying river. The plain was treeless, and in the south one saw the high sand beyond the Yarkend-darya very clearly. Towards evening we entered the wood flanking the river, and there we saw a couple of wild pigs scampering over the road. We crossed the Ara-tarim, that was spanned by a simple bridge, and followed the stream some little distance to the north. For a while, after losing the river from sight in the darkness, we had water to the left of the road. We reached the village Ulugh-köl at nine o'clock.[1]

In clear weather the Quruq-tagh is distinctly visible from here, as it is from Tikenliq. The village consists of thirty houses and lies on a salt-encrusted clay plain with a few meres and a vegetation of small tamarisks and such like. The traffic on the road is not exactly dense, but it is livelier than it is farther south. About every ten kilometers or so one meets a donkey. After a march of 45 minutes we reached reedy lakes: to the south of the road Okarliq-köl, to the north Qalmaq-chüste, the latter marked on STEIN's map. The two lakes were joined by connecting arms, that one crossed on bridges. The water was flowing south!

Before the village Chevetnu-öi, with about ten huts, there were lots of wild pigs. I shot a few young ones. These beasts, which are heartily detested by the Mohammedans, evidently thrive in the little meres and the swamps hereabouts.

Contrary to the Swedish practice, the hay is stored *on top of* the roofs to keep it dry, and not underneath.

[1] This is probably not the same as HEDIN's Ulugh-köl, that is situated near the Yarkend-darya. Actually the name refers to a lake to the south of this river; it means simply »Great Lake».

We followed the northern edge of the Yaman-tarim's broad but completely dry bed. (Is this not the same river as the Ara-tarim? If so, the Ara-tarim takes its water from one of the two sides, e. g. via Qalmaq-chüste from the north.) Beyond a grove and towards the north-west extended a great plain, with dry grass growing on rather salt-encrusted clay. Here and there were dry canals. We pitched camp at dusk in the village Chara.[1]

From Chara's two *aqsaqals* I had the following information about the hydrography of the surroundings: the Tarim lakes Seit-köl, Bash-köl, Gölmö-köl and Qarauneliq-köl have some water, whereas Yangi-köl is dry. The Yarkend-darya in these parts carries water only during the 8th and 9th months. The Yaman-tarim has been dry for 18 years.

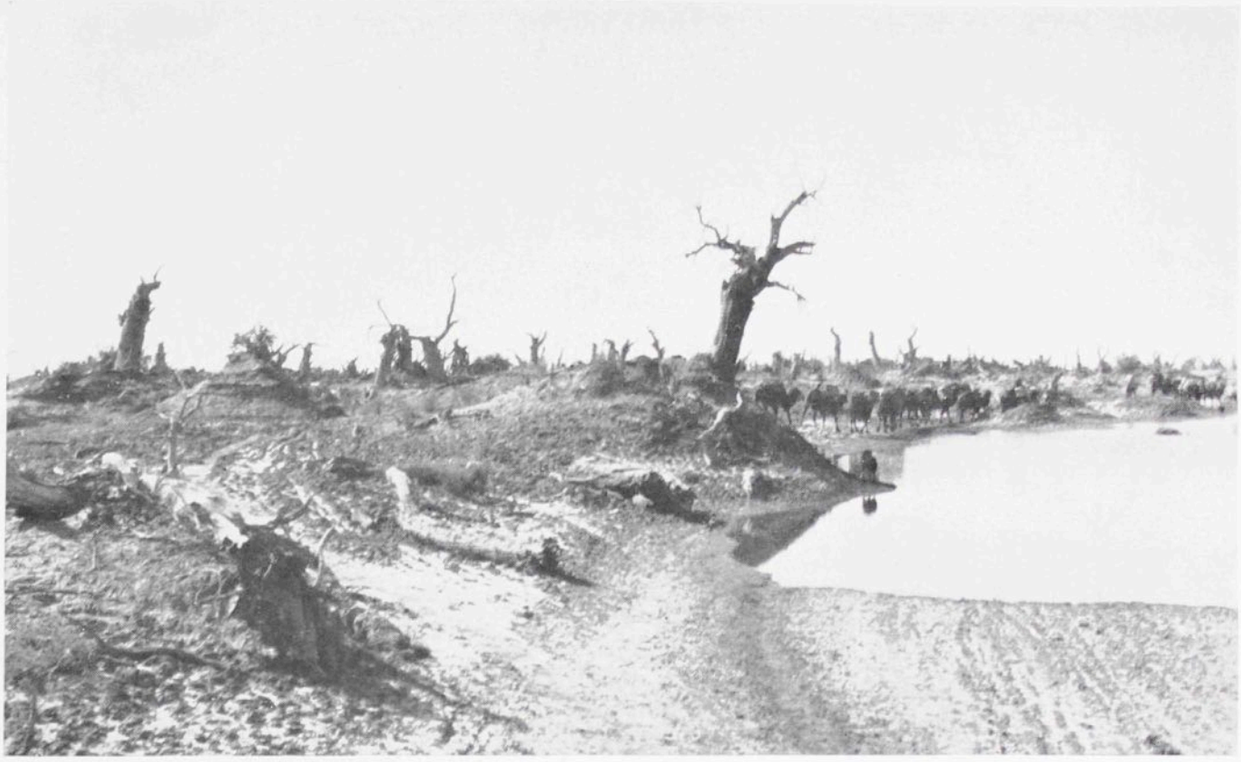
SVEN HEDIN's former servant KUCHUK (KUTSCHUK), who was with him for two years from Yangi-köl to Tibet, came on a visit with a few eggs. He was now a bowed old man, but his eyes were still clear and youthful.

In the village there was what had once been rather a stately Chinese house, where cows now wandered in and out. During the march we now and then skirted the bed of the Ara-tarim, with its stagnant water. After an hour on the way we passed the village Thais-köl, where my little dog went rushing over the bridge to the south side of the river and into the jaws of a fox-trap. Fortunately, they were without teeth, so he got off more lightly than the big dog Kitcho had done. Beyond the village two canals out on the gravel plain to the north had running water, that had caused a minor flood. We had to make a little detour to the north to avoid the water in Thais-köl. We followed the river along the edge of the reed-bed, and crossed the clear blue water by a bridge at 3.15 p. m. At four o'clock we came within sight of a longish sheet of water somewhat to the north of the river, that was now on our right. We were continually starting metallic-hued pheasants, that rose with their staccato and engine-like flight, to glide on their short wings to a landing among the reeds a hundred meters farther off. There were innumerable hares, as indeed there were along the whole Tarim. And ravens circled slowly in the air.

We went on to the narrow neck of land between the Yarkend-darya and the Chapgan-agiz-köl at 4.30 p. m. At this point the river has quite a volume of quietly flowing water; but it was a long way below the highwater marks. In the lake, dark blue patches of water glittered here and there among the rank growth of reeds.

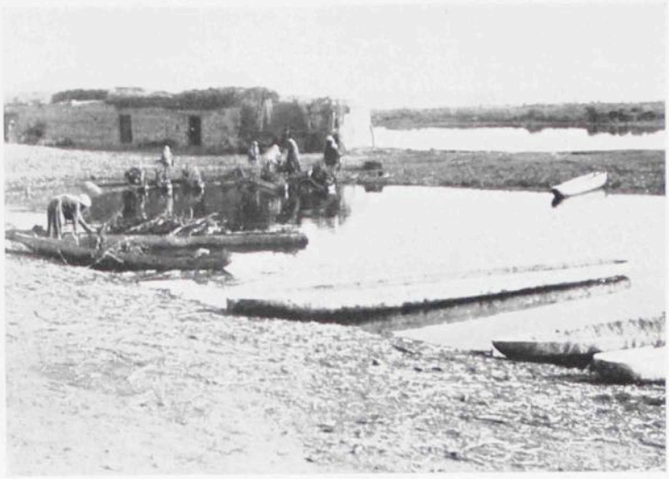
The site for camp 240 was decided not by me, but by my camel, that took fright in the darkness, flung me off into the swamp, and disappeared with my portfolio dangling from the saddle. And there I had all my maps and notes! When the truant was brought back the portfolio was torn open and empty. In

[1] HEDIN's Chara lies on the south side of the Yarkend-darya; but the village here in question, that is identical with STEIN's Chara, lies on the north side of the Yaman-tarim.



a. Dead poplar wood between Khoto and Chong-köl inundated by the floods from the Ugen-darya

b. Chong-köl. In many places the primitive bridges were destroyed by floods. October 7th 1928



a. The village Chong-köl

b. My camels being ferried across the Konche-darya at Yar-cheke

the best case my notes lay scattered about in the swamp; in the worst event they were floating serenely down the Yarkend-darya. But at dawn we actually managed to find every single sheet, and I lost nothing, praise be to Allah!

After forty minutes' march we reached Khoto, where there is a lake also on the left side of the road. The water in these lakes is higher than in the river, thanks to dams. We followed the north shore of the lake on the left at first, and then turned off into its reed-bed to cross a number of queer bridges and wade through several muddy pools of water. In one of these the water came up to the donkeys' bellies. The last 500 meters over the lake were really exciting, for the »road» consisted of an earthen rampart about one meter in height and only half a meter wide, that meandered through the water in the most unpredictable way. If one of the clumsy animals had taken a single false step we should have been literally in the soup, but all went well. I heaved a sigh of relief when the whole caravan was on terra firma once more. There was a house quite near. The lake, meantime, continued on the right of the road. The water was sinking; the high-water of the autumn had passed. According to STEIN's map it is the Ugen-darya that crosses the road in these swamps.

In the middle of the day we went through a dead wood (Pl. 7 a). The road was difficult, and wound about through sand and between cones. Though this is the cart-road between Charkhliq and Korla it is truly not much of a thoroughfare. The camels were continually splashing through pools; and now and again we crossed a rather deeper watercourse by a bridge of brushwood. At 1.30 p. m. we had a long row of bridges, consisting of earthen ramparts which in places were strengthened with slender tree-trunks or brushwood. The last bit had been washed away by the south-east streaming water. Splash! the camel with the water-tubs was sprawling in the water. But no harm was done and its load could stand a wetting. At two o'clock we had to make another crossing where a bridge had been washed away, and here the water came up to the camels' bellies (Pl. 7 b). An hour later we were entering the village Chong-köl, that derives its name from this flood region.

The impression of the village, with its grey houses, was drab and dreary enough in itself, yet the fact that these miserable little huts were reflected in quiet sheets of water lent it an idyllic air. A little bay was full of canoes loaded with fuel (Pl. 8 a); the inhabitants of the thirty houses speared fish for a living, and the poor were said to eat nothing but fish.

According to STEIN's map, that as regards the topography seems to be very good for the stretch between Chong-köl and Tikenliq, the river flowing through this village is the Inchike-darya. But since the water of the Yarkend-darya nowadays does not reach farther down than to Chara, also those parts of its waters that are not exploited for irrigation purposes must flow either into the Chong-köl swamp or, more probably, in the swamps immediately to the south

thereof (that are perhaps connected with Chong-köl). It is also possible that the Yarkend-darya bifurcates with the Ugen-darya considerably higher up than at Chong-köl. When one sees the many irrigation canals in this riverine plain one gets a strong impression that human activity has played a very great, indeed, perhaps decisive rôle in the last great hydrographic change, when the entire volume of water from the Tarim system went over to the Qum-darya instead of, as earlier in our day, following the bed of the river down to Qara-qoshun. The people in Tikenliq told me, moreover, that a canal construction here in the neighbourhood was the cause of the change in the river's course. One does not, of course, need to take such information all too seriously, for it might well be an expression of resentment on the part of the inhabitants of Tikenliq at people living higher up the river getting a better supply of water for themselves at their expense.

With the exception of the main road followed by me, and a few of the river branches, this region is unmapped. As seen from the above narrative, the hydrography is very complicated. The only way to map this geographically very important region would be from the air, and such a survey ought to be carried out at both the high-water and low-water seasons.

When on October 8th I resumed my journey from the village Chong-köl I was accompanied by a whole staff of guides; and during the first part of the march we were travelling more in water than on land. But it was only in a couple of places that the water was as deep as one meter; otherwise it was shallow enough. The air was filled with all sorts of aquatic birds that we startled into flight.

After a couple of hours we saw a house about 800 m away to the east, and scarcely half an hour later we passed a house (probably STEIN's Awaila) to the left of the road; here we were on dry ground again and in among poplar groves. To the right of the road there were still extensive sheets of water, that proved to have been left by receding floods from the Konche-darya. We reached this river after a march of 2 hours and 45 minutes from the village Chong-köl at a place called Yar-cheke. Travellers were ferried over the river, that is here 300 m across, on a raft made out of five canoes bound together and provided with a deck of planks (Pl. 8 b). After a couple of trips all our baggage and two of the donkeys had been ferried over, and the camels were taken three at a time. The whole crossing went without a hitch, but we had so many willing hands to help us that it was not surprising. The scenery was beautiful, with dense groves of poplars everywhere.[1] The water did not reach the high-water mark, but it would still be carrying more water than normal three months hence.

When we continued on the north side of the river we came almost immediately upon a river-like lake only 50 m to the east of the river — Yolbars-köl.[2] This

[1] SVEN HEDIN had his camp 55 here from April 6th to the 8th 1934.

[2] Not marked on STEIN's map. He did not cross the river before reaching Qara-qum, i. e. Yü-li-hsien. In my reckoning the distance between Chong-köl and Yar-cheke does not take one farther

was probably a loop of the Konche-darya that had been cut off and isolated. Half an hour later we were passing a similar lake to the left of the road, Yagdashidep-köl, about one kilometer in length. After four and a half hours we were obliged to call a halt, as my camel went through an old bridge over a dry canal, and it took three-quarters of an hour to extricate him.

The next morning we reached Yü-li-hsien or Konche after a short hour's march, and I paid the magistrate a visit in his unusually clean yamen. This place was no more than eight years old; before this it had been situated at Qara-qum, an oasis to the north that is also called Chigeliq. On BYSTRÖM's map, that for these tracts is based upon PRJEVALSKY, Chigeliq is marked in, but evidently too near the river. A good thirty kilometers higher up the river there is a place called Kuenchi, that is supposed to be Konche; but whether this is another Konche or a misplacing of the name I have not been able to check.

We pushed on to the scattered oasis Qara-qum, that is to say, Yü-li-hsien's predecessor, where a fleshy Tungan tried to palm off an ambler on me for 260 liang. He refused to take the 150 that I offered.[1]

The next camp was the village Bash-inges, situated somewhat to the north of Shinega.[2] The village is situated on the bank of the little river Qara-su.

### *Korla and its surroundings*

On October 11th I arrived at the wonderfully beautiful Korla oasis, where I stayed for a day (Pl. 9). Here I met the Rev. HUNTER from the China Inland Mission in Urumchi and his colleague the Rev. MATHER, who had just arrived from India. HUNTER was on his way back from a mission trip in western and south-western Eastern Turkistan. In Maral-bashi he had met WALZ, who after finishing his service at the meteorological station in Kucha returned to Germany via India. Through newspapers he had got from Swedish missionaries he was aware that SVEN HEDIN had returned to Sinkiang, which was more than I knew.

In Korla I bought a beautiful horse from a Turki, that served me faithfully during the whole time in Sinkiang (after which NORIN rode it all the way to Yarkend, where he left it to the Swedish missionaries). Despite the fact that Korla has a predominantly Mohammedan population — Turkis and Tungans — one could buy pork in the bazaar; and potatoes were also to be had. For the first time for eighteen months I tasted fried bacon.

On October 13th I set off on a little excursion with a diminutive caravan in

than to an arm of the river that on STEIN's map lies 4 km south of what he calls the Konche-darya. His map is wrongly drawn here.

[1] This oasis, that is now on the decline owing to over-irrigation without adequate drainage, is said to have been founded in 1896 by Tungans who migrated from Kansu. (HEDIN, Asien II, p. 52.)

[2] Chinalga on BYSTRÖM's map. The curious long chain of hills that on this map stretches from the Quruq-tagh to Chigälik does not exist in reality. It is possible that a low terrace ridge is referred to; but this is not so extensive either.

order to visit the ruins of Ming-öi on the way to Qara-shahr, and the ruins of a town with the sounding name of Baghdad-shahri. This was more in the nature of a tourist trip; the ruins were already well-known, and had been investigated by several explorers such as GRÜNWEDEL, OLDENBURG and STEIN, and I had no intention of starting any excavation. But it would have been a pity not to see them when I happened to be so near.

The monastery buildings and the temples at Ming-öi were imposing, but the frescoes were modest as compared with those at Bezeklik (Pl. 10 b).

The first night-frost of autumn I experienced near Danzil on October 16th, when the minimum temperature was —5.2° C.

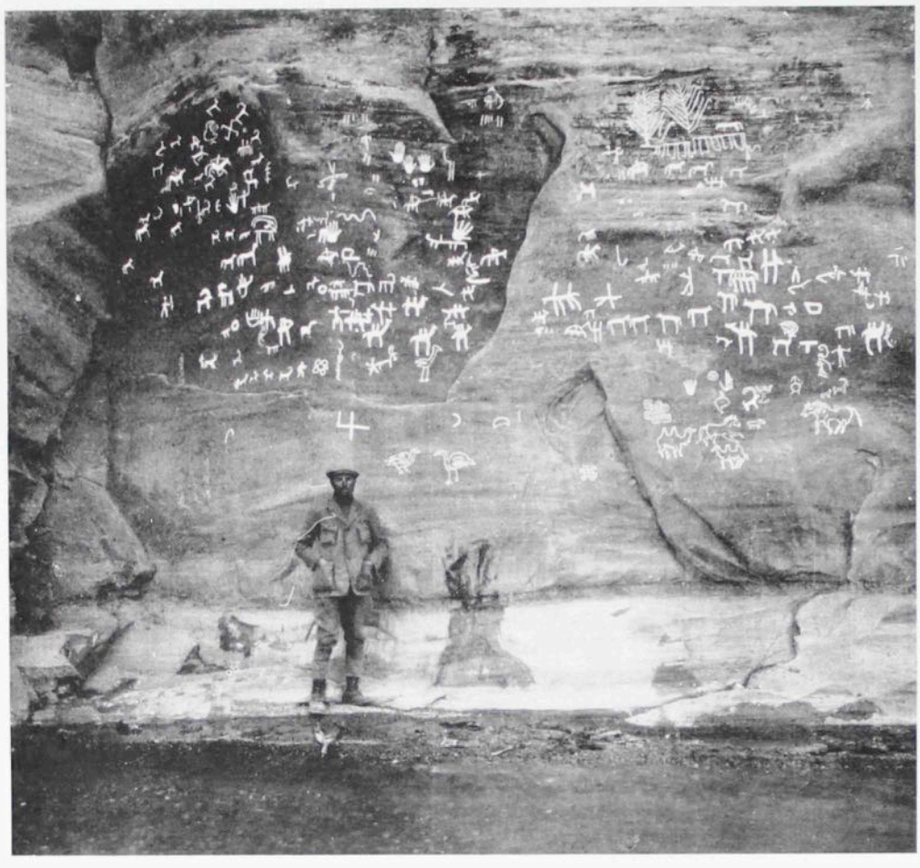
The ruins of Baghdad-shahri presented a most desolate appearance. Within its decayed square rampart, the remains of the town wall, there were only a few isolated mounds, and thorny scrub grew in abundance in the salty soil.

The pointed cupolas of Mongol yurts projected above the high grass of the plain in the vicinity. These were the winter dwellings of Qara-shahr Torguts, who spent the summer months in the T'ien-shan. Through the shimmering haze one caught a glimpse of these distant mountains on either side of the Yulduz Valley; the peaks were in part snow-clad. The Torguts said their nearest temple was in Qara-shahr. One large temple is called Shara-sume, and is situated in the mountains two days' journey on camelback from here. The Torguts I saw were clad half in the Chinese style. A young fellow was dressed in European clothes from head to foot. The various items in his attire seemed to have been acquired on as many different occasions, but a European ensemble he had in any case achieved. He was a rather evident snob, and his taste for cheap finery had found expression in a Russian woman's girdle that glittered over the grey waistcoat, while on the front of his felt hat he sported a glass brooch!

I negotiated with the Mongols for a guide who might show me a mountain route to Shindi; but the few who knew the way wanted to be paid too much. I should also have preferred a Mongol in the dress of his own people; though if the worst came to the worst I was prepared to make shift with one in a slouch hat. With a brooch in front.

On October 18th I was back in Korla, and the same day a Russian by the name of ANTONOV, an ex-naval officer, arrived from Urumchi. Since our last meeting, when we had not been able to carry on much conversation as apart from his mother-tongue he knew only Turki, where I was without a chance, he had learnt a little English, and we were able to converse together in that language. He had ridden from Urumchi in five days, that sounded incredible to a camel-traveller like myself; but to travel without caravan and on a good horse is a very different proposition. And Russians *can* travel. Now he was on his way to India, to begin business in Bombay. In Kashgar he was to meet WALZ, whence he would bear him company over the Kara-korum, if they could only manage this before the passes became blocked

Stately Lombardy poplars flank the outer gate of Ch'eng-huang-miao, the Temple of the Guardian Deity, in Korla. In front of the gate is the spirit wall



a. The central part of the petroglyph near Shindi in the Quruq-tagh

b. Ming-öi, the ruins of an ancient Buddhist monastery near Qara-shahr

with snow. From Urumchi he had extremely important news for me, for I had had no mail from that town for over a month. SVEN HEDIN had returned from Sweden with four cars and two mechanics; AMBOLT was down with dysentery in Chuguchaq, where HUMMEL had gone to nurse him; HASLUND had arrived in Urumchi safe and sound after a seventeen days' ride from Charkhliq, and now he and NORIN had set out for Lop-nor.

That evening the house in which I was staying was shaken by a slight earthquake.

I had a look at the ruins of Yandash-shahr (The Town of Friends) in the oasis. There were only the remains of a low wall.

### *From Korla to Shindi*

On October 20th I started out for Shindi. I went first to Shinega, also called Chinör, where I managed to get hold of a guide for the Quruq-tagh. This was the hunter URAYIM (= IBRAHIM = ABRAHAM), who was said to know every path and every remotest nook in the mountains.

We followed, in the main, the jagged white terrace edge that lies a little ahead of the foot of the mountains, passing Suget-bulaq (the more westerly of the two springs of the same name) and pitching camp at Yar-qaraul. The next day took us to Gerilghan on the bank of the Konche-darya. On the way thither we passed the watch-tower that on STEIN's map is referred to as Sanji, though URAYIM pronounced it Sonje, i. e. Mongolian *tsonchi* or *tsonch* (tower). The following day I reached Sai-cheke. I climbed the watch-tower that lies a little to the westward (this was the fourth in order from Korla). The tower was roughly seven meters in height, and rather badly toothed by time. The vegetation was divided up into the following zones: immediately in the vicinity of the Konche-darya there were poplars, succeeded by reed-beds, after which came a narrow belt of tamarisk cones, and finally small bushes growing on the piedmont slope of the Quruq-tagh.

On October 24th we left Sai-cheke and set a course almost due north to the southern foot of the mountains, striking the little salt spring Ismi-yil. Before we pitched camp there we passed the valley mouth Kötekliq, that is rather wide and comes from Tughe-bashi. Near the foot of the mountains the edges of its ravine were 10 m high. A little to the east there was a larger valley, Djodor, where there was a spring a little way up into the mountains. The next day I went on to the Suget-bulaq, a water-carrying brook in the mountains, and followed it sourcewards along the lovely valley in which it flowed. During the night, when a high wind was blowing, stones came tumbling down from the vertical walls of the mountains at frequent intervals, landing on the valley-bed with loud reports, as if the spirits of the air were using pistols and blunderbusses.

A bit farther up the valley were the ruins of an old fort; and it was on

account of this hitherto unknown relic of antiquity that the guide had taken just this route (the route via Qurbanchiq is the one most commonly taken). We encamped near the ruin on October 26th in the first snow of the year, surrounded by the most magnificent and romantic mountain scenery. As the fort was built entirely of stone and was situated on a hill top, it merged so cunningly in the surroundings that one might easily have passed by without observing it. It is called only Kohna-shahr, like most of the more considerable ruins in this country. In the evening there was a blanket of snow three inches in thickness. During the one and a half days I spent here I made a plan of the irregular ruin, whose shape had been determined entirely by that of the rock itself, and not only investigated the fort, but also excavated a grave in a little burial ground in the neighbourhood (see Vol. VII: 7, pp. 195 f.). Unfortunately, the finds were few — some potsherds and a bronze pendant possibly of Ordos style — and they gave no direct *point de repère* for a dating.

Higher up in Suget-bulaq's lovely valley there were the remains of three little huts and old fields; people from P'o-ch'eng-tze had made an attempt at colonization here a couple of years previously. We pitched camp at Serek-bulaq and pushed on the following day to Eriksen-bulaq. On the way to the latter place I saw a pointed cairn of the type employed by NORIN to mark his fix-points when mapping, so I knew I must have entered his field of work.

On October 30th I rode on ahead with URAYIM on a rather more southerly route than that marked on STEIN's map. The latter follows the river Eriksen-bulaq up to the pass Eriksen-davan (STEIN's Elisen-dawan). The road was of the narrowest for camels. Just after crossing the main pass I noticed some stone rings that resembled house foundations or small sheep folds. They were probably what NORIN had learned from ABDURAHIM to call *degepter-tash-öi*. On the way URAYIM demonstrated his skill with his clumsy blunderbuss of a muzzle-loader by shooting a hare from horseback.

It was in a state of suppressed excitement that I trotted towards Shindi. Would NORIN and HASLUND have already arrived, or should I have to wait for them there? After a good eight hours' riding I reached the village. From good old ABDURAHIM I heard that NORIN, at least, had come, and I was soon spurring my tired horse in the direction pointed out. When I got to the camp NORIN's servants did not at first recognize me in my big Turki sheepskin coat and fox-skin cap. »Why does nobody come out to receive me? Don't you see that you have a distinguished guest!?» I bawled in Swedish. Upon which NORIN emerged from his white tent. I have seldom seen so astonished a countenance. He had no idea that I should be coming here so soon; and he had himself arrived no more than a short hour since!

HASLUND had gone to Qara-shahr to buy camels for HEDIN for his projected crossing of the Takla-makan and to hunt for me.

As NORIN's camels were in a poor condition (several of them had contracted some lung disease), a couple of his men had to be sent west to Mongol tracts to procure a number of fresh animals. Meantime we pooled our camels and donkeys to make a joint caravan. During the period of waiting until we should be ready to start out for Lop-nor, I took advantage of the opportunity to investigate some of the archaeological relics in the neighbourhood: inter alia a grave quite near Shindi and a *tash-öi* high up on the steep, rocky wall of the valley a little below Shindi. (See Vol. VII: 1, pp. 193 f.) But the absence of finds, except for some very simple objects, did not encourage me to continue working along this line. I spent the greater part of this waiting period thoroughly investigating the big rock-carving in the valley of the Bujentu-bulaq, 6.5 km to the south of Shindi. A very large part of the almost vertical limestone wall on the left is scrawled all over with animal figures, riders and magical signs. There were carvings even on some blocks in the brook. The carvings were »stratified» in such a way that the oldest were highest up and the youngest nearest the bottom. It was easy to distinguish three different styles more or less coinciding with the levels. The youngest style contained lamaistic signs and Torgut writing, and was accordingly quite modern; the oldest, on the other hand, was definitely prehistoric. I filled them in with white colour (gypsum was the only thing I had to hand; it was not ideal, as I was obliged to »mix my paint» repeatedly, for the gypsum hardened very rapidly). This was a pretty chilly job in the mornings at the beginning of November, and the servants had to light big fires along the rock face. Fortunately, there was ample fuel in the valley. The figures reach as high as 5.5 m above the ground, and it was necessary to get a ladder from Shindi, so that I could fill them all in. (See Vol. VII: 1, pp. 183 ff. and Pl. 10 a here.)[1]

### *A thrust towards Lop-nor*

On November 10th I returned to Shindi, where the baggage was sorted out and repacked, so that we could reduce what we should take to Lop-nor to an absolute minimum. On the 12th we marched to Kak-su with 25 camels, 18 of which were mine. The next day we made Azghan-bulaq, where quite unexpectedly we met HAUDE, who was on his way back from Charkhliq to Urumchi. His meteorological station in the former place he had left in the care of two Chinese students. He was travelling at terrific speed (he had come here in seven days, and counted on covering the rest of the distance in the same time — actually he took only five days, I think, which was quite a feat), in order to meet HEMPEL before the latter left for Germany.

[1] Since my publication of these rock-carvings in Vol. VII: 1 in this series, Field-Marshal MANNERHEIM's great travel-book »Across Asia from West to East» has appeared, from which it emerges that he discovered rock-carvings in the T'ien-shan (op. cit. pp. 239 and 288). The Quruq-tagh carvings thus seem to be a less isolated phenomenon than I supposed at the time of writing.

When we had taken leave of HAUDE the next day, and had covered a little distance on the main road to Toghraq-bulaq, we were caught up by a messenger from HASLUND with mail both from HEDIN and from Sweden! The expedition was meeting increasing resistance on the part of the new Governor-General (CHIN SHU-JEN), and prospects of our continuing our scientific work and our journeys seemed pretty gloomy.

Both at Azghan-bulaq and Toghraq-bulaq there were ruins of a little Chinese house that had served as quarters for the postal riders when they had used the Turfan — Ying-p'an road. This postal route, moreover, has quite recently been reestablished.

As soon as we had left Toghraq-bulaq and emerged from the mountains the brightly glimmering waters of the Qum-darya appeared in the south; and beside the river, later in the afternoon, we pitched camp for the night. For three days we followed the river eastwards. As the level of the water was now considerably higher than it had been when NORIN charted the river in April—May, a number of miniature lakes had been formed on the banks since then.

On the 17th and 18th we took the level of the distinct terrace on the north side of the river, that NORIN assumed to be an old shore terrace. It sloped towards the east with a gradient of 0.55: 1000. Near the river one heard frequent splashes from lumps of clay that loosened from the steep banks in consequence of the erosion by the current. The Qum-darya is both visibly and audibly a very new river, that is in process of creating a definitive bed for itself.

On November 18th we reached Yardang-bulaq, 6—7 km to the north of the river. At this spring the plain was covered for long stretches with salt, giving all the appearance of new-fallen snow. A large area is covered with tamarisk cones and sparse reeds. We encamped at the first fortress-like *mesa*, under its 10 m high clay wall. Big blocks had loosened and fallen down; and they were so symmetrical in shape that one almost felt they must have been hewn in stone by human hands. Here we stayed for two days. On the first day ABDURAHIM arrived from Shindi. He had been in Yü-li-hsien, whose magistrate now sent us a long letter requesting us to return to Urumchi. The Governor-General was anxious on our account, and feared that we might find ourselves in a possible war-zone near the Kansu border! So, at all events, he alleged; but the probable cause of his solicitude was that he desired us to discontinue our field-work and leave his province. For myself, this order did not mean so much, since I was in any case going to Urumchi fairly soon; but it was rather a shame not to get to Lop-nor when one was so near. For NORIN it was a sad blow, for he had planned field-work in the region of Lop-nor and Quruq-tagh for the whole winter.

The following day two Begs arrived from Tikenliq, HAMDUL and ISA, whom I knew from the time of my visit there. These worthy gentlemen also informed us that we must return to Urumchi. On November 21st these old fellows rode

back to Tikenliq and we set off northwards to the spring Dolan-achiq.[1] This was my camp 270. The next one had no name, but was situated about 10 km distant from the spring Jigde-bulaq. That evening ABDURAHMAN arrived in camp from Shindi — with mail for us! It was really astonishing how lively traffic had become in this desert solely for our sakes! This letter had been sent by HASLUND from Qara-shahr eight days before; he told us that he, too, had been obliged to return to Urumchi.

We proceeded without any road somewhat to the north of Toghraq-bulaq and south of Kak-su-davan, arriving at the little spring Ternekende-kak-su — in Mongolian Luck-usu. On the way thither we passed the little Kumchok-davan (The Nose Pass), about 5 li to the west of Kak-su-davan.

On November 26th I rode on to Shindi and fetched the things I had left there, took leave of the pleasant inhabitants, and returned to Ternekende-kak-su, where NORIN was to stay for a day or so for mapping work.

When URAYIM slaughtered a sheep he first cut the throat and let the blood drain out into a trough, where the big dog ate his fill. In the skin of one of the hind legs he then cut a hole that was enlarged inwardly with a wooden pin, and applying his mouth to the aperture he actually inflated the sheep to the size of a small balloon. This procedure facilitated the flaying.

On November 27th I handed over all the equipment that was not absolutely necessary for my return to Urumchi to NORIN; inter alia, the iron stove that I had had made in Korla, and that had contributed such a homey atmosphere to my tent, and HASLUND's »lacquer table». NORIN, meantime, was to move off westwards towards Baghrash-köl in order to return officially to Urumchi via Qara-shahr and the main road (i. e. a terrifically roundabout route), but in fact with the idea of gaining as much time as possible for continued geological and topographical work, and with the secret hope of being forgotten in the desert by the authorities.

### *Homeward bound*

About the return journey to Urumchi there is little to say. They were long, tiring, and icy cold marches. At Singer, where there was a little snow, I sifted the surface layer of the stone age site. The finds, that were few enough, went down to a depth of 6—7 cm. But several things had been exposed by the wind that we had not seen on the previous occasion. I did not now pass P'o-ch'eng-tze,

[1] This name is given as an alternative on STEIN's map, though here, as also on HEDIN's, the chief name of the spring is given as Yardang-bulaq. There are, however, no yardangs within a distance of 5 km, and ABDURAHIM insisted that the name had been wrongly applied. What on the maps was referred to as Yardang-bulaq was called in reality Dolan-achiq, i. e. DOLAN's Bitter (spring), and what was referred to as Yaqa-yardang-bulaq was called Yardang-bulaq. The real Yaqa-yardang-bulaq is not given on any map. This little source is situated somewhat to the S. S. E. of Yardang-bulaq. All of these have more or less bitter water.

but proceeded to Gansoho via Tonguzluq, whose water-carrying valley I mapped northwards. In this valley there was a little deserted house among the very dense vegetation. At Shor-bulaq I found another surprising postal messenger waiting for me. This was a Turki who had ridden from Urumchi in seven days to look for NORIN and myself. In a letter from HUMMEL I read the cheering news that both he and SVEN HEDIN were to travel to Peking via Siberia, and that I should have the pleasure of their company as far as Novo Sibirsk on my pending journey home.

The march from Shor-bulaq to Arghai-bulaq was among the most trying and exhausting I had experienced. It took fifteen hours and a quarter.

Between Arghai-bulaq and Su-bashi there was a good deal more water in the valley than there had been in the spring, and the stream consisted for the most part of slushy ice that did not bear.

I spent December 7th in Toqsun waiting for the arrival of my donkeys, that had lagged behind on these forced marches, and reinvestigated the finding place for painted pottery that we had discovered here in the spring. But as the ground was hard frozen any considerable excavation was out of the question.

After covering 90 li of the absolutely sterile gobi to the north of Toqsun I arrived at Hsiao-ts'ao-hu or Pachi-saigang. And the following day I reentered the T'ien-shan, over a number of little passes and the two bigger ones near Davan-ch'eng. On December 10th I rode on ahead by myself. There was still a stretch of 90 to 100 km left to Urumchi; but after thirteen hours' riding I managed to find my way to expedition headquarters in the dark, where I glimpsed HUMMEL through a lighted window. Besides HUMMEL there were HEDIN, HASLUND, SIU PING-CH'ANG and YUAN, as well as the new members AMBOLT and CARLSON. I had been away for nine months bar two days, and had travelled 3,120 km.

The few days I spent in Urumchi this time were devoted to packing, visits, dinners and the winding up of my caravan and servants. When I had paid the latter and tipped them the cook gave me some little embroideries that his dead wife had sewn; »SÖDER» presented me with a roast duck, while CHIN handed over two bottles of vodka »in case it should be cold on the way».

On December 17th we left Urumchi behind us, travelling northwards. We were SVEN HEDIN, HUMMEL, SIU and his boy, CHAN and myself. The journey to Novo Sibirsk has been described in History II, pp. 40—45. I reached Stockholm via Moscow, Leningrad and Helsingfors on January 9th 1929, having been away for two years barring seventeen days. The entire journey from Urumchi had taken twenty-four days.

# THE 1929—1931 EXPEDITION

*Towards Sinkiang from the west*

A new chapter in the history of the expedition was now begun. The Germans had all returned home, with the exception of HAUDE and ZIMMERMANN, and the Chinese taking part were also fewer; but as the Swedish Government had made a bigger grant for the continuation of the expedition the number of Swedes participating was increased. Our Royal Academy of Science had appointed NILS HÖRNER and GERHARD BEXELL as additional members, and together with me they were to travel to Sinkiang by the same route as I had taken home. I myself left Stockholm on April 8th.

In Berlin we stayed for some time to buy instruments and photographic equipment. Meantime, NORIN arrived on his way home to Sweden, and the result was long conferences between the three geologists. On April 20th HÖRNER, BEXELL and I left for Moscow, Novo Sibirsk and Semipalatinsk with a formidable array of baggage. We arrived in the last-mentioned town after eight days, including one rest-day in Novo Sibirsk. Thus far all had gone well, but now our troubles began, chiefly owing to our ignorance of Russian, but also in part on account of the wooden Russian bureaucracy. Such trifling matters as the fact that the hotel in Semipalatinsk could not provide more than two beds for our double room, and that the bed-clothes supplied with them comprised nothing but three sheets, one could bear with philosophy. We were in any case leaving civilization behind us, and such little details constituted a mild transition from Europe to Asia. But to get the luggage-van we had managed to procure for ourselves and our tremendous baggage hitched on to any train to Sergiopol proved beyond our puny powers. Between April 29th and May 2nd we were shunted backwards and forwards on the station sidings, that seemed to have endless possibilities as far as switches and points were concerned. And when we had actually got over the newly built railway bridge over the Irtish before it was officially opened on May 1st, we discovered that there was a railway-yard with sidings also on the other side, in Janga-semi, that offered at least as great, if not greater, possibilities of interminable but intensive shuntings and switchings from line to line, with as much

bumping and shaking and jerking as could be desired. Thanks to an Austrian railway doctor who had lived for twenty years in Russia, and who, when we bumped into him on a side track, seemed to us to have been sent direct from Heaven, we found that our van was to be coupled on to the regular train on the afternoon of the 2nd. This actually took place, and on the morning of the 4th we arrived at Sergiopol, where through the railway company we managed to hire a lorry for the 280 km journey to Bakhty on the Sinkiang frontier for a matter of 210 rubles. In this wretched little hole of a market-town (Sergiopol) I found, curiously enough, two interesting archaeological objects. At a street-corner stood the most beautiful stone figure I had seen, a so-called *baba;* and as a gate-post at the entrance to a courtyard another, though of considerably simpler design. Both had been brought there from other places.

On the third day we reached Bakhty, thanks to our good fortune in meeting Qazaqs with oxen to drag our lorry out of the mud at the majority of the many streams that cross the road.

At the dirty little Chinese frontier station we were compelled to stay overnight to await permission from the Governor in the nearby town of Chuguchaq to cross the frontier. We met here a little lady in European dress, who had herself arrived three days before. At first I took her for a Chinese; but when she began to speak perfect English with us we discovered that she was a Mongolian, who had met HEDIN and HUMMEL in Peking, and was now on her way from Peking to her tribe near Hsi-hu or Khurd-khara-usu. That she was no ordinary Mongol lass was obvious enough (her quality was apparent also in her linguistic abilities — she also spoke perfect French); and it was scarcely surprising to find that she was a Torgut of royal extraction, the Princess NIRGIDMA.

On May 8th we proceeded to Chuguchaq in *telegas*. The Governor, LI HAI-JO (whom I was to meet in very different circumstances in Turfan in 1934), asked us to wait for three days until he had received a reply from Urumchi regarding the permit for the continuation of our journey thither. That our passports had been endorsed by the Chinese Legation in Stockholm and by the Consulate-General of Sinkiang in Semipalatinsk signified nothing at all. In Sinkiang the Governor-General, CHIN SHU-JEN, was the sole authority, and he cared for nobody.

At the end of the three days a bus came driving into the courtyard of the house where we were staying. In it sat the Foreign Commissioner of the town and the Torgut princess. This we felt to be gratifying; but our gratification was short-lived. It turned out that she had come only as an interpreter, and what she had to tell us was not exactly cheering. We were to be expelled from Chuguchaq! The Governor-General had been told that our expedition was in the habit of excavating old family graves(!!), thus upsetting the provincial populations. On this account we had earned the dislike of the people, and in these circumstances the Governor could not take the responsibility of allowing us to

stay in Chuguchaq. He requested us earnestly to retire to the frontier-station. As the prospect of settling down in this isolated hole in the middle of the steppe for an indefinite period of waiting left us fairly cold, we asked if we might not return to the village Bakhty on the Russian side of the frontier, where there were post and telegraph and proper houses. This was granted. M. BOROVOI, the Russian consul, helped us with visas and advised us not to oppose the Governor's orders.

Our farewell to Chinese territory was marred by a very unpleasant incident, a detail that showed that here was drawn a real frontier, that was taken in bloody earnest. On the short stump of road between the clay houses containing the Chinese customs station lay the corpse of a young Russian with his breast full of bullet-holes. Round the body stood Chinese soldiers with a hard grin of satisfaction on their cruel poker-faces. The victim was a white-Russian immigrant, who, when trying to recross the frontier into Russia, had been discovered and captured by the Chinese, placed against the wall and shot out of hand, without any kind of trial. Our indignation at this summary way of executing justice was not lessened when we later found out that the man was the son of an old woman who had looked after AMBOLT during his sickness the previous year.

*Bakhty, a Russian frontier station*

In Bakhty we found a telegram with sad news from SVEN HEDIN awaiting us. On account of intercostal neuralgia he was to leave Peking for Boston with HUMMEL to undergo an operation. The telegram also stated that two new members of the expedition, BOHLIN and Mr CHEN, were to be expected in Bakhty in a month. And we were instructed to proceed to Urumchi and start field-work.

Time passed, and we heard nothing from Urumchi. Telegrams and letters describing our plight in the most urgent terms were sent off in all directions. And after a long period of waiting replies began to stream in from our own people, but not from any authorities.

On May 28th HASLUND arrived from Urumchi, and he was convinced that we should not get permission to cross the frontier. For his own part he was overjoyed to be on the way home to Denmark, that he had not seen for nine years. As he spoke some Russian we were able with his help to get rather better quarters in a neighbouring house, with cleaner rooms, a wooden floor and better feeding. When HASLUND had left, to continue towards civilization, the days passed slowly and tediously enough, with nothing to relieve the monotony. On June 2nd we learned through a telegram from HAUDE to SVEN HEDIN of the student MA's tragic death at the Edsen-gol station.

On June 19th the monotony of our situation was finally broken by the arrival of NORIN, BOHLIN, Mr CHEN and BOHLIN's cook YEN. It was decided that the

new arrivals should make an attempt to cross the frontier the very next day, and if they succeeded in getting through we were to follow after. They set out full of determination. And returned crestfallen. Not even the Chinese were allowed to enter their own country! The only chance of our making a start with our field-work before the end of the season was to travel round Siberia to Peking, a little detour of some 6,300 km, and thence to set out westwards through Mongolia. At least NORIN and I, however, would have to remain behind for some time to wait for the arrival of his and BOHLIN's heavy baggage. Accordingly, on the evening of June 23rd HÖRNER, BOHLIN, BEXELL and CHEN left for Sergiopol with horse-drawn carriages. The cook YEN stayed behind.

On the 28th a telegram from Professor LIU FU in our Peking committee arrived, informing us that on the 17th the Nanking Government had made another démarche to the Urumchi Governor in the matter of our permits to enter Sinkiang and resume our work there. LIU FU added that on the 24th he had requested the government to send a new and stricter instruction to Urumchi.

From AMBOLT in Urumchi I received a copy of a letter from the Governor-General that deserves to be quoted without emendation:

»The working period of your Expedition in Sinkiang is originally fixed to be one year only and it expires now. As there are many difficulties in the national defence owing to numerous tribes of inhabitants who are ignorant, radicals often use the strange points of the work of your Expedition to make rumours and exite suspicion of men's minds: such will hinder the maintenance of peace in this province. Furthermore there is no instruction received from the National Government regarding the extension of your Expedition so the Sinkiang Government cannot allow them to prolonge their working period. In fact the members of your Expedition are not necessary to come to Sinkiang. Mr. BERGMAN etc. who have recently arrived at Tahcheng (Chuguchaq) have been duly informed to return home. As regards Dr HEDIN and others will similarly not be allowed to come in. Please act according to our former arrangement and inform all of them accordingly in order to avoid unnecessary journey.»

The solicitude for the finances and the convenience of the expedition that was here shown for the first time by the Chinese was really touching. But I had certainly never been »duly informed» to go *home*.

Bakhty was originally a garrison town, and was then also called Fort Bakhty. The garrison is still kept up, but the fort has been allowed to fall into decay. All that is now left is a square wall presenting about the same appearance as the ruined »towns» in Mongolia. In the park in the centre of the village there used to be a church in the time of the Tsars. The cemetery, of course, still remains; but the church itself, with its simple wooden tower, has been moved to the frontier, where it serves as a barrack. The village lives chiefly upon cattle-breeding, and the cattle are allowed to graze collectively on the steppe. In the beginning of July the Russians set off with mowing machines and harrows for the meadows, that were a long way off in the west. There were no fields, and during the summer there was a shortage of cereals.

From Commandant RESTBERG[1] we heard on July 6th that NORIN's and BOH-

[1] He came from Riga and could speak some German. He had been stationed at Bakhty for one and a half years. In 1912 and 1913 he had visited Stockholm and the stone-quarries in Blekinge.

LIN's heavy baggage, far from being on the way to Bakhty, as we had been given to understand, was lying in Semipalatinsk.

We were thus finally able to set out on our return journey. When we were taking leave of Consul BOROVOI, who had really been very helpful during this Bakhty period, he said: »You've made a big mistake in bringing out new members of the expedition to Sinkiang. And another important question, that the Chinese are always putting to me, is whether Dr HEDIN *himself* intends to return to Sinkiang. The Chinese, for their part, are convinced that his sickness is simply a pretext for his not coming back.»

The baggage was now divided up between Urumchi and Peking. Four-wheeled, springless carriages, so-called *telegas*, were ordered, contracts were signed with five drivers and our room was paid for. We were all ready to start when we had a letter from Consul BOROVOI telling us that the Governor-General in Urumchi had granted the permit for our entry into Sinkiang . . . Just when we had given up all hope the door was suddenly opened! If only HÖRNER's and BEXELL's heavy baggage had not been lying here, and BOHLIN's somewhere on the way, we might both have taken immediate advantage of this change of front. NORIN was naturally unwilling to give up Sinkiang, where he had already begun to work, and where he planned further investigations. Quick to make up his mind, as usual, he therefore decided that I should collect all the heavy baggage by myself, take the round route to Peking, and from there lead an expedition to the interior of Mongolia and Kansu. To recall the new members to Bakhty he would not agree. However, I insisted upon waiting for SVEN HEDIN's cabled reply before I would consent to leave Bakhty and the possibility of getting into Sinkiang. It came on the 12th, giving me *carte blanche* to decide upon my field of work myself. At the same time BOHLIN wired from Peking to say that Kansu was open to us, but that the negotiations would take a long time on account of the prevailing political unrest. The best part of SVEN HEDIN's telegram was that in which he informed us that he would be coming out to Asia himself at the end of August. (He was then in Stockholm and completely restored to health). NORIN, meantime, went on to Urumchi alone.

### *Return to Peking*

On July 14th my five *telegas* were ready. Besides hand luggage I had 785 kilograms of heavy baggage and a customs official, who was to come as far as Sergiopol to seal BOHLIN's chests there. BOHLIN's cook YEN was also with me.

The treeless steppe was in loveliest flower — tall mallows, pink and white, provided a little festival of colour among the green; it was summer indeed. The

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He had also been to London and several other English cities. Before coming to Bakhty he had been stationed in the Crimea.

Russians were mowing the wild grasses in places. We rested in Russian villages or at the smelly tent-settlements of the Qazaqs; had a row with one of the drivers, a quondam blue-jacket[1] who had taken part in the mutiny in Kronstadt and who unlike all other Russians wore bell-bottomed sailors' trousers instead of knee-boots; lost a horse; got over the language difficulty with the help of YEN's pidgin English and his occasional success in ferreting out Russian-speaking Chinese; slept in the hay in my carriage to the pleasant accompaniment of the horses' munching of their oats; gloated over the endlessness of the steppe and the glow of colour in the west at sunset; had feelings of homesickness in the midst of the monotony and the loneliness, but bowled slowly towards the railway terminus in Sergiopol, where I arrived after five days.

After a wearisome search in Sovtorgflot's warehouse in Sergiopol I finally discovered NORIN's and BOHLIN's fifteen packing-cases; and here, in this swelteringly hot warehouse, I now set about unpacking the cases whose contents had to be divided. It was only after stubborn argument that the customs official from Bakhty agreed to seal them again (it was for this that he had come here the whole way!). Thanks to a happy meeting with a helpful mechanic from Nürnberg, one JOSEPH BURICH, who had been here for two years, I was able to settle my business with the drivers and the ignorant customs rat and arrange for the forwarding of NORIN's baggage to Bakhty.

On July 19th I boarded a comfortable bogie-car on the Turksib line, where marvellous to relate it was possible to open the windows — a rare facility in Russia, and arrived in Semipalatinsk the following evening. Here I was stuck until the 25th, owing to red tape in connection with my visa, a matter that was not settled until I had applied in person to the GPU.

Owing to the dispute about the Chinese Eastern Railway in Manchuria that had just then broken out between China and Russia, the normal route via Harbin-Mukden was closed. With my 900 kilograms of baggage I should have to journey via the Amur-line to Vladivostok, a detour that would enable me to avoid the critical area.

A typical episode was related about the Chinese consulate-general here. When hostilities broke out in Manchuria it was stormed. Windows were smashed and the flag was torn down. But the Russians soon made good the damage, for the consulate belonged to Sinkiang! The Chinese province of Sinkiang was thus regarded by the Russians as quite independent of China.

On July 26th I went to Novo Sibirsk, where I had to wait for the international express that would go direct to Vladivostok via the Amur-line on the 29th. It

[1] He had a shot-gun, and as his telega and horses were the best in the caravan he was evidently well-to-do. There were lots of wild turkeys on the steppe. They were hunted in the following way: the waggon was driven slowly towards them as they browsed around in the grass, the man with the gun remaining concealed behind the waggon until the heavy fowls showed signs of rising, when he would step forth and fire. The sailor shot three in one day.

was with almost voluptuous pleasure that I paced the carpeted corridor of one of the Wagons Lits. With my usual good luck I had managed to get a berth, although the train was crowded. We arrived in Vladivostok on August 5th. But the baggage, that had been checked through as express goods from Semipalatinsk, did not turn up until the 12th, and after this there was no boat leaving for Japan until the 14th. Fortunately, I was able to turn the days of waiting to good account by visiting the museum, where there were rich finds from shore dwellings from the stone age. Actually, the museum was closed for repairs; but I got permission to sit there in the daytime and make notes.

I embarked for Tsuruga on the »Amakusa maru», an old hulk that the Japanese had taken from the Russians in 1905, and arrived two days later. But I had to kick my heels in Kobe for five days while waiting for a boat to China. Finally, on August 25th, I found myself in Peking once more, while the enormous baggage was stored in the Tientsin customs house for the time being.

During their period of waiting in Peking, BOHLIN, HÖRNER and BEXELL had managed to get together most of the outfit and provisions we should need for our caravan journey; and through LARSON 60 camels had been purchased and some of our old Mongols re-employed. The camels had been bought from the ANDREWS Expedition, and from ROY CHAPMAN ANDREWS himself we were able in Peking to take over various useful items for the equipment of our own expedition. But the Chinese committee had not managed to get us passports.

### *Start for Mongolia*

In order to take our camels, that were waiting at Khadain-sume, north-west of Kalgan, to Batu-khalagh-sume (Beli-miao), from which place we planned the start of the actual expedition, BEXELL and I travelled up to Kalgan on September 4th. Immediately upon our arrival we looked up the Foreign Bureau to get passports to Mongolia; but we found that a letter had been sent by the committee in Peking to stop us! After some time, and when BOHLIN had brought pressure to bear on the committee, they sent a young Chinese from Peking to help us to get off. But the mischief was done, and his efforts proved fruitless.

Towards the end of September, however, we were summoned to the Foreign Bureau to receive a passport from General YEN HSI-SHAN — both for Mongolia and Sinkiang. But not for BEXELL and me, only for BOHLIN and CHEN . . . After a three days' wait we managed to get our names, too, painted on the precious document.

On October 1st we drove with LARSON in an old rattletrap of a car to Khadain-sume, JOEL ERIKSSON's mission station.

In those parts of the steppe that were cultivated by the Chinese to the north of Kalgan, threshing was being carried out with flails.

It was with a feeling of luxury that I sat down in my new home, a dark blue Mongol tent with white lining, and gazed out over the light green undulations of the delightful steppe landscape, that was bathed in dazzling sunshine. I gloated over the blue-violet tones around the hazy hill-tops on the horizon, and over the dry, invigorating air.

### *From Khadain-sume to Beli-miao*

The camels were better and fatter than I had dared to hope, and on October 5th the Mongols filed off with them westwards. We were to join them at the temple Chaghan-obo-sume within a few days. But first JOEL ÈRIKSSON was to drive us round to some Mongol potentates in the west. We started the same day, and spent that night in the palace of BARUN SUNIT WANG. The prince himself had followed the PANCHEN LAMA to the east; but his young son was at home.

The next day we drove, at times through squalls of snow, to the wealthy Mongol DEVA GUNG, who was a *tuslakchi* in Durbet. The place was called Shine-nor. Just to the east of this spot winds one of the outer walls, which I subsequently called »The Great Durbet Wall».

On the way to the residence of DURBET WANG we drove over cultivated ground belonging to the Belgian mission and leased to Christian Chinese. We visited a little mission station where millet and oats were being threshed.

The rather unwieldy Durbet prince gave us a friendly reception in his Chinese palace. He was browsing contentedly in a big catalogue from some American mail-order firm, and eagerly questioned ÈRIKSSON about the use to which a number of the articles depicted were put. He would buy a violin and an accordion for himself, so much was evident. Later I learned that his real passion was — water-closets.

We spent the night with another chief in Durbet, a *habenda* (a tribute carrier to the emperor) at Dakhelin-usu. He had been a member of Parliament during the short life of this body in Republican China.

The next day ERIKSSON visited several patients, giving them injections or medicine. We also saw a square enclosure with a rampart, the remains of a little fortress or village. There were many of these, both in Durbet and Chakhar. We once more spent the night with DEVA GUNG, and arrived at Chaghan-obo-sume in Barun Sunit on the 9th. And here, in the vicinity, we presently found our camels.

ÈRIKSSON drove home to his station again, and the following day BEXELL and I set off on the main road to Beli-miao. I made a route-map by pacing, and BEXELL studied the geology along the road.

In the course of the second day's march I found a little locality with flint

tools where the sward was stripped, and one of those low earthen ramparts that constitute the remains of more or less high »Chinese Walls». In the matter of volume they were never so powerfully built as The Great Wall, but some of them turned out to be of extraordinary length. At the place where I first came upon this wall (about 30 km west of Chaghan-obo-sume) it was running almost straight from east to west. The breadth was about 13 m, but the height only about half a meter. On its northern side, i. e. the outside, there was a ditch out of which the earth had been dug when the wall was built. According to ERIKSSON, this is the northernmost of Inner Mongolia's outer walls, and crosses the Urga road about 100 li to the north of Khadain-sume. In many places it is very indistinct, and in depressions even quite obliterated; but as the road follows it faithfully it is very easy to distinguish the *agger*. If one approaches and crosses it at right angles, however, it is not certain that one will notice it. The Mongols, characteristically enough, call this road Kherem jam, i. e. The Wall Road. We pitched camp, on October 11th, on the bank of the Nochegene-gol, an insignificant little stream, like all the watercourses in these tracts.

The following morning we had both hail and snow, but later in the day the weather turned out pleasantly warm, with brilliant sunshine. After covering 7.5 km we reached the point where the wall we had been following joined a bigger wall from E. S. E. — no other than the one we had seen near DEVA GUNG's place and just south of Khadain-sume at its point of intersection with the Urga road. At the point of junction we had now reached there is a round swelling resembling a large burial mound, in all probability the remains of a tower. Along the bigger wall, that I have provisionally referred to as »The Great Durbet Wall», since it was in Durbet that I saw most of it (though it has nothing to do with the Durbet district), there are similar mounds at quite regular intervals, generally 1 li. It is, moreover, for the most part double, and the northern or outer wall is considerably lower and narrower than the main *agger*. Quite near the point of junction it is intersected by a stream, and BEXELL was able to photograph it in section. The ramparts are built up of big square clay blocks 23×23 cm containing small stones. It measures about 20 m at the base and is about 2 m in height. The contours are softly rounded. »The Great Durbet Wall» is the same on either side of the point of junction, and was thus built in one connection. At some of the »towers» there was a square enclosure formed by a rampart about 75×75 m on the south side of the wall, in which there were probably quarters for the garrison and their horses. The big wall continues in the prolongation of the little one, and is in certain places quite imposing. We encamped at Bayan-buluk. In one of the »garrison rooms» adjoining the wall I found some fragments of pottery and porcelain that indicated that the place had been in use during the Sung or Yuan dynasties.

We followed the wall westwards, and presently crossed the Daga-ugue-gol, that was flowing northward. At Boltei-sume, a medium-sized, rather crude lama temple, there is another, similar stream.[1]

We pitched camp beside the wall at Aman-usu, where there was a pleasant little dam. During the night of October 13th the temperature sank to — 8°. The wall continued due west as far as the eye could see, but now the road ran to the south of it.

We passed an »enclosure» of which I have never seen the like. It was roughly square, with a side of several hundred meters; and the »rampart» surrounding it consisted of clods of earth one on top of another, with the bone of an animal in every clod. The distance between them was about 2 m. The enclosure had probably been used for some religious ceremony.

After passing the extremely beautiful and well-preserved monastery Shara-muren-sume, that is the main temple in Durbet and the finest lama temple in the Tibetan style I have seen in Mongolia, we crossed the Shara-muren. A snowstorm swept swiftly over the steppe, obliterating all landmarks, and I lost sight of the caravan. When I finally caught sight of it again it was going in quite a different direction than I had calculated. It is the easiest matter in the world to lose one's way in these sudden storms. The snow was succeeded by a couple of hours' rain, and that in turn by lashing hail. But in the afternoon the sun was shining warmly, and the sky was quite summery with its heaping cumulus clouds. The night was bitterly cold.

On October 16th we marched somewhat to the south of the road at first. The ground in these tracts is such that roads are really unnecessary — one can cover it in any direction, even in a car.

Just near a brook flanked by tall grass I came across two old mills or presses consisting of a formation of stones providing a circular groove or channel; one of them was 5 m in diameter and the other 5.5 m. In each circle lay a stone wheel or disc. This had had a wooden axle leading to a post in the centre, so that the wheel could run in the groove. According to ERIKSSON, there were similar evidences of a more northerly extension of the agricultural zone in ancient times to the east of Khadain-sume. Just such mills are used to this day in China for pressing oil, and in India for mixing mortar.

Not far from here I crossed »The Great Durbet Wall», that was still double, and provided with »towers» at regular intervals. It was running in a south-westerly direction.[2]

When we got onto the road again we traversed a region west of a water-carrying stream, that had been partly cultivated by Chinese. We encamped on

[1] On ANDREWS' route-maps — we crossed his route of 1925 just east of the temple — both these watercourses are drawn as flowing south, which is a mistake.

[2] I was not to see the continuation of this wall until my return journey eighteen months later.

the shores of a narrow little lake on the edge of the cultivated steppe after a march of 27 km.

The following day we reached Khoton-golin-sume, 7 km distant. The temple is of no great size, and built in the Tibetan style. The most interesting thing about it was its name, or rather that of the river, which signifies that there are the ruins of a town on its banks. Just west of this spot is the boundary between Durbet and Darkhan-beile. So far, the road had led over undulating steppe with dense vegetation, for the most part artemisia and in the moister places camel-grass. Thanks to the abundant rainfall that year the pasture was said to be better than usual. Before we reached our goal, the temple town of Batu-khalagh-sume or Beli-miao, on October 19th, the road ran through rocky hills. I came across another circular mill with a diameter of 5.5 m, with a splendid big wheel. The Mongols call these presses *törem* or *terem*, signifying »mill». BEXELL also found one, beside which lay some stone rollers, »treshing-machines» for grain.

Beli-miao was the most easterly point I had visited in Mongolia during the expedition in 1927. It was now the point of departure for the new expedition that was to penetrate the Gobi to the west. HAUDE has a beautiful panorama of the surroundings of the temple in Vol. IX: 1, Pl. 3 in this series, showing the hilly nature of the country.

While we were waiting for BOHLIN, HÖRNER and CHEN, who arrived by car from Kuei-hua on October 23rd, armed to the teeth with all sorts of fire-arms but otherwise dressed in a very civilized fashion, I hunted up several stone age settlements in the valley of the little stream Aibaghin-gol, and also found faint traces of another ancient wall of simpler construction than »The Great Durbet Wall». It ran right underneath the temple town. Later on I was able to map its continuation westwards. The country round about Beli-miao was a veritable mine of old graves, for the most part flat stone pavings, but also monoliths (even a baba-stone) and cairns (Cf. Fig. 1 a and b).

We were now nearing the height of the caravan season, and long rows of camels moved westwards with a dull clanking of bells almost daily. Motor traffic with Kalgan is maintained, though rather irregularly, along the road on which we had come.

Even in Kuei-hua, whither he had gone to help HÖRNER with the baggage, LARSON had opined that our sixty camels would not suffice. Accordingly, we now sent two Mongols to fetch a further twenty-five from ANDREWS' herd at Khadain-sume.

On October 25th we woke to find a perfect winter landscape. Inside the tent-flap there was quite a respectable snow-drift, and it was a pretty chilly business huddling into one's clothes at 7 a. m. to make the meteorological observation for the morning.

By the last day of the month the twenty-five new camels had already arrived; and as soon as we had all the baggage — most of which we had not clapped eyes on since it was packed in Sweden in April — divided up into suitable loads we might set off. But on November 2nd came a wonderful surprise, that upset our plans completely, but in the pleasantest way imaginable. A car drove into camp with none other than SVEN HEDIN himself, accompanied by HUMMEL. Since I had taken leave of them ten months before they had travelled round the world, and managed, amongst other things, to raise a mint of money for the purchase of lama temples and ethnographical collections. The next day there were two arrivals: LARSON and the new member of the expedition, the ethnographer GÖSTA MONTELL. And finally, on the evening of November 8th our company was further swelled by HASLUND, JOEL ERIKSSON and our new caravan leader, the Dane BENT FRIIS-JOHANSEN. But on November 11th we parted again. BOHLIN, BEXELL, HÖRNER, JOHANSEN, CHEN and I set out westwards with five Chinese and nine Mongols, two horses and 85 camels. The others, meantime, drove off in their cars along the same route as that on which BEXELL and I had come. The happy days on the bank of the Aibaghin-gol were past.

### *The two last months of 1929*

On the second day's march we struck off to the north of the main caravan route and pushed on through hilly country, past the little temple Jimistei-sume, to the village Deltei or Deli-usu. The following day we advanced as far as the hill Bayan-bogdo, that marks the boundary between Darkhan-beile and Mu-ming-ghan. Our camp[1] lay only some 100 m farther north than NORIN's and my camp no. 9 from 1927. We were thus due north of the memorable permanent camp of the summer of 1927 on the bank of the Khujirtu-gol.

We continued our march over the plain, past the insignificant temples Shara-chölo-sume and Daghain-sume, to Amtsar (The Edge), where we pitched camp 6 quite near HEDIN's camp X. About 1 km away from the graves that HUANG had begun to excavate (see Part I, p. 109) I found other graves and a little baba-stone with a very crudely hewn face and with the right hand holding a simple cup before the breast. Just near the camp we crossed another ancient, indistinct wall, and I determined to follow it up to the north-west for some days. As we knew that ZIMMERMANN and SÖDERBOM were on their way back from their long service at the meteorological station at the Edsen-gol, and that we might expect to meet them in a few days, I did not prolong this little journey of investigation, as I wished very much to meet them. As the place for our meeting we decided upon the east end of the Yang-chang-tze-ku. On the 19th BEXELL and I started off on this first side-tour while the

[1] See Plate I: 2 in Vol. XI: 2 of this series.

others were to continue on the main road followed by SVEN HEDIN and the big caravan in 1927.

The wall that I now followed and mapped was interrupted for short stretches. In places it was double, or it had a small collection of stones on top; but to start with there were no watch-tower mounds. We pitched camp at Ulan-obo, quite near NORIN's and my camp 13. Beyond the camp the wall was in parts well preserved: about 1 m in height and 2—3 m broad. One could walk along on top of it just as on the Tartar Wall around Peking. In certain places there were inside the wall, i. e. on the south side, detached square enclosures with a side of 14—15 m, where there had evidently been quarters for a garrison. Curiously enough this old wall did not follow the ridges and was not at all adapted to the natural contours of the country; it crept up valleys and ravines to the flat divides. It is thus not surprising to find it eroded away by streams in many places; and this destruction is of course continuing. In the vicinity of a big obo to the west of Ulan-obo the wall was better preserved than anywhere else: for a stretch of several hundred meters it was built of flat quartzite blocks. The height was here something over one meter.

When we had crossed the upper reaches of the Khonin-chaghan-chölo-gol and reached about the highest part of the flat plateau we had climbed up to, we turned off to the south and left the wall behind, as it continued W. N. W. We camped beside a Mongol yurt, Khub or Khubu. About 10 li to the east there was said to be a temple — Mandelin-sume; and just to the east of the camp, beside the Khonin-chaghan-chölo-gol, ran the boundary between Mumingghan and Dzun-gung.

From here we followed a valley running south-west and south and opening into the Chugungtai-gol, which is to say Yang-chang-tze-ku. Out on a plain among the rocky hills we saw the fairly well preserved walls of a village or a fortress. But they made such a modern impression that I did not go up to them. As in all camping-places in these treeless tracts, where even bushes are few and far between, fuel there was none, and in the evening we had to make a fire with grass. The nights were beginning to get unpleasantly cold — between minus 25° and 30° C. — for we were at quite a high altitude.

In the river valley that we followed down to the Chugungtai-gol there were a few Chinese colonists in the most miserable huts I ever saw. And their little patches of tilled ground were also diminutive enough. That the valley had been inhabited in prehistoric times was evidenced by the occurrence of stone graves on top of the low terraces in the bends of the valley. The brook is first called the Khabchilin-gol and lower down the Morongin-gol.

On November 22nd we once more joined the main caravan. ZIMMERMANN had turned up one day earlier than we had expected. SÖDERBOM was unfortunately not with him. He had been lured up to Suchow by an antediluvian and long

since cancelled telegram, where he thought SVEN HEDIN would be arriving by car. (It was not until four years later that HEDIN did get there, and then it was from the opposite direction and together with SÖDERBOM).

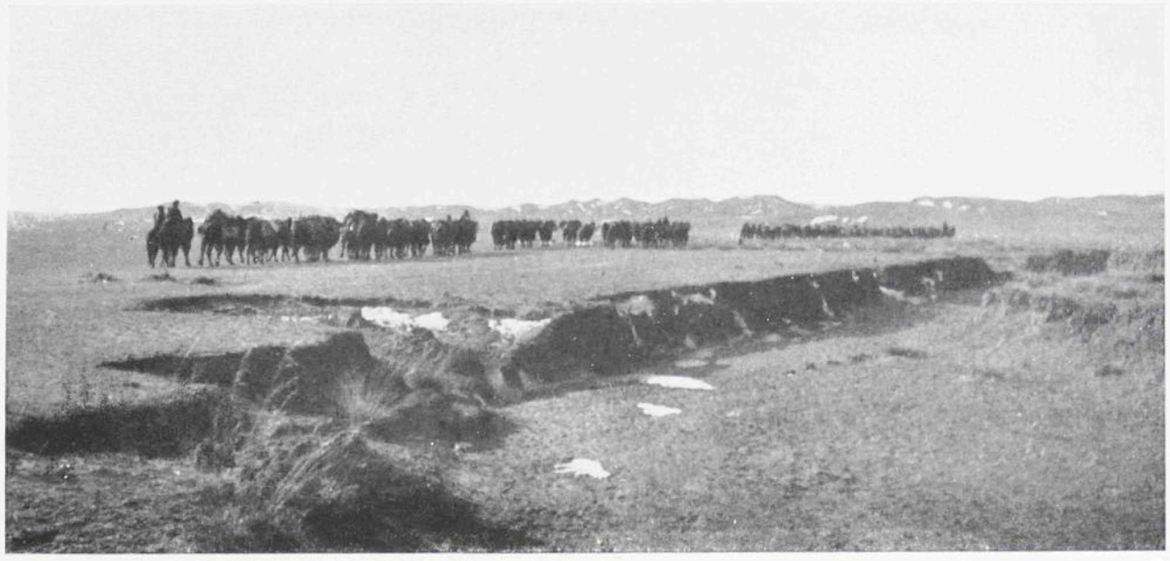
After leaving letters with ZIMMERMANN, perhaps the last chance we should have of »posting» mail for Heaven knew how long, we resumed our westward march. Where the Morongin-gol meets the Chugungtai-gol I began mapping again, following the winding river a little south of the road. Coming out on the wide plain we turned our faces towards Abdar, an easily recognizable basalt rock where we intended to pitch camp. But darkness fell and we lost sight of the rock. The apparently flat plain was in fact nothing but a series of softly rounded undulations. After some time I fell in with BOHLIN and BEXELL, who were wandering about without a notion of the whereabouts of the caravan. It was evident that we had gone much too far south. After a long search we caught sight of a distant glimmer from a lantern, and finally reached camp. The camels had been restless during the march in the darkness, and had flung off their loads.

As I was interested in finding out whether the river, that I had mapped from its source, ran down to the Huang-ho plain, and whether before this it joined the Hailutain-gol, I suggested that one of the others should detach himself from the party for a southern detour. BOHLIN was keen on undertaking this mapping, and HÖRNER was anxious to study the sediments in this very remarkably flat plain. BEXELL, too, wished to go along. We decided to meet at Khongkhor-obo, about 60 km farther west; and there, during the ten days or so that their journey would take, I was to work on stone age sites that I knew to be in the vicinity. Accordingly, on November 25th we set off in different directions. I took the same route as in 1927, and reached Khongkhor-obo on the 29th.

In the sand, among small thorny bushes on a slope facing south just east of the obo-hill, there were, as I knew from 1927, plenty of neolithic tools. I now found that practically the entire slope had been settled in prehistoric time. There were many different kinds of tools, and they were all of high quality. Potsherds, on the other hand, as in the majority of the sites in Mongolia, were rather scarce. But I found some, nonetheless, with traces of painting. Diminutive flint scrapers were extremely common. The frozen soil put all serious excavation out of the question; and the stiffish wind, that blew the dust into one's eyes, rendered the trial excavations in the ravine walls extremely difficult.

Somewhat higher than the neolithic sites there were quite a few stone graves of various kinds; and right across the main site stretched a long row of erected stones. It was over 500 m in length, and was probably also a sort of burial monument. Parts of it are to be seen on Pl. 2 a. On the other side of the brook and somewhat nearer to the obo-hill there were also several long rows, and in other places in the vicinity shorter ones, as it were various types of grave. This region had obviously been a much sought-after place of abode for long periods; and

a. The last of a camel in the sands of the Gobi



b. Our stately caravan marching off from Tabun-tologoi

c. The camels ready for loading

a. In the Lang-shan

b. New Year's camp 1930 in the Lang-shan

that it is still a sacred spot is proved by the mighty obo on the flat crest of the distinct, black hill. Curiously enough there were also stone age remains up there — some potsherds, flint tools and an exceedingly elegant arrow-head of transparent chalcedony.

A number of roads of various width intersected or ran past near here. Every day I heard or saw long caravans filing both east and west.

My digger from 1927—28, CHIN, was still in Sinkiang awaiting my arrival. Meantime, I had as a substitute a Christian ex-lieutenant from FENG YÜ-HSIANG's army, a novice as far as archaeology was concerned. But he was beginning to get the hang of it, and now and then discover new localities. JOHANSEN was also busily helping with the collection of chipped flints. The geologists, too, had found a whole series of flint sites on their southward trip from which they brought finds.

On December 8th BOHLIN and I made a detour to the north of the caravan route, while the others went down to the Pao-t'ou road about 10 li to the south, following it as far as Tabun-tologoi.

BOHLIN and I stopped first at a group of low basalt hills where there were small lakes. Thanks to the wealth of usable stones there were numerous relics of prehistoric settlement here too; but the stone tools were not of the same fine quality as those at Khongkhor-obo. Over the wide scrub-steppe, where I saw both species of antelope at times even browsing together in the same herd, we journeyed for two days to reach the meeting-place at Tabun-tologoi. It was on this sandy steppe that for the first time I saw a species of grouse resembling sand-grouse, only blue-grey.

On December 12th we were caught up by TSERAT (or NA, as he was generally called by the other Mongols) with a packet of mail — a happy surprise! He had originally accompanied MÜHLENWEG, who had been sent out to look for ZIMMERMANN(!). They met, however, already in Kuei-hua, upon which TSERAT had continued alone to our party. He had ridden from Beli-miao in six days. A few days later he returned, taking our post.

On the 14th we pushed on to a Khara-tologoi (there are hundreds of small hills with this place-name) over a pass where the altimeter registered 1,708 m. Plates 11 b and 13 b show the landscape between Tabun-tologoi and this pass. The following morning the ground was quite white, and whirling snow was borne on a biting north wind. On the morning of December 16th the temperature sank below —30°. The north wind whistled past at what we judged to be velocity 5. The sunrise offered the spectacle of brilliant mock suns, a phenomenon that lasted the whole day, so that there must have been terrific storms also in the highest regions of the atmosphere. The camels were restless and troublesome when they were being loaded; and the one that was carrying the money chests flung them off so violently that one of them broke open, and thousands of shining dollars

were scattered in a silver rain over the ground. It was a pretty chilly job picking the coins out of the snow.

During the march we were suddenly caught in a blizzard, and BOHLIN, HÖRNER and I lost touch with the caravan. It was not long before we began to get white patches on our faces. HÖRNER was in the sorriest plight, for he had no sheepskin and was wearing an ordinary cap. We other two had at least the short summer sheepskins and winter caps. His left ear became quite white, and he rubbed it with snow until the blood flowed. Presently his hands began to stiffen too. Of the caravan or its tracks there was nothing to be seen. Visibility was no more than 100 meters, and the wind whistled round our freezing bodies. The worst of it was that the road bifurcated during this march. We were supposed to strike off to the south to get onto The Winding Road, that is at first only a winding path. In the whirling snow small bushes were confusing, for at a little distance they looked like camels, riders or yurts. I began to fear that we should be forced to wander about in this mad weather the whole night. Dusk was already descending when it suddenly seemed as if the sky opened, and the air cleared a little. Just ahead I saw a rock that I recognized. We were saved.

Later, when we had joined the caravan, we found that most of the others were also frost-bitten, though none of them so seriously as HÖRNER. In the sheltered defile at Murguchik we put up only one of the big tents. No fuel to be got for love or money, though there were here both a Chinese *mai-mai* and two camping caravans. Finally, however, a friendly lama pilgrim gave us half a sack of *argal*. When the six of us crept to bed in the tent the temperature was —30°. I kept on waking up with the cold throughout the night, to find ice on the pillow and around the little opening in the covering sheepskins through which one breathed.

In the morning all the instruments refused to function: altimeters, watches, cameras, even our electric torches. Inside the merchant's yurt BOHLIN saw to the others' frost-bites. HÖRNER's right hand was the most serious case, with three fingers quite stiff and numb. CHEN's hands were also badly frost-bitten, and WANG's face and those of the other two were not exactly pretty, swollen and blackened as they were.

At Beli-miao one of our camels had run a nail into his foot. As it had become swollen and tender it was operated upon by BEXELL, and a surprising amount of pus came out. The beast had come thus far with an improvised felt shoe. Now we decided to leave it behind with the Chinese for the time being. We set off in dazzling sunshine, marching through the snows of Lao-hu-k'ou-tze and Serebon to Dal-ulan-obo, where we spent a cold but festive Christmas just to the north of the caravan route. From a nearby Mongol camp we were happily able to buy fine dry *argal*, while from Chinese merchants we actually managed

to purchase half a pig. We had reason to exult over this latter piece of good fortune, as pork is otherwise a rare delicacy in Mongolia.

With noble renunciation of the Christmas festivities, JOHANSEN rode back to Murguchik to fetch the sick camel, that had by this time recovered. Meantime, we planned a new division of the caravan, with two parties on either wing, one to the north with BOHLIN and BEXELL, and one to the south with HÖRNER and myself. CHEN and JOHANSEN were to move forward a little way on the caravan road with the main part of the caravan. We had heard that a road led from the highway down to the Huang-ho plain through the Lang-shan chain. We decided to meet three weeks later at Shande-miao.

### *A tour through the Lang-shan*

HÖRNER and I started out on December 30th. I mapped the route. HÖRNER was still feeling the effects of his frost-bites, and had both hands bandaged, in mittens, and covered over all with bulky felt. Our course was at first towards a hill, Ulan-obo, that loomed graciously in the south, and through a line of hills. On the last day of the year we went over a level plateau that formed a watershed and was much cut up on the south side. The road led down a stony slope into a deep valley with sheer walls of rock, and the whole landscape was transformed as if by magic. In the mountains there were argali, chickores and an air of savage romance. Camp 21 B was pitched near the ice-filled bed of the Oljytin-gol (Ulchytin?) in country reminding one of that around Qum-davan in the Astin-tagh. (See Pl. 12). On a far-off peak there was a watch-tower which may belong to the line of fortification that BEXELL and BOHLIN found farther to the east in the shape of a stone wall, and of which I found traces also in the western part of the Lang-shan (cf. p. 107).

On New Year's Day (1930) we continued our southward march over the ice of the Oljytin-gol, passing the little abandoned temple Bilcher-sume. We encamped on the yonder side of an opening in the mountains, near a couple of yurts, Ulan-ghoshun, squeezed together in a narrow ravine. Here in the vicinity I saw two groups of quite big stone graves. Between this village and the abandoned temple ran the boundary between Dunda-gung and Barun-gung. But we should be crossing over into the Dunda-gung district again before leaving the Lang-shan definitely behind. Barun-gung (the Western Duke) lies entirely to the south of Dunda-gung (the Middle Duke), and is considerably smaller than the latter.

On January 2nd we found ourselves quite near the southern foot of the mountains. To the east of the valley mouth called Dzun-ugein-ama a massive rock formation, Hoyar-bogdo, rises in the southern foot of the Lang-shan. This formation is given on the Russian 40-verst map. Around the valley the walls

of the mountains are more rugged than in the range itself, and they are bordered in places by magnificent terraces. Below Hoyar-bogdo the road divided into two branches of equal length. We chose the western one and followed the river. Near the spot where we camped for the night I found fifteen stone graves all together. One of them had taller edge-stones than the usual type of grave; and on the tallest of the stones there were carvings: two quadrupeds, a tree resembling a fir and a very stylized *suburga*. The latter was thus a lamaistic figure; it may probably have been added to an older carving. On another grave farther down the river a *mani*-stone with two rows of Sanskrit and seven rows of Tibetan text had been erected. In the same burial ground, comprising 15—20 graves, there was a little obo with two stone tablets bearing Tibetan letters. There were also a row of monoliths.

Just inside the mouth of the valley the Middle Duke had one of his numerous military posts in a house. Emerging from the mountains, we saw the Huang-ho plain stretching away to the horizon, and in the distance one glimpsed small groves and sparsely scattered Chinese houses, from whose low chimneys slender columns of smoke rose vertically in the cold air. The river-water was led through a reservoir into a canal running along the foot of the mountains to the east. We saw the same thing at several of the rivers farther west in the foothills of the Lang-shan.

On January 4th we followed the foothills westward, pitching camp near the beautiful lama temple Chantuin-sume. It is built in the Tibetan style, though with certain Chinese features. On the way here HÖRNER was lucky to escape being shot by Mongol soldiers, who fired 7—8 bullets after him. As we found out later, these fellows were from one of Barun-gung's border posts, and were actually outside their district. The boundary here runs between Dunda-gung and Dalat, and the quarters of Barun-gung's soldiers lay beyond Hoyar-bogdo.

In a yurt that I visited lived a silversmith with his entire workshop. His wife was sewing boots. The Dalat women do not wear so many silver ornaments as do those in the north and east. They have only a pair of handsome earrings set with stones or coral and a little silver ornament on the roll of hair at the back of the neck. The hair is gathered on either side of the face into embroidered sheaths of fabric.

Our nice dog Hami (a son of HEDIN's old expedition mascot Hami) had disappeared in connection with the shooting at HÖRNER. The silversmith tried to find out his whereabouts by shaking three cash in his hand several times and then interpreting the result. The verdict was that Hami was in the neighbourhood. But we never saw the beautiful dog again.

The winter had been severe enough for some considerable time; but now that we had descended to lower levels it increased in severity, and on January 6th we registered the lowest minimum for the expedition: —40.7° C. (—41.26° F.)

The ground was covered with snow during the whole of this trip. The cold interfered, of course, with our work; and HÖRNER must have suffered terribly with his frost-bitten fingers. We were told that the winter was abnormally cold, and the natives were not accustomed to the amount of snow we had that year.

After the morning with the record-low temperature we visited Chantuin-sume, where the lamas allowed us to take photographs, and even to enter the very clean and proper halls of the temple without protest. The buildings were well preserved; and the whole complex was beautifully situated between the mountain terraces and the wide plain to the south. In the temple courtyard there was a round, thin stone with a diameter of about half a meter. A lama lad knocked with a piece of iron on the stone, that gave forth a melodious sound. Repeated knockings had left cup-shaped depressions around the upper edge. Before the temple was a little grove of ancient trees around a spring.

We left the main highway along the foot of the mountains and took a road leading south. It crossed one of the Huang-ho's old branches and ran between cultivated fields, frozen hard, to the wall-encircled village Man-hui and its Belgian mission station, where we were given a friendly reception by Père CAPELLE and Père MICHIELS. Finding ourselves quartered in a warm room at last we ventured, for the first time since Christmas Eve, to wash ourselves.

This part of the Ordos between the Huang-ho and the Lang-shan has been brought under cultivation almost entirely by the Chinese during the last fifty years, though Mongols still live here and lama temples lie at frequent intervals along the foot of the mountains. The tract is a notorious bandit resort. Agriculture is dependent upon irrigation water from the Huang-ho, from which a number of canals have been dug, and from the little streams breaking through the Lang-shan. The village Man-hui was said to have 5,000 inhabitants (though there is scarcely room for all of these within the walls), of which 3,000 were supposed to be Christian.

After a rest-day in the lap of civilization we resumed our westward march on January 8th. Our camels, accustomed as they were to the thorny bushes of the steppe and the desert, turned up their noses at the hay we had bought for them, and wired in to a pile of sticks intended for fuel. An eloquent detail!

In the high grass of the plain there were plenty of pheasants. They were not a bit shy, and I managed to shoot a couple with my pistol, which shows that I was able to get very close. We recrossed the old branch of the Huang-ho, whose bed had been brought under cultivation, and reached the main highway again. This is one of the chief arteries for the traffic between Liangchow and Pao-t'ou — Kuei-hua. We encamped just in front of Altain-ama on the alluvial cone. We might have followed the Altain-gol upstream to reach Shande-miao, where we were to meet the others; but as the bed of the valley was filled with ice it was not so easy to negotiate with camels.

In Altain-ama itself HÖRNER made a discovery on one of his geological excursions among the foothills. This was a rock-carving consisting of distinct and deeply graven geometric figures on some flat surfaces on the west side of the narrow mouth of the river. The main carving was over 4 m in length and 1.5 m high, and contained rings with various numbers of cup-shaped depressions as well as more complicated figures. There were also groups of cup-shaped hollows and a horse with rider. Beside the main carving there was another rider; both were carved with thinner and shallower lines than most of the figures. Separate and apart from the main carving there were also the impressions of a hand and a foot, as well as some rings. (See picture in »Ymer» 1935 p. 15).

A decent Mongol who lived in the vicinity told us that there was a similar carving 90 li up the river at Bichiktei (i. e. The Place with Writing). Just near here there was also another carving, consisting of a couple of single rings. This find of petroglyphs in the northern borders of the Ordos is unique to date. It was a pity that the ground was covered with snow, for otherwise I should in all probability have found a number of stone age relics; there were many spots round about here that simply invited closer investigation. I also caught sight of stone graves on top of the terraces.

On January 12th we went from Chere-ulan-obo to Buturung-bulung, and I saw 10—20 ancient graves on the lower terrace to the east of a river-mouth. On the plain, *shara-burgas* grew in plenty; they were collected in carts by the Chinese. This thorny scrub burns very well, though it looks green. Drift sand collects around these bushes. In another river-mouth where I climbed up on the 50 m high terrace — probably the old terrace of the Huang-ho — there were two rows of stones and some isolated graves.

In spite of his frost-bitten hands, HÖRNER pursued his field-work with great energy as long as the short daylight lasted. Nearly every evening he would come back to camp many hours after darkness had fallen, and on more than one occasion he went astray. One day he had a very unpleasant experience with some arrogant Mongol soldiers, who shot at him from very close quarters, even after he had put up his hands. They took away from him all his instruments, camera and pistol. This complicated situation was not quite cleared up even when the caravan arrived and our Mongols talked sense with the soldiers and read out HÖRNER's passport for them. Finally, and on his own initiative, our splendid cook BUYIN JIRGAL went with them to their chief. He did not return until the following day; but then he had with him HÖRNER's pistol and apologies from the chief.

During the march westward from Buturung-bulung we went through loose sand, and in places even real dunes. Snow-covered drift sand is not the best of going when one has to keep an even pace for the sake of the route-mapping. I was

simply dripping with sweat, though the temperature was so low that HÖRNER's nose was quite white when we pitched camp.

Our last march along the southern foot of the Lang-shan took us out on sand-free ground again and past the abandoned little temple Borein-sume, built in the Tibetan style. Somewhat higher up, on the slope of the mountain, there were some temple buildings that had already fallen into decay. Not far from here a customs station had been established in some Chinese houses (the boundary between Sui-yüan and Ning-hsia is quite near); but we got past without needing to pay any dues.

Just past the customs we turned up into a river valley running north, where we pitched camp. The name of the river, Khargantai-gol, indicates that the bush *khargan* (*kharagan* or *kharghana*) grows in the neighbourhood. In Latin this Mongol name has been rendered Caragana.

We had been told that there was a military post in the mouth of the river, but we found to our relief that it had been moved. On the terrace just to the west of the river-mouth I found the ruins of an old fort, 54×60 m, and with stone walls 5—6 m in height. Far away in the west there seemed to be another ruin on the terrace, as well as some queer arrangement of stones of considerable dimensions.

The next day, January 15th, we pushed on up the straight, narrow valley. The bed was full of ice from the river; the sides were steep and high. In one place there was a little stone wall between the eastern side of the valley and the river-bed; and a heap of stones *might* be the remains of a little watch-tower. We came upon one of Dunda-gung's military posts, but the soldiers were unexpectedly decent. The river they called simply the Ustei-gol (The Water-Carrying River). The mountain walls here are on all sides of great height and practically sheer. Pl. 23 in Part I was probably taken just here. Immediately to the north there was on the east side of the river a narrow terrace with the remains of two walls, probably relics of an old fort. At an eastward bend in the river the road turned off to continue up a sand-filled valley, where we pitched camp below Ėren-davan.

The following day we emerged from the Lang-shan on its northern side, which did not look very impressive as compared with the south front. On the morning of January 17th the temperature was once more below —30°, and all the instruments refused to function. One could see at a great distance the gigantic *suburga* at Shande-miao.

The watershed is not constituted by the Lang-shan itself; the rivers have eaten their way through the entire chain, and the divide lies to the north thereof, and is very flat. Coming down on the other side, we soon found ourselves in the river-bed running past the merchant's yurts to the east of Shande-miao, where NORIN and I had our camp 36 in 1927. The pasturage round about was

wretched, so we moved camp a matter of 10—15 li to the south of the temple-town, where there were plenty of bushes. We shovelled up snow around the tents by way of shelter.

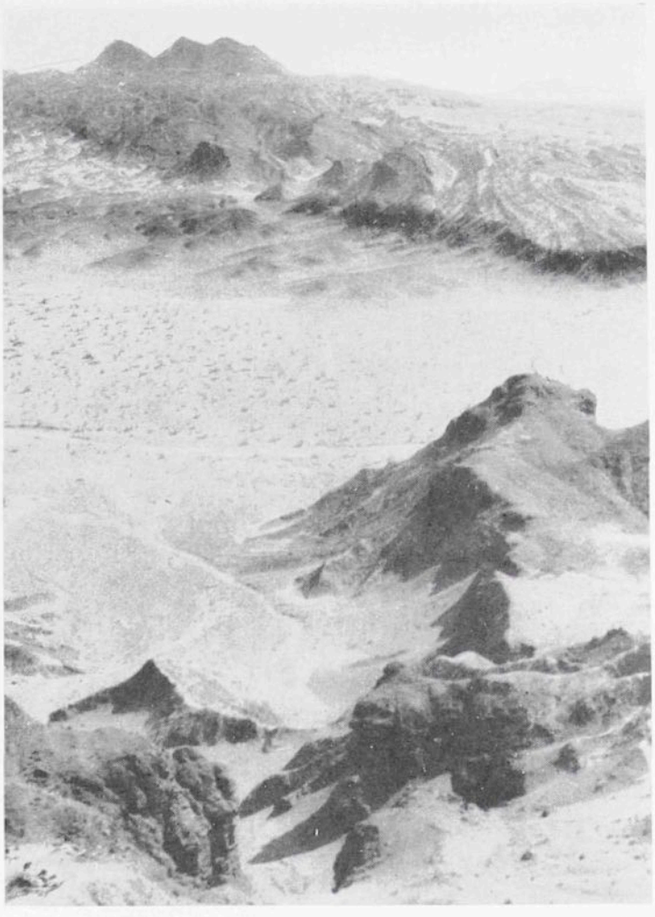
That very same day, however, BANCHE arrived with a letter from JOHANSEN, telling me that BOHLIN and BEXELL had found lots of fossils, and that he himself had come across quantities of chipped stones. From the sample collection he had sent along it appeared that they were different from those I had found earlier. Some of them, indeed, were chipped in such a primitive way that they seemed to be palaeolithic. I decided to return over the 70 km separating me from Chendamen-khara-tologoi, where JOHANSEN and CHEN were encamped. I hoped I might thus find a rich field of work for myself; the palaeontologists would be able to continue with their excavations; and HÖRNER would be able to return to Eren-davan, where he had discovered quaternary remains that invited closer study. But as he could not manage without an interpreter it was decided that Mr CHEN should join him as soon as I had arrived at Chendamen-khara-tologoi.

On January 21st HÖRNER and I separated, he returning to Eren-davan and I taking the main caravan road eastwards. I took neither tent nor provisions with me, for I intended to spend the night with a Chinese merchant in a yurt by the roadside. The road was so much uphill, however, and we had started out so late, that we did not reach the yurt that evening. It was night when we came to a Chinese caravan from Suchow that had already pitched camp. With a little persuasion we managed to get sleeping room in their, as it was, decidedly over-crowded tent. I myself slept between an opium-smoking caravan leader and a yellow bitch with four black puppies. MATE LAMA, too, slept quite close to me, like another watch-dog.

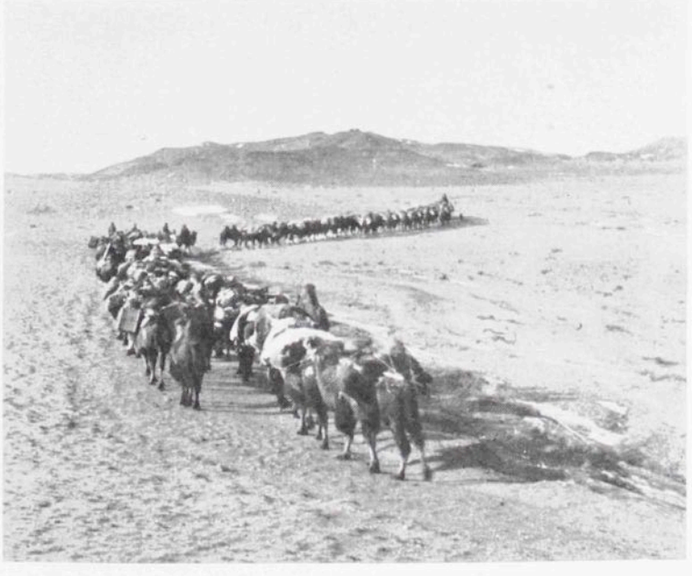
### *The region of Tebchi*

The next day we reached the basin around Chendamen-khara-tologoi, where the ground was free of snow. Here I found the camp of the main caravan, with the Swedish flag flying, although the camp contained only a Dane, a Chinese and some Mongols.

JOHANSEN's biggest finding-place was situated near the basalt hill Ulan-tologoi, 5 li to the south of the camp. And actually: the ground was here literally strewn with flint-like stones of which a high percentage seemed to have been chipped, though very crudely, and not at all in the style that I had previously found. Cores and narrow flakes, round scratchers, arrow-heads, axes and ceramics were absent. What one did find, however, were a sort of crude scraper, coup-de-point-like tools and here and there clumsy flakes. The material was to tell the truth not well-adapted for making tools — it consisted in part of silicified



a. The »Four-peaker» at Ukh-tokhoi, from the west



b. The caravan of the Gobi-group marching westwards among the barren hills of the desert

c. Bimba, one of our finest camelmen, honest, faithful, and proud to be a Mongol

a. Bexell in a sandy glen at Ukh-tokhoi

b. Wool-caravan passing the basalt-capped hills at Ukh-tokhoi

wood. Perhaps these were only discarded unsuccessful attempts. Ultimately I had to give up my hope of ascribing these flints to the palaeolithic.

BOHLIN arrived from his field of work at Ulan-tsonch north-east of Chendamen-khara-tologoi, where he and BEXELL had excavated six chestfuls of fossils. He had come to discuss the apportioning of tasks and fields of work for the future. He returned at the same time as CHEN left camp to join HÖRNER. We agreed, meantime, to meet HÖRNER and CHEN at Tukhumin-sume south-west of Shande-miao on February 12th.

When BEXELL also turned up at Chendamen-khara-tologoi we moved to Tebchi, not very far away; and here we remained for long on account of the rich palaeontological localities (see BOHLIN's and BEXELL's reports). Meanwhile, I carried on with the collection of the baffling chipped flints, made fair copies of my maps, and hunted. Both species of antelope were fairly common in these tracts. Past our camp at Tebchi ran a north-southerly caravan road of which I had previously heard nothing. No fewer than five Mongol caravans from Outer Mongolia passed by, on their way from the agricultural region in the northern Ordos where they had bought flour. Some of them had come all the way from the Urga region, and had thus 800 km to go to fetch their flour. Through the Lang-shan the road followed the valley of the Barun-ugein-gol, that lay due south from our camp. Our Mongol BANCHE, whom we sent with letters to the mission station Man-hui that HÖRNER and I had visited, also took this road; but as the valley was quite filled with ice he was obliged to climb out and cross a little pass leading into the next parallel valley to the west. He emerged from the Lang-shan through Darkhein-ama, spending a night in Darkhein-sume (perhaps identical with Dunchor-sume?).

Just before we left Tebchi I heard from a Mongol that there was still another rock-carving in the Lang-shan. This was supposed to be about 5 li from the north into the mountains in the valley of the Barun-ugein-gol, and to consist of a number of signs. My Mongol informant had seen no animal figures there. The place was called simply Bichiktei-chölo (The Stone with Writing). This would be the third petroglyph in the Lang-shan itself. In addition to this, BEXELL had discovered the remains of such a carving at Ulan-tsonch, consisting of some *tamgha*-signs. And I shall refer in the following to a further specimen in the northernmost spur of the Lang-shan.

In order to avoid taking the heavy fossil chests farther into the interior, we arranged that JOHANSEN should go to Beli-miao with eight camel-loads of fossils and stones. He left on this mission on February 15th, the same day that we set out westwards. In the letters we had sent via Man-hui we had asked headquarters in Peking to have the collections fetched at Beli-miao and at the same time to send us a number of supplementary items for our equipment.

*Rejoining Hörner*

We were now on our way to Shande-miao along the same road I had followed. In the valley of the Tsaghan-gol in the northern offset of the Lang-shan, the Boryp Hills, I found a small carving in the solid rock, consisting of a number of clumsily engraved animal figures, most of them long-horned ibex. Both technically and stylistically the figures remind one of those from the youngest stage of the big carving near Shindi in the Quruq-tagh. They are not necessarily prehistoric, though it is clear from the surface that they are by no means modern. In the interior of these mountains there are quite a number of ancient graves.

On February 17th we reached Shande-miao in the evening, and pitched camp in the snow. This was actually deeper than on the occasion of my last visit a month earlier. In the morning we had a look at the temple town, without, however, going in among the many buildings. Taking the southward road in among the dunes, which were also covered with snow, we soon left Shande-miao behind. The weather was warm and sunny, so we were able to ride without being chilled to the bone. By the same route as that taken by the main caravan in 1927, though the strech was new to me, we reached HÖRNER's and CHEN's camp near Tukhumin-sume on February 21st, nine days late. The ground here was quite bare. On the way we had passed a customs station at Ghatuchi (our camp 29), that was said to have been established since 1927 to exact dues from the traffic between the provinces of Sui-yüan and Ningh-sia. After showing a number of our numerous passports we were left in peace by the prying officials. On a hill-top just near here there was a big obo. Farther south there was one of those curious hybrids — half house, half yurt — such as I had seen at Dobolor in 1927. I saw none of this type outside Alakshan.

We spent a couple of rest-days in HÖRNER's camp soling shoes (those of us who mastered the art) and the clipping of one another's shaggy locks, that had been innocent of shears for a matter of four months; and the servants were instructed to prepare the first big spring wash. This by way of a little demonstration that we had happily overcome the hard Mongolian winter.

On February 25th we resumed our westward journey, following the same route as that taken by SVEN HEDIN to Ukh-tokhoi through the sterile gravel plains and rocky hills of the Alakshan Desert. During this part of the journey I did not find so many flint sites until we began to approach the basalt region to the east of Khara-dzagh. Westward of the medium-sized temple Tukhumin-sume, where there was also said to be a customs station, and as far as the well Elistei-khuduk there were at intervals along the road little sandstone slabs with Tibetan inscriptions; and in the actual sandstone region itself they were frequent. Still farther west we met saxuales for the first time — the easternmost representatives

of this excellent bush (or, to be correct, tree) along this route. Some marches farther on the first tamarisks were said to begin, though we did not see any until we reached Ukh-tokhoi.

*Ukh-tokhoi*

We arrived at the Ukh-tokhoi well in the vicinity of the huge landmark Soyan-khairkhan on March 7th, in fine spring weather growing daily warmer. During the last marches I had made a route map, going somewhat south of the road in places. Here a new field of work awaited us, and the caravan was once more divided. BOHLIN, BEXELL and I stayed behind with a few servants, while HÖRNER and CHEN continued westward to Olon-toroi, some days' march distant, where HÖRNER was to have an opportunity of studying dune formations. They took all the baggage and most of the camels with them.

I had expected that the finds of chipped flints would be rich enough in this tract, where the supply of raw material was so good; but I had not believed that one would need only to go down on one's knees in certain places to find the ground simply littered with elegant flakes, cores, scratchers, drills and neatly worked knives. And nearly every day we found new rich localities. The tools were in general larger than those one found farther east, and it was more by way of exception that one came upon microliths here in Alakshan. Excavations in several of the finding places showed that here, as indeed almost everywhere in Mongolia, there were no cultural layers. The finds in the vicinity of Ukh-tokhoi lay directly on top of old drift sand. Several places about 5—6 km to the south were in part covered by low dunes. There were finds also on top of rather high basalt plateaus, mostly large objects consisting of chipped tuff. Potsherds were rare in all the finding places here.

An interesting phenomenon was the occurrence on the southern slope of the mighty limestone mountain Soyan-khairkhan, »The Four-peaker», of a shallow grotto, rather high up. Both inside and just outside this were unornamented potsherds of a reddish coarse ware and fragments of quartzite grindstones with centimeter-broad grinding grooves. In the vicinity there were also both unfinished and finished chalcedony beads. So in this splendid coign of vantage human beings had sat and manufactured beads! Everything had to be carried up by rather difficult paths, both water, food and the materials for the bead manufacture. There were also evidences of small *tsa-tsa* (miniature stupas of clay) having been sacrificed by modern Mongols at an insignificant obo. (Cf. Pl. 13 a).

In this tract I came across several yurt foundations hidden away in narrow valleys, or sheep-folds near the edge of some protecting terrace, indicating, too, that Mongols had lived here in modern times. Perhaps it was the seven year drought that at that time prevailed in Alakshan that had driven them away. It was evident that the level of the subsoil water was not overdeep here.

The spring equinox was the occasion of the first minimum temperature of the year above 0°; and there were several other signs of spring. We did not see any birds of passage until April 8th, but then thirty wild geese flew past overhead, and afterwards as many cranes, flying north-west.

On March 22nd we had a very unexpected visit, renewing contact with other sections of the widely ramifying expedition. My old digger CHIN arrived with 64 camels, with collections on the way from Urumchi to Peking. He had started out on January 9th, and had »SÖDER» and NORIN's camel-man LAO WANG with him. They all beamed at meeting with old acquaintances, and for us, too, it was a pleasant change in the monotony of the desert. This provided us, moreover, with a welcome chance of sending letters out to civilization.

By the side of my archaeological work I also made mapping tours, in order to get as much of this interesting country onto paper as possible.

March 26th was another day of rejoicing, when JOHANSEN caught us up after having taken our collections to Beli-miao. He brought with him mail from home and from expedition headquarters in Peking (three months had elapsed since we last had word), as well as several items that we had asked for to complete our equipment. One of these was a camera for me, to replace the one with which a camel had been in too familiar contact. Kind-hearted HUMMEL had sent some provisions along — delicacies even for the most civilized of epicures, and for us Gobi savages completely forgotten refinements. As our diet was extremely monotonous, and it was especially difficult to procure meat (that one really needs daily with such strenuous work as we were doing), we now fell upon these titbits from distant lands with great gusto; but we should almost have appreciated a good thumping tin of corned beef more than the bottle of olives(!) we got.

On his way hither JOHANSEN had heard talk of a band of Mohammedan robbers who were harrying the caravan traffic. Of ourselves he had heard from passing caravans that we were encamped at Ukh-tokhoi, but that all our camels had been stolen and the horses were dead.

Together with JOHANSEN, BOHLIN went on an eastern tour to a fossil locality, staying away a week. In the meantime BEXELL and I were beginning to find the lack of meat a bit of a trial. True, we could enhance the diet of rice with an olive or so, or an anchovy; but when in the Mongol village Altat, some 15 li to the south, BANCHE managed to get hold of a fine fat billy-goat our cup of joy ran over.

At Altat, where we had our few camels since the pasture in the neighbourhood of Ukh-tokhoi had come to an end, BANCHE and another Mongol collected a whole sackful of chipped flints of precisely the same types as those I was finding around Ukh-tokhoi.

In spite of the rich opportunities for work, both for the palaeontologists and myself, we got pretty heartily sick of our prolonged sojourn in the god-forsaken

a. An Alakshan lady who can hardly hide her satisfaction over her booty of empty tins from our kitchen tent

b. Mate Lama, one of the expedition's old Mongol camel-men, cross and perspiring


c. Bent Friis-Johansen sharpening a chisel for the palaeontologists

a. The watch-tower Boro-tsonch on the top of the hill. On the largest level surface to the left the first Han objects were found

b. Ruin 100 in Erego-khara-börek, Edsen-gol. The much decayed square enclosure is hardly visible among the tamarisk cones

desert in the increasing heat. We felt the break up of camp when we set off westward on April 15th as a liberation. During our stay at Ukh-tokhoi no fewer than ten caravans had passed on their way eastward (one of these was a band of pilgrims from Labrang), and seven going west. Of the latter, three were Mongol caravans, or travellers. Sandstorms raged on March 12th-13th, 22nd, 23rd and 27th, and on April 10th and 14th. During the two last-mentioned storms the air was cooled so drastically that the minimum temperature the following mornings was —10° and —8.9° respectively.

*Through Goitso to the Edsen-gol*

With the smallest possible caravan I took a rather more southerly route than the others, in order to reach the well Bayan-khuduk, where SÖDERBOM had found so many beautiful flint artifacts in 1927. I found the place among dunes and basalt hills; and in the vicinity of two wells here I collected thousands of flints, some of them very beautiful.

The following day I arrived at Denghin-khuduk, where I joined the others. Both here and about 10 li to the east, at Orodok, a little Chinese house had been built since 1927.

On April 17th we arrived at the friendly oasis Olon-toroi, with its groves of poplars, and reunited with HÖRNER, CHEN and most of our Mongols. Now we were once more assembled in a body, and remained so until we reached Boro-tsonch.

It was only now that we heard the details of the Mohammedan band of robbers of which JOHANSEN had caught rumours. It consisted of ten Tungans and two Mongols roving westward and plundering caravans of money, animals and goods as they went. They had paid our camel camp a visit, but left without doing any harm. HÖRNER and CHEN, however, had had an exciting time in the camp out in the dunes, and had been prepared for plundering. We who had been working in such comparative isolation at Ukh-tokhoi had no idea of all this; it was evident that the robbers had not ventured to go past our camp along the road, but had made a detour to the north. The probable explanation of the respect with which we seemed to have inspired them was that we had had shooting practice at Ulan-tologoi in the presence of some Chinese merchants, and this had then flown on the wings of rumour in all directions. Certainly, no-one could deny that we were well armed, even if none of us was exactly a crack shot.

At Olon-toroi we were obliged to leave one of the camels behind. This was our first loss during the entire journey. After two rest-days to allow a violent dust-storm to abate we arrived on April 20th at Arshan-obo, the health spring. The obo here, constructed from saxaule trunks (see Pl. 27 in Part I) had been daubed with clay and improved since KOZLOV's visit in 1908 (see Mongoliya i

Amdo i mertvii gorod Khara-khoto, p. 134). Our next camping sites in Goitso were Dotore-namak and Orlogon. From caravans that had been plundered by the band of robbers we heard almost daily fresh details of this scourge of the countryside. One of the caravans we fell in with had been left the poorer by 700 dollars, a rifle, five camels, two horses and opium. Two of the camel-owners, moreover, had been threatened with torture (glowing embers placed round their necks) if they refused to hand over all the robbers demanded. Another Chinese caravan had not only been compelled to pay a tribute of 600 dollars, two camels and divers furs, but two of their men had been forced to follow the bandits as their servants, to be ransomed later.

One of these caravans had a litter of puppies, and we were given a little white and yellow specimen that JOHANSEN christened Björn (Bear). This irresponsible little apostle of the joy of living grew up with us and became my faithful companion during lonely journeys for more than a year.

Among the dunes I shot a bustard or wild turkey, whose flesh tasted excellent. Our camp 47 (Amain-shandai) lay right in among the dunes. We had great good luck with the weather, getting through the heavy sand during cloudy days when the heat was not so unbearable. The robbers had moved down south towards the Gurnai, and when on April 26th we reached Boro-tsonch, the first watering-place in the district of the Edsen-gol Torguts, they were soon quite forgotten, for here I began to make archaeological finds that were to set their stamp on my work for the rest of this journey.

### *Turning to historical archaeology*

As has been mentioned on p. 16, I had passed the ruins of Boro-tsonch's watch-tower in 1927. I now decided to make a sketch-map of these ruins. As the archaeologist HUANG had been there before, I scarcely expected to make any actual finds. Below the ruins of the tower and its adjacent room, that are situated on the flat top of a strongly eroded hill,[1] I found at a lower level the remains of a courtyard wall. Pl. 16 a. While I was measuring this rectangle I dropped my pen, and on bending down to pick it up I found a well-preserved Han coin (Wu-ch'u) just beside it. I began to look about me more narrowly, and had presently discovered a bronze arrow-head and another coin. We set about making trial excavations, and at the same time the geologists hunted for the origin of the many ostrich egg-shells that were scattered about. The next day we began digging in earnest, and very soon found narrow slats, in shape reminding one of SVEN HEDIN's manuscripts on wood from Lou-lan, that STEIN had also found in such numbers in north-western Kansu and Sinkiang. I told WANG to keep a sharp eye open for any signs of writing on the slats. The

[1] Illustration 27 in HÖRNER's »Resa till Lop».

words had scarcely left my mouth before I myself picked up a slat with faintly discernible Chinese characters painted in black. The thrill of discovery was upon me, and the search was renewed on all hands with feverish intensity. And sure enough, presently we had several other and better preserved slats with inscriptions.

From the tower on top of the plateau one could make out at a great distance several other tower-like mounds. On a mapping tour BOHLIN visited three of these lying in a row to the south-west. These were not so well preserved, and had probably never been as large as Boro-tsonch. At all of them there were similar potsherds, and at the most distant of the three BOHLIN found an arrow-head of bronze.

The main body of the caravan continued to the Edsen-gol, while Mr CHEN and the two diggers remained behind with me. On several of the MSS that we were now excavating there were dates; but unfortunately we had no means to determine what these corresponded to according to Occidental reckoning. It was, however, fairly certain that they were to be dated to the Han dynasty. As we had, moreover, found fragments of paper in a rat's nest I guessed the date as the 2nd century A. D. It is nonetheless worthy of note that no MS on paper was found, but only on wood and silk.

These rats' nests were interesting. They consisted of straws, silk rags, bits of string and whittled fragments of slats. Evidently inscriptions had been »erased» by the simple expedient of whittling off the surface of used slats in order to use them again. And the rats had collected small libraries of such whittlings with characters. Just near the nests there was always a little heap of blackened millet.

There had once been a row of tiny rooms on the lower, at one time walled-in terrace. Now there remained only the undermost, inner parts of the rooms, that had been protected by debris from the slope of the hill. One of the rooms had been a kitchen: there was a diminutive hearth with a chimney, and in front of it stood a clay vessel built into the floor. Near the hearth there was a *k'ang*-like shelf, under which lay all sorts of miscellaneous rubbish, such as a rope sandal, divers wooden objects, silk rags and inscribed slats. In several MSS, probably letters, »the chief of 30 ching» was mentioned. *Ching* is a unit of surface measurement.

On some flat pegs there was painted a curious, grinning face, probably intended to avert evil spirits. Up at the tower there had been a drum (see Fig. 7). I also found a socketed axe of iron without a trace of rust, a bit of an iron saw and a sickle, bronze arrow-heads and a complete crossbow-arrow with bronze head and feathered end. Its length of only 32 cm surprised me. Among the wooden objects were also a cobbler's last and the wooden leg of a little horse sculpture. The name Chü-yen, that was applied to the Edsen-gol region in the Han dynasty, also appeared on some of the slats.

On May 1st the minimum temperature was —12.4° C., which was unexpectedly low, for the temperature in daytime was around 20°. Sandstorms raged on May 3rd and 7th—8th. On this latter date I finished the dusty excavation of my first Han ruin, after which I was all agog to continue with other ruins in the Edsen-gol region. I made up my mind, moreover, to make a careful inventory of everything concerned with Han ruins, hoping in this way to get onto the track of the town Chü-yen mentioned in the Han annals, that must have been situated somewhere to the south of the terminal lakes of the river and either in or near the delta.

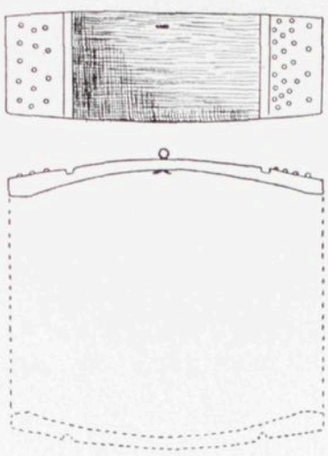


Fig. 7. Part of a wooden drum, 58 cm long, from Boro-tsonch. Diameter very uncertain

Following the same route as in 1927, I arrived at the river after two days. I stopped for lunch at Khara-khoto, where I collected a number of small finds. I decided, however, to postpone a closer examination of this already partly investigated ruin until a later date.

It was a sheer delight to settle down under the Edsen-gol's light green poplars together with the main body of the caravan at Tsondolin-tsaghan, a plain one or two kilometers to the north of the memorable site of the main camp of the expedition of 1927 and the meteorological station Tsondol. The river was practically dry, but the idyllic and park-like surroundings were just ready to merge from the delicate greenery of spring to summer's exuberant fullness.

The caravan was now growing considerably larger, for some of the servants and many of the animals from the meteorological station were still stationed here, lodging with various *mai-mai;* and they joined us by and by. There was also a good deal of camping equipment, e. g. yurt, as well as tinned food and 600 kg of flour. There were two Chinese, twenty-four camels and five horses. The latter, however, were in such a wretched condition that they were even worse than our brown nag, that could scarcely walk. We therefore exchanged them for a camel. An agreeable surprise awaited me in camp in the shape of HEDIN's old dog »Hami», Original-Hami, as one might say. The big, lumbering fellow flung himself at me in an ecstasy of clumsy friendliness before I had time to get up the first morning, licked my face with all his might and was quite beside himself with inarticulate goodwill. But his foot, that »Snaps» had badly bitten in the course of a dog-fight for the favours of some little bitch here at the river in the autumn of 1927, was still giving him some trouble. Otherwise his behaviour was just as personal and inimitably his own as ever: he could not tolerate any strangers within a certain distance of the camp, whether in the shape of people, horses, camels or donkeys.

Following good old Tsondol custom, we gathered around a huge fire in the

evenings, drank tea, smoked, talked and listened to the classical gramophone records we had, and to the rustle of the wind in the treetops. The moon shone down, the night was cool, and it felt as if joy were in the very air. I was at the Edsen-gol again!

I intended to begin my inventory of the ruins in the river delta, and as HÖRNER also wanted to go down the river we joined forces. Meantime, there was some dissension among the Mongols, and JOHANSEN had for some time been anxiously endeavouring to settle the matter. Now four of them wanted to return home. Two of these we desired to keep with us; and with tact and diplomacy JOHANSEN finally arranged things to mutual satisfaction, these two staying on while SARAN GEREL and SANGRUB left.

On May 14th HÖRNER, Mr CHEN and I set off. We were to meet the others at Mao-mu, 230 km distant, in the last week of the month. We followed for the most part the easternmost arm of the delta, the Ontsein-gol. Its course runs north-east to begin with, and afterwards north; it disembogues into Soghonor. The first night we encamped near the house of a Chinese merchant at Khonin-khobo, and the following day we reached Wayen-torei (or Bayan-torei) on the edge of the desert, a place that in later stages of the expedition was to become familiar.

The river at Wayen-torei had run half dry, but the bed was so muddy that it was difficult to cross in some places. On the plain to the south there were meres, with several species of wild duck, geese, herons, gulls, terns and other aquatic birds. In among the first high sand-dunes immediately to the east of the river there were fine little lakes with clear blue water that was rippled when the eddying breezes played between the crests of the dunes. The sand was not particularly broad, and it ended in a wedge towards the north. Beyond it began completely sterile, black gravel desert that contrasted sharply with the luxuriant, living landscape on the other side of the river.

On a tour of reconnaissance beyond the dunes I found the ruins of a little watch-tower of stone on a low hill called Jinst (Jinstei?), that probably signifies »mandarin button»; and actually the ruin does resemble a crowning button on the evenly rounded hill.

In among the high dunes, on a hill covered with sand, WANG found a little brick ruin due west of the former tower. Inside there was a layer of straw and reeds two meters in thickness, that on investigation proved to contain or cover a number of well-preserved and interesting objects from the Han dynasty. Among these were 47 slats and fragments with writing, two wooden combs, a socketed axe of iron, a silk needle case with two shining iron needles, coins, bronze arrowheads, silk rags, a wooden spade, portions of the hub of a wheel, the head of a club and other things. That the iron objects showed not a trace of rust was striking proof of the aridness of the climate not only of to-day but for the last

2,000 years. Some of the wooden objects, too, appeared quite fresh where they had been well covered and not in contact with the ground.

There was not time for a complete excavation of this interesting little locality, so I resolved to return on a later occasion.

On May 17th we headed west through the thickets and groves of the delta, making for Kukchen-sume near the Dunda-gol. The reason for my visit to this place was STEIN's remark in »Innermost Asia» that one of his surveyors had found a ruin on the »Owang-gol», i. e. the Oboin-gol, where he had collected a number of Tibetan and Mongolian MSS and block prints. STEIN recommends this ruin »to some future explorer». Accordingly, I had rather high expectations of this place and its surroundings. Unfortunately STEIN's map is anything but reliable in the interior of the delta, and scarcely a single name is correct. It now appeared that the place must be identical with Kukchen-sume, an entirely »fresh» ruin of a lama temple that was destroyed by the Tungans in 1863. And sure enough, in a so-called *bongkhong* just near the ruins there were quantities of MSS or prints on paper, in Tibetan, Sanskrit and Mongolian, all damaged or fragmentary, as well as several kinds of *tsa-tsa*, bits of *tang-kas*, lacquered wood and rags. The Mongols wall in their damaged or incomplete sacred texts or writings in such small buildings, called *bongkhong*, presumably so that the power reposing in the written or printed word shall not break loose and go astray after being broken out of its context.

The temple, that had been built in the Chinese style, comprised only a few buildings, and could not be very old. Little by little we got rather a good survey of how temples were moved about in the Edsen-gol region (cf. p. 000).

If this ruin was a disappointment, I was compensated by the discovery of the ruins of a little watch-tower about 9 li to the south, in among the vegetation of the delta. This was called Tsaghan-tsonch (a name that recurs in connection with many other towers in the sequel). The tower had been built on sandy ground — perhaps actually on a sand-dune — and the surroundings were now 1.6 m lower than the ground level of the building. The debris from the ruined walls had covered the sand round about, protecting it from wind-erosion. As at Boro-tsonch, there were small rooms with white-plastered walls, and there were traces of the walls having had some red borders. I found a few slats with inscriptions, all marked with »the 5th division».

On May 20th we advanced some little distance northwards to the ruins of Tsonchein-ama (neither this nor any of those mentioned above are given on STEIN's map), situated on the border between tamarisk jungle and dune country. In the vicinity there is a dried-up little stream-bed called Khashiatei-gol, said to be an eastern arm of the Dunda-gol. This ruin, at one time a small rectangular fortress of sun-dried brick, has suffered much from the storms of time, but some portions of wall stood 7—8 m above ground level. Excavation in the

north-west inner corner brought to light an arrow-head of bone and a few poorly preserved slats with inscriptions, including one that mentioned »the chief of 30 ching», just as at Boro-tsonch. On the white plaster of one of the inner walls, under the covering of drift sand, there were five large characters within a red frame: *Yang t'ou shih wu-pai* (literally translated: sheep head stone 500).

We could not remain here with our big caravan, for the pasturage was too scanty, there was no water, and the camels ran off and were almost impossible to find among the thickets. On the 22nd we pushed on to the Dunda-gol quite near the prince's residence. The river, on which HEDIN and HASLUND had sailed in the autumn of 1927, was now, in the month of May, quite dry.

Following SVEN HEDIN's example, we sent MATE LAMA with our visiting cards to the prince to ask when we might pay our respects. MATE soon returned with the message that the prince intended to visit us first! He came towards evening, accompanied by two men. Our Mongols, who were rigged out much more splendidly than we were ourselves, received him as he dismounted. When we had drunk tea and smoked cigarettes in our tent I presented him with a pair of field-glasses from HEDIN and a *khadak*, to his evident gratification. It amused him very much to look at the pictures in HEDIN's »Åter till Asien», in which he figured himself. The old blind prince had died that year, and the son who was now visiting us had inherited his title.

Together with HÖRNER I set out the following morning to the ruins of Sair-tsonch, some few kilometers to the south (given on STEIN's map). As we started we heard the deep tones of the conch trumpets from the lama temple up on the sediment plateau where the prince had his summer quarters. The ruins were not the remains of a watch-tower, but of a *suburga*.

On the afternoon of this hot day we rode the short distance to the prince's quarters on our finest camels. The royal residence consisted only of some houses surrounded by walls, and with four yurts in the narrow courtyard. In one of the yurts we were received by the prince, and BUYAN JIRGAL handed over a biscuit-tin full of dried fruit as a present. We were then regaled with tea, cakes, sweets, Hami raisins, and finally a solider meal consisting of boiled mutton with Chinese vermicelli, vegetables and soya. The prince presented us with a *khadak* each and invited us to choose the best horse in his herd.[1]

We continued the following day to the tree-bordered bed of the Oboin-gol, passing the ruined watch-tower Dor-tsaghan-tsonch, and pitching camp at Tsekha. The day after we reached Sogho-nor, and encamped on the shore below Boro-obo. We felt as if we had finally arrived at the goal of our long journey. The lake

[1] We did not take advantage of this offer. Our Mongols considered that we should not have much use for an Edsen-gol horse, as these animals had grown up on soft ground and had in consequence such soft hooves that the hard gravel or rock of the Gobi would wear them out. So we left it by that. By rights, therefore, both HÖRNER and I have a fine horse each to our credit at the Edsen-gol!

glittered in the clear morning sun; the waves plashed on the sandy beach, sounding in the ears of desert-weary travellers like the loveliest music; and the cliff to the north of the lake reminded us of the high coast of Gotland. Gulls and terns shrieked and swooped elegantly in the blue, and we ourselves plunged in gratefully and splashed about to our hearts' content.

The two days at Sogho-nor were made so much the pleasanter for me, despite the absence of both rice and flour, by a number of rich neolithic finding places just near the camp. Even during the first expedition SVEN HEDIN's servants had found tools here, and afterwards GEORG had done some collecting at the place. Now I saw that the sites lay below the well-developed ancient shore-line, and that curiously enough they even reached below the present high-water mark. The finds may belong to the latest facies of the stone age. It is thus apparent that during this period the water-level had been lower than it is to-day. Nor did the ancient shore-line lie so many meters (about 10) above the present surface of the lake. The water was really too salt for drinking, though the camels drank it. We had to fetch our drinking-water from the Oboin-gol. The people who had shaped the beautiful little flint tools and made beads from fossilized ostrich egg-shells were evidently able to drink the lake water, that must thus have become more saline in the course of time.

Just before eight o'clock on the evening of May 27th we saw a splendid meteor almost due south; it shone green, like the fireball from a falling rocket.

If my own stay at Sogho-nor was a sheer pleasure, HÖRNER had to slave all the more in the heat. One day he started out at 5 o'clock and came back to the camp at 9.30 in the evening. But he was also rewarded for such long working days by the discovery of interesting shore-lines of great age. He wanted to stay still longer at the lake, while for my own part I wished to move southwards again to the ruins. Accordingly, on May 28th we took leave of each other, and I went back to Dor-tsaghan-tsonch near the summer quarters of the prince, where I excavated the little mound beside the ruined tower. It contained a rectangular room; the only real finds consisted of a bronze buckle and a comb, which showed that this ruin did not belong to those of Han time, but to those contemporaneous with Khara-khoto.[1]

The camp among the poplars near the almost dry bed of the Oboin-gol was alive with thousands of insects, both large and small, and not the most desirable of bed-fellows. There were grasshoppers, beetles, camel-lice (those horrible little ticks from which I had suffered in the summer of 1928 on the Tarim), ants, moths, larvae, the big ugly yellow-white *tsaghan-teme* and God knows what besides. Undoubtedly there were scorpions also, though I was happy in not seeing any.

[1] When I passed this spot again, three and a half years later, the lamas had collected a big heap of brushwood to cover the traces of my excavation. This was probably in order to nullify the evil I had done to the *gadsarin-edsen* (the lord of the place) by digging in the ground.

Because of a message from HÖRNER to the effect that the cook, BUYAN JIRGAL, had tumbled off his camel and hurt himself badly, I had to go back down the Oboin-gol to Tsekha, to which place HÖRNER had returned, and assist in doctoring the patient. Fortunately, he soon recovered from his accident, and the swellings went down. On one or two occasions on these burning hot days, as also on some of the preceding, there were a few drops of rain; but of course no proper rainfall could reach the surface of the earth through the sun-heated layers of dry air. It was said that there had been no real rainfall here for the past ten years.

HÖRNER made an excursion to Ghashun-nor, and found that the water area was a good deal less than is indicated on all the maps. He went a long way out on ground that on STEIN's map is given as lake, and still had a long way to go to reach water.

From a Mongol I got wind of a finding-place for chipped flints at the well Shine-usu between the lakes, and visited the place on June 4th. The well — or rather wells, for there are two of them — lay on the main road to Outer Mongolia. They were about 5 m deep, and in the sand around them lay numerous flint and stone tools in an area with a diameter of 100 m. This was one of the richest sites I had yet come across, with the exception of some at Ukh-tokhoi. Ghashun-nor's ancient double shore-line ran just to the west of (i. e. below) the finding-place.

I was now able to take leave of HÖRNER again, and I returned to the interior of the delta. On June 6th the new Torgut prince was consecrated to his office by the Grand Lama from the Western Temple; but I saw nothing of this coronation ceremony. Instead, I betook myself to the ruins of Tsonchein-ama, where I resumed the excavation of its dusty strata. Just near the dunes and 10 li to the north of the ruins there are a number of beautiful little lakes, extending at the most 500—1,500 meters. When the Khashiatei-gol carries water it flows into these lakes, that give their surplus to Sogho-nor. There were simply swarms of water-fowl. Through my glasses I could study the morning play of the swans and admire the graceful diving manœuvres of the web-footed loons. Several species of wild duck, geese, gulls and terns also habited this little bird paradise.

At two o'clock in the afternoon the temperature rose to 35.5° C., though the night temperature had been as low as 9.8°. The finds in the ruins were rather badly preserved. Among the finds of pottery there was a scoop of burnt clay.

On June 11th I set off due west to Baller on the Oboin-gol, where I pitched my blue tent under magnificent, shady poplars (see Pl. 17 a). In the vicinity I found the temple ruin Kuku-sume (given on STEIN's map as Kok-suma), with the low remains of the walls of one single little building. Even before it had fallen into decay it had been only temporarily inhabited by lamas.

Farther down along the Oboin-gol there is said to be another modern ruin, Gödi-gunchi, that I had no reason to visit.

After this tour of reconnaissance in the interior of the delta I realized that the town Chü-yen could not be there. The people knew well enough what ruins there were in these tracts, that are rather densely inhabited by Mongols. It was evident that I had now visited all the ancient ones.[1]

Both Tsonchein-ama and Tsaghan-tsonch are Han ruins, and are evidently connected with the row of watch-towers that on STEIN's map run just to the west of the river in the Tsondol tract. (I shall revert to this line, that I have called the Tsondol Limes, later on.) If there were originally intermediate towers between the northernmost tower in the row and Tsaghan-tsonch, these have since been obliterated by moisture or else destroyed by the vegetation. The statement in the Han annals to the effect that Chü-yen lay south-west of Chü-yen-hai are important. But what is Chü-yen-hai and where is this lake situated? The Chinese archaeologist HUANG WEN-PI identified the lake during the 1927 expedition with Ghashun-nor, as this is the largest lake. In the tract to the south-west of it, however, there is not a single relic of antiquity; and this region has never possessed the resources to feed a town. Rather more plausible would be the identification of Sogho-nor with Chü-yen-hai, though even this does not provide a satisfactory solution. I had now convinced myself of the non-existence of any Han ruins in these parts. This, strictly speaking, exhausts the possibilities. As it happened, however, HÖRNER discovered in the tract to the south-east of Sogho-nor, not far from our camp Wayen-torei, a long since dried-up ancient lake in the desert, whose deepest part was taken up by a hard salt crust. It had probably been fed with water through the now dry river-bed that had long ago supplied Khara-khoto and the surrounding tracts. As this river had enabled the existence of Khara-khoto, it might very well have enabled also that of Chü-yen a thousand years earlier. And if this river existed in Han time it ought also to have had a terminal lake = HÖRNER's ancient lake. In this case Chü-yen must be to seek to the south-west of this lake; and I made up my mind to restrict my reconnoitring tours to this »critical region» when the summer heat had yielded to rather more temperate conditions. On this assumption it proved, moreover, that the Han ruins so far known to me were grouped *around* this critical region.

On my way back to Tsondolin-tsaghan I passed Dash-obo with its bundle of

[1] On the Outer Mongolian frontier, a long day's march to the east of Sogho-nor, there was said to be an Ulan-tsonch, i. e. Red Tower, that I was unable to visit. The existence of the watch-tower east of Sogho-nor that is marked on STEIN's map is extremely doubtful. The country is very even in this direction, and I must inevitably have seen such a well marked ridge as that indicated by his contours when in the winter of 1933 I passed to the east of the lake. It is probable that his topographer was misled by the remains of a mesa or something of the sort, that had appeared magnified in a mirage. I was a victim of the same kind of illusion to the west of Sogho-nor when I visited the remains of a mesa that a Mongol had taken for a ruined tower.

faggots on top of a bound dune. MATE LAMA offered up a tuft of wool from his camel in a tree in the vicinity, in which there already hung sheep's shoulder-blades scribbled over with Tibetan signs, as well as red Chinese placards, cloth rags, scraps of paper and the like. Evidently this obo had given the river its name, for the Oboin-gol was sometimes called Dash-oboin-gol. Ten years earlier the now deceased prince, who seems, moreover, to have been called DASH or DASHI (= khadak), lived here in the neighbourhood to the east of the river, where he had his temple.[1]

Emerging from the sterile gobi area outside the vegetation belt of the river, I came upon the row of low ruined watch-towers of which some are given on STEIN's map. Before this I had seen them only at a distance; seen close up they gave the appearance of gravel mounds varying in height between 2 and 5 m. From some of them the remains of brick towers stuck up. The diameter averaged about 20 m (see plan, Fig. 8). The mean distance between the mounds was 1,300 m. STEIN's map gives only three of the ten that I visited on this day. Along the row of towers runs a double line of gravel swellings in the ground, so low that one can scarcely measure their height. One hesitates at first between the assumptions of an artificial construction and a formation of nature; but as both lines so faithfully follow the row of ruined towers they must be the work of human hands. They are doubtless the last faint remains of a double Limes wall or of a moat. Behind some of the mounds there is a rectangular enclosure of just as indistinct 'ramparts'. These have all been eroded down to a level only very slightly raised above the black gravel of the ground, by which, moreover, they are completely covered. Where small bushes grow one sees nothing at all of these lines of gravel. This row of watch-towers had thus been planned and constructed after the pattern of The Great Wall and the outer walls I had studied farther east in Mongolia, though it had not been built so high and with such stability. Perhaps the wall itself had never been quite

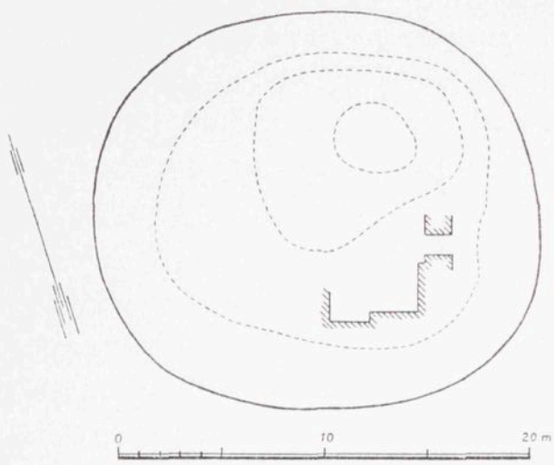



Fig. 8. Plan of the fourth watch-tower from the north in the so-called Tsondol Limes. The hatched parts are walls found on a trial excavation

[1] There are many queer anomalies in the forms of the Asiatic names on all existing maps. One of the more amusing refers to one on the Edsen-gol in STIELER's Atlas, and it is surprising that not a single member of the highly qualified staff of JUSTUS PERTHES in Gotha has stumbled across this name. I refer to »Lager Torgutskago-böili» on sheets 69, 74 and 75. This is a direct transcription from Russian maps. In German it should read »Lager des Torguten-beile (or Torgutenfürsten)». The situation of this residence of the Torgut prince is near to the Western Temple, where he used to live a rather long time ago (more than 40 years). Let us hope that this misnomer is deleted from the next edition of STIELER's excellent map.

completed? The mounds in this »Tsondol Limes» had thus not been watch-towers in the sense of look-outs, but posts along a line of defence. It now remained to be seen whether this construction was connected with the Han Limes with which STEIN lost contact near Mao-mu, or whether it was a purely local fortification that had e. g. constituted the defence-works of the Chü-yen district.

In one of the towers we found a little dress-hook of bronze, and in another a couple of slats with inscriptions.

### *From Tsondol to Mao-mu*

In the evening I encamped at Tsondolin-tsaghan again. And during the next few days I continued my mapping and investigations. After the arrival of HÖRNER and CHEN from Sogho-nor we were able to set out southward on June 18th.[1]

HÖRNER mapped the bed of the river sourcewards while I went out to the row of watch-towers just to the west of the river-bed and continued with the mapping there.

On account of the summer heat we set out as soon as it was light enough to see for the mapping. By 8 or 9 a. m. the camels were sweating profusely, and we had to camp. We slept and ate in the middle of the day, and resumed the march in the afternoon. Dusk was falling when we finally called a halt and pitched camp for the night.

The site of the 17th tower from the north was occupied by a small, much decayed fort, Mu-durbeljin, with a side measuring 15 m (for the description see pp. 146 f). In tower 22 I made a trial excavation during the midday-rest and was rewarded by a few Han finds. Towards the south the row had not the same soft curve as in the north, and it inclined towards the river. This so-called Tsondol Limes had altogether 27 towers (STEIN's map gives 7).

From our camping-place Ulan-sukhai (that is said to be quite close to a Tsaghan-tsonch on the other side of the river) we continued next day to Dunda-tsaghan. The trees along the river were thinning out, but 1—2 km westwards from the bank stretched grassland of the sort referred to by the Mongols as *tsaghan*.

That night we were woken up by an astonishing arrival: a Mongol by the name

[1] Little by little I made an observation that explained the arising of all kinds of misunderstandings in connection with the directions given by the Mongols. They consider that the Edsen-gol flows from west to east, whereas in reality the direction is N. N. E., which for a European amounts practically to south-north. Thus from e. g. Tsondol, according to the Mongols, Suchow lies in the west and Sogho-nor in the east. The northern temple is referred to as the East Temple and the southern one is called the West Temple. It is thus natural for the Mongols to refer to the easternmost delta-arm of the Edsen-gol — e. g. at Tsondol — as the Front River (STEIN's Ümne-gol, also called the Ikhe-gol) and to the Mören-gol as the Rear River. This is also connected with the fact that the Mongols in these tracts have their yurts with the doors opening to the south-east — because the strongest winds are north-westerly. The tent-openings in large parts of Mongolia are otherwise facing south, and south is »the front» according to all the rules of cosmology.

of NAIDANG came into camp as a courier from Peking, with bundles of letters, newspapers and books! He concluded the handing over of the various packages by ceremoniously depositing in a row beside our bedding on the ground six large bottles of beer. This was SÖDERBOM's special little greeting from civilization!

The next morning we did not start out early; but we had already begun going through our post before sunrise. The afternoon saw us once more on our way southward up the river, and that evening we cooled our first bottle of beer with a wet towel that was allowed to evaporate to dryness. How we blessed SÖDERBOM for this long-forgotten and deliciously *cool* beverage!

On June 21st we reached the ruined fort Bagha-durbeljin, after passing many Mongol yurts among the luxuriant vegetation between the numerous river-arms near the head of the delta. We took our midday-rest at the watch-tower Shara-kuren-tsonch, that is fairly well preserved. In sharp bends in the river-bed there was still some water left in little pools, in which small fish sustained a sad existence whose term was set by the evaporation of the water. Trees grew on either bank. The ruin Bagha-durbeljin is of the same type and size as Mu-durbeljin, though better preserved (see p. 141).

The following morning there was a light shower of rain, a rare event in this arid country. To the left was a narrow row of isolated rocks, the Kuku-ula; its southernmost peak was Bayan-bogdo. On all small-scale maps these hills are magnified 10 or even 100-fold. Their entire length is no more than 17 km, and the average width is 2—3 km. I soon came upon a row of watch-towers along the east bank of the river. The ruins had been strongly eroded by wind on the west side, though they were on the whole better preserved than the towers in the »Tsondol Limes». There is no vegetation to protect the latter from the hard north-west winds, whereas here there were trees and tamarisks.

On the sharp peak of Bayan-bogdo stands an obo, and down on the level ground there is another, consisting of large bundles of faggots beside a copious source. Both Mongols and Chinese stopped at this shrine and mumbled some phrases. Away to the south and east stretched real gobi: black, even, gravel plain without a straw. Only along the river banks did a few scanty clumps of trees appear. The watch-towers continued south of Bayan-bogdo at irregular intervals. We stopped at a rather high tower called Tsakhortei (for an account of the excavation see p. 140), and encamped that evening at Tsaghan-tokhoi.

The river was as much as 1 km across in these tracts, but the vegetation was restricted to a few clumps, rather more on the west bank than on the eastern side of the stream. We passed several fairly high towers that are given on STEIN's map, and noted some low ones as well.

On the morning of Midsummer's Day I saw a couple of antelopes only 300 m away from us. As I approached them they retired slowly, and without showing any alarm. In the half light one saw only their white bellies, that gave a

complete illusion of the primitive figures of antelopes in rock-carvings when filled in with white colour by the archaeologist. At this point the river flowed due north, and there was not a trace of vegetation. Along the eastern bank I passed nine ruined towers, two of which had little enclosures of low earthen ramparts. The tenth lay beside a straight earthen rampart, that must have been the Han Limes for which STEIN searched in vain on this side of the river. He must certainly have passed the spot in the darkness, for the rampart is very distinct. Near the tower there was a gap between two low mounds, at one time forming a gate-tower. Here, then, was the actual gateway to the domains of the Han emperors, where in times of peace customs officials were doubtless stationed to control the traffic; and in times of war and unrest soldiers kept a vigilant look-out for signals of smoke or fire from the watch-stations farther down the river. But now »no flaming beacons cast their blaze afar.»

Only some few hundred meters farther south and within the *agger* lay the beautiful, rather well-preserved fortress Ulan-durbeljin, within the stout walls of which the main guard must have been quartered.[1] Outside the fort proper we excavated a couple of hundred slats with inscriptions before continuing in the evening to Adag-tsaghan. Meantime, however, I mapped the route as far as the big ruin Arven-tokhoi-durbeljin, about 20 li south-west of Ulan-durbeljin.

At Adag-tsaghan (The Last Grass Plain) the Torgut prince had had a little station house erected, where his post-riders were quartered. South of the station Kansu proper begins, with Chinese settlements. As I came to visit these tracts again under more favourable working conditions, I shall postpone the description of the ruins until later.

On June 26th we reached the camp of the main caravan just to the east of the Mao-mu oasis. Mr CHEN and JOHANSEN were the only two there, for BOHLIN and BEXELL had for a long time been up at the nearest coal-mines in the Pei-shan, geologizing. During the period of rest we spent here we felt as if we had indeed come to the flesh-pots of Egypt, though not so much for the sake of the »flesh» as for the vegetables. We gorged ourselves with greens and eggs, that we had not tasted for a good nine months. At the end of June it rained several times, and we even had thunder.

SÖDERBOM had left fifteen camel loads with a Chinese merchant in Mao-mu. These comprised a part of what had been left behind at the Tsondol station; and among much rubbish we found two boxes of tinned food (ZIMMERMANN's talk of starvation thus appeared to have been slightly exaggerated) and the big green mess-tent from 1927. The temperature during the day rose to 36.5° C. (97.7° F.), which was pretty trying. The camels also suffered from the heat,

[1] Illustration 38 in HÖRNER's »Resa till Lop» shows the gateway of Ulan-durbeljin as seen from within the fort.

and a couple of them died. They were, unhappily, full of sores on their backs, and JOHANSEN had his hands full endeavouring to keep these free from maggots and other vermin.

### *From Mao-mu to Suchow*

As BOHLIN and BEXELL were very belated we decided to set off for Suchow in advance, especially as the camels needed to be taken to higher and cooler tracts with other pasturage. Accordingly, we started out on July 8th, crossing the Edsen-gol immediately to the south of the actual »town» Mao-mu. Mr CHEN,

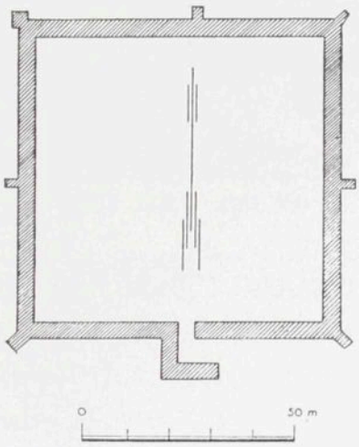



Fig. 9. Ruined fortress north of Ying-p'an and west of Mao-mu

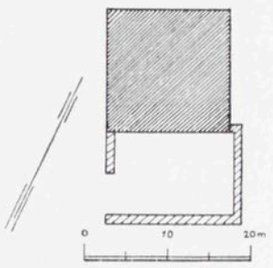



Fig. 10. Hung-sha-tun (Stein's T. XLVI l), the second ruin visited on July 9th on the northern side of the Pei-ta-ho

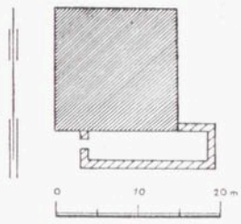



Fig. 11. Hung-tun-tze (Stein's T. XLVI k), the fifth ruin visited on July 9th on the northern side of the Pei-ta-ho

HÖRNER and I entered the place to pay our respects to the magistrate, whose yamen took up a good part of the area of the town. A thunderstorm accompanied by rain broke out just as we entered his little den, and we were glad thus to avoid getting wet. Afterwards, a soldier with a lantern followed us through the silent streets and out through the magnificent town-gate, in the pavilion of which the soldiers sat and sang to the accompaniment of the wind soughing in an old tree that spread mighty branches just near. On the yonder side of the broad, dry river-bed lay the camp. (Plate 20 a).

The following day we continued in a westerly direction, after first heading north and crossing the dry Pei-ta-ho. In the Ying-p'an oasis there were the ruins of two forts, but they were not very old, dating probably from the beginning of the Manchu period, which is to say, the time when Mao-mu was founded (i. e. the modern town, for the spot was settled also in Han time). Just to the north of the river-bed I found among the *yardangs* a rectangular ruin (see plan, fig. 9), whose age could scarcely be greater than that of Khara-khoto. And after a further kilometer or so I reached a big watch-tower, Hung-sha-tun (Fig. 10).

On this stretch I crossed the tracks of foreign shoes. They looked so fresh that BOHLIN, from whom they must originate, must have passed here on his mapping that same day, and I was sure that the caravan would pass his camp. The watch-tower had been built on afterwards, and may very well contain a core dating from Han time. Before I got to the big tower Hung-tun-tze (also on STEIN's map) I came upon a smaller one; and a little way to the south, near Ying-p'an, I saw another. After this I went due west somewhat to the north of the Pei-ta-ho, in whose dry bed the wind whirled up clouds of sand. No water had flowed there for many a long year.

The big tower Hung-tun-tze was exactly like Hung-sha-tun, though the room situated at the base was narrower. See plan, fig. 11. According to STEIN's map, the Han Limes should be clearly visible about here; and sure enough, I found it just at the tower. To the east of the latter one saw nothing of it. After passing just to the south of three smaller ruined towers we encamped. We had been three days at this camp when BOHLIN and BEXELL caught us up with fine and interesting finds from the coal-mines in the Pei-shan.

On July 13th we resumed our journey, and I paced along the Limes rampart while the caravan followed the road to the south. I soon lost sight of it. The day turned out intolerably hot, and there was no shade in the gravel desert. But in the south one could just glimpse the splendid contours of the Nan-shan in the hazy distance; and my thirsting body longed with a heavy sort of violence for its cool alpine valleys with their running streams.

STEIN has given a rather detailed description of this part of the Han Limes, that was discovered by him, so I shall not dwell upon what I saw.

Once in among the the first foothills of the Pei-shan, I left the rampart, that winds along there in the gaps between the hills on whose crests the towers have been built. I turned my face S. S. W. towards a group of small oases flanking the river, and in the first of these I finally got a drink of water. I drank greedily, though it was not boiled.

It was evening, and darkness had fallen; but I found neither the caravan-road nor the caravan. After receiving unsatisfactory instructions as to the way at a little Chinese farm, I wandered about until at last a fire in the distance gave me a longed-for goal. But it was not our camp-fire; it was a blaze outside a wretched hut, where a Chinese woman with three filthy and naked brats sat scorching the wool off a sheep's head and feet. As she was unable to direct me either to the road or the caravan I resolved to spend the night there, for it was hopeless to go on rambling about in the dark. The master of the house soon came home, and showed me a little wooden platform outside the door where I might sleep, upon which he spread a saddle-cloth and a worn-out sheepskin. (I had delightful premonitions of how lousy I should be by morning.) The dog treated me in the most unfriendly manner. He was so angry that he

a. Poplars at Baller on the Oboin-gol

b. High-wheeled cart at Mao-mu

c. Chinese peasants at Chen-i, Kansu

a. The westernmost end of a branch of the Great Wall at Tung-hua-yuan, Kansu

b. The much eroded gate-house of Adune-khuren, a ruined stronghold between Khara-khoto and the Edsen-gol

even slit up one of my trouser-legs. The old fellow then gave me a long stick with which to defend myself, and with this at my side I went to sleep in a crouching position on the woefully short platform. I had good use of the stick time and again in the course of the night, to keep the dog at a distance, for the brute woke up at intervals to attack me.

In the morning they made »tea» from some sort of artemesia seed, and the old chap even wanted to press mutton upon me. I contented myself with the tea, however, and afterwards got the old fellow to help me look for our camp. We wandered over small tamarisk-clad dunes and uncultivated scrub country and over small fields. Everything was in loveliest bloom, the opium fields were a glory of pink and white, and the early morning air was cool and fresh. We soon reached the camp, where everybody was still asleep except some of the servants. The old man received a shining silver dollar for his pains, and was beside himself with joy. He had probably not seen so much money for many a long year.

During the afternoon, after a sweltering day, we marched along the edge of the oasis T'ou-tun and then over the desert again to Ta-li-lu. On July 15th we set out at 3.45 a. m. in the moonlight, and reached the vicinity of Chin-t'a. The following morning we passed the little town with the sounding name (Chin-t'a = The Golden Pagoda),[1] where the harvesting of the poppy crop had begun. Busy, bespectacled Chinese were going to and fro collecting the thick opium-fluid in tin cans as it oozed out of transverse cuts in the seed-vessels of the poppies. One imagines that it would scarcely pay to cultivate opium anywhere but in the East, with its cheap labour. It is much too slow and laboriously finicky a business for European labourers.

On the other side of Chin-t'a we came upon the river again, and this time it was carrying water. We encamped at ten o'clock between the branches of the river quite near a rocky ridge, broken through here by the river. Sallows grew in this spot, that was called Shan-tao-ling.

We were woken up in the night by heavy rain. On the top of the low ridge stood a few odd watch-towers, and the view from here was magnificent, taking in the green of the Suchow oasis against the background of the mighty alpine wall of the Nan-shan, whose snowy peaks were draped with thick clouds. We pitched camp that evening on the northern edge of the Suchow oasis, and on July 18th we entered the town itself, after first crossing the low earthen rampart constituting the remains of The Great Wall. This westernmost section is said to be as recent as the Ming dynasty.

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[1] From the brief glimpse we got it did not seem to have changed much since MANNERHEIM drew his plan of it in 1907. See his *Across Asia*, p. 439.

In Suchow we put up at a miserable inn with little cells full of bugs around a small, filthy courtyard.[1] In the evenings the sickening, sweetish smell from opium pipes came floating through the open doors of the neighbouring hovels. Here we stayed during the long period that it took to reorganize the expedition, procure more camping equipment and packing cases, and make definitive arrangements for a number of part expeditions that in the sequel should be able to work independently of one another. During the period of waiting we hoped that the camels would have time to put on a bit of fat for the exertions of the coming autumn and winter. These hopes were cruelly dashed. Only a few days had elapsed when we began to get news of one death after another from the camel-camp. Quite a large part of the herd was attacked by some mysterious disease that seemed to take all the spunk out of the animals.

On August 7th HÖRNER and Mr CHEN set off for the mountains for glacial studies. They were provided with some camels, but chiefly with donkeys as beasts of burden. (This was the last I saw of HÖRNER and CHEN in the field; our next meeting was in Peking in 1933.) We stored all collections and superfluous baggage in a couple of the rooms in the inn, that were then sealed with strips of paper, according to the Chinese custom. The strips were provided with the mayor's seal, as well as with invocations in Swedish concocted by myself. With these preliminaries happily concluded, BOHLIN was able to start off on August 12th in his direction, while BEXELL and I set off for the camel-camp at Ta-hung-ch'üan, at the foot of the Nan-shan W. S. W. of Suchow, where JOHANSEN had gone already. We were a little cast down by the loss of HEDIN's old favourite, Hami, who had run away just as we were ready to leave the inn; this was the last we ever saw of the faithful beast. On this three days' trip we passed to the south of Chia-yü-kuan, the little town where the Imperial Highway leaves The Great Wall. We went through the latter where it comes to its western terminus at the canyon of the Pei-ta-ho, that is 40 m deep at this point.

From the camel-camp, where our animals were dying daily, BEXELL and I made a trip to the abandoned coal-mines at Ka-la-tze-ku in the Hei-shan, an isolated mountain north-west of Chia-yü-kuan. We parted on August 26th, and did not see each other again until over three years later. On my way back to the camel-camp I happened to fall in with BOHLIN in a little oasis on the north-eastern side of the Hei-shan, just where a branch of The Great Wall running north-west from Chia-yü-kuan comes to an end. Curiously enough, the parapet faces southward, i. e. towards the mountain, and not the plain to northward as one would expect. See Pl. 18 a. On the 27th I took leave of BOHLIN, whom I did not see again until our meeting in Peking in the spring of 1933.

[1] Illustration 39 in HÖRNER op. cit. gives an almost too favourable picture of this wretched hole.

The following day I reached the camel-camp, where I collected fifteen camels from the much reduced herd (no fewer than 31 had died). With this little caravan I proceeded to Suchow, accompanied by JOHANSEN, who was to help me equip it. On our arrival on August 30th I found a letter from HEDIN waiting for me, instructing me to go to Lop-nor together with HÖRNER. There I was to work at archaeology, while HÖRNER charted the new lake, in order to ensure for the expedition and for Sweden the priority of the discovery of its new position. This was an exceedingly tempting proposal, and I should certainly have joined forces with HÖRNER to set out farther westwards into the interior if I had not had the Edsen-gol with its certain finds waiting for me. Perhaps someone else might go there in the interim and harvest the fruits of my discoveries. And once arrived at Lop-nor I had no idea whether I should ever see my ruins on the Edsen-gol again. As soon as SVEN HEDIN received the news of my finds on the Edsen-gol he wired me *carte branche*, so that I was able to carry out my own program of work with a quiet conscience and without any Lop-nor excursion. At the same time he informed me that GEORG SÖDERBOM and MONTELL, together with the digger CHIN (for whom I had wired from Mao-mu), were on their way to the Edsen-gol by car.

The English lady missionaries in Suchow told us some quaint stories about ourselves that were circulating among the people. Apparently we had caught two golden ducks on the Edsen-gol, thanks to which we were able to see into the earth and mountains. And now some of us had gone into the Nan-shan to look for a lotus-flower of jade. But if we were to find this, the whole of Suchow would be destroyed by floods or other catastrophes. For the sake of the inhabitants of Suchow I devoutly hoped that HÖRNER would not find this remarkable lotus.

We managed to buy ten fine camels, and on September 7th I took leave of JOHANSEN and set off eastwards from Suchow. I spent the last evening enjoying all the gramophone records — from GRIEG's Concerto in A-minor, SCHUBERT's Unfinished Symphony and ATTERBERG's Dollar Symphony to HARRY LAUDER's »Oh, it's Nice to Get Up in the Morning . . .» — since the gramophone was to be left behind to lighten my baggage. The records were scratched from much using, and the instrument was full of Gobi's dust; but in our little sophisticated ears they made lovely music.

### *From Suchow to Mao-mu*

In the leafy and idyllic Suchow oasis the grain was threshed in the same way as in Sinkiang, namely, with a hexagonal stone roller that was drawn round and round by a cow or donkey over grain that had been spread out on the hard trampled ground. The chaff was afterwards separated off on a windy day, when the threshed grain was thrown up into the air with pitchforks.

After every five li we passed big massive clay towers, corresponding to our milestones. The crossing of the Ling-shui-ho, a tributary to the Pei-ta-ho, was a troublesome business, as both the bridges over the actual river-bed were destroyed. Near the eastern bank the water was dammed up by the roadway, that ought to have had several culverts; and in the mud here the camels were actually fighting for their lives. Fortunately, only one of them lost his foothold.

On September 10th I experienced the first night-frost, —1.6° at the village Shuang-ching-tze, where there was a little ruined town with very dilapidated walls, within which the ground was quite overgrown with small scrub.

On a Chinese burial place lay very badly made paper cash on the mounds and ashes of dung-fires. In a semi-circle round the graves the tops of the tall clumps of grass were bound together and joined one to another with twisted grass. Just near, the tops of several tussocks and tamarisks were bound together; some of the tussocks were brought together to form an arch.

The village Yen-chih was erected inside the remains of an ancient wall. MANNERHEIM was told that the ruin dated from the T'ang dynasty (*Across Asia*, p. 450). He spells the name Jentche. To the south of the village there are sand-dunes that are marked on STIELER's map, though they are placed much too far to the west.

Instead of following the main road as far as the Kanchow-ho and then striking off to the little town of Chen-i, I resolved to make a bee-line for the latter place. This took me, however, over a marsh without drainage, from which the villagers took their salt; and in one place where the salt-crust was moist and unable to bear more than the first animals, the camels all but lost their lives, sinking up to their bellies in the black, soupy clay. We struggled for two and a half hours to get the poor beasts to cross the worst passage of about ten meters, and were only successful when we spread tents and tarpaulins on the boggy mud and bound the eyes of the camels. This salt marsh was about 2 × 10 km, and extended from north-west to south-east. On the north side the ground rose gently, and there one saw towers belonging to The Great Wall. Arrived at the edge of the Kanchow-ho terrace, we found that The Great Wall followed the latter and consisted of a strong double rampart instead of a wall.

The Kanchow-ho, which is the right-hand and only water-carrying feeder of the Edsen-gol, had quite a volume of water and was 6—700 m across, so I hired high-wheeled carts to transport the loads over to the other side. See Pl. 17 b. True, I did see one caravan cross the river with the loads on the camels, but I did not want to risk any of my chests getting wet. On the low banks large flocks of wild geese were browsing, on their way south. After the crossing we passed quite near the little town of Chen-i, which The Great Wall encircles. Here I resumed my route-mapping by pacing, and perservered with this until I reached civilization again. The road traversed the low chain of the Ho-shan

on the east side of the river, and we spent the night among its hills at Sha-ching-tze. This place, with its single, abandoned house, lies on the boundary between the Kao-t'ai and Mao-mu districts, where a simple stone tablet on a just as simply carved stone tortoise carried a Chinese inscription.

Below the well the road was intersected by small dunes, that became larger the nearer one approached the river, where they attained quite a respectable height. The river was narrower than at Chen-i, and the bed was deeply sunk. Just as at the point where it enters these hills, there were several watch-towers also at its egress. The one I visited did not look especially ancient. On the northernmost hill on the yonder side of the river there was a round tower. The road then ran northwards between the river and the high sand to the east, and crossed a low, insignificant rampart that may possibly have been the Han Limes. On the west bank of the stream there was a little ruin (a fortification of some kind) that I was unfortunately unable to reach. The sun blazed down onto the desert, and it was a relief to arrive at the first little oasis Ta-ts'ao-wan (on STEIN's map Ta-tzu-wan), with its six or seven Chinese houses quite near the river. In the coolness of the evening the air was so clear that one saw every jagged peak in both the Nan-shan and the Pei-shan before the sun disappeared in a bright yellow glow.

Just to the north of the oasis there was a well-preserved watch-tower, in appearance reminding one of Hung-sha-tun (see p. 127).

Exactly opposite the rather larger oasis Shuang-sha-tun and at the edge of the river's highest terrace stood a tower of stamped clay with a shell of brick; and just to the north-east thereof extended an insignificant yardang area. Far in the north one glimpsed still another tower, whose vague outline hovered in the heat haze and at times disappeared from sight. Immediately to the south of this distant tower lay a knoll resembling a burial mound, in reality the remains of a low tower. The larger tower was $8 \times 8$ m and built of stamped clay with a shell of bricks; on the top was a look-out room. Between this and the oasis Chi-chi-chü there were some remains of a low rampart that may have been the Han Limes.

In this oasis we once more got melons (but what a difference between these scrubby little specimens and the huge Hami melons!), as well as something that was almost better: potatoes. Since my stay at the Belgian mission station in Man-hui in the beginning of January I had neither seen nor tasted this wonderful tuber.

The following day, September 16th, I reached Mao-mu, thus completing a round trip begun on July 8th. The road ran past a younger tower and the ruins of an older one, in the vicinity of which I found the low Han Limes rampart, that in this place was very distinct. About 5 li farther on it had been cut off by the river. Quite near the second oasis I passed on the day's march

stood a magnificent watch-tower of younger date. The Mao-mu oasis does not stretch nearly so far south as STEIN's map indicates. On its eastern side the Han Limes runs out into the gobi in a north-easterly direction.

In the afternoon I went into the town to see if there were any camels to be got, to post letters and to make arrangements for the baggage that had been left behind. From the merchant at whose place we had dumped the baggage I heard the glad news that GEORG had been here five days before in the car, together with his elder brother and the digger CHIN. The latter had gone on to Suchow in a cart to look for me. It was annoying that I had not travelled a little faster, in which case I might have got here in time to meet GEORG and MONTELL.

The next day WANG and I were invited to dinner by the magistrate. No particular time had been specified, but WANG was certain that our host ate at noon, so we presented ourselves, accordingly, on the stroke of twelve. But our host had no intention of eating at this hour. At least not on that day. But he began to rummage about among the supply of provisions he kept in the waiting-room, and with every tin he brought to light the very unshaven cook was given long and detailed instructions as to how each course was to be prepared. By the time I had sat and waited a couple of solid hours I was pretty fed up with the whole business, and was not looking forward to the dinner with any great enthusiasm. I should not be able to carry on any conversation worth mentioning, and Chinese dinners can be rather prolonged. As prolonged as the period of waiting before they are served. But at this juncture there came a message from the town-gate to say that a foreigner had arrived from Suchow. This must surely be GEORG's elder brother, GUS SÖDERBOM. The magistrate at once sent word that he should take part in the dinner. So I was to have company that I could converse with! I rubbed my hands inwardly. And now came surprise no. 2. In walked an immensely tall, bald, blond, blue-eyed fellow with a bent back and head on one side. Not GUS SÖDERBOM as I had supposed, but the third brother, JOE, whom I had never met, though I had heard much about him. Now conversation began to flow, and I was given a vast amount of valuable information (I refer the reader to MONTELL's report for an account of how JOE had turned up at the Edsen-gol). Meantime, JOE had been instructed to help me in the sequel. This was due to a misunderstanding, for I had not asked for a helper (though God knows one often enough had need of one); it was HÖRNER who had requested one. The dinner, meanwhile, *was* a success; and both our host, two Chinese guests and we two Swedes did every justice to the cook's efforts and the hot kao-liang brandy.

On September 19th we were caught up by CHIN, who was doubly welcome for the sake of the pile of letters he brought with him. I have never in my life received so many letters at one time from SVEN HEDIN, and I have never

received from *anyone* such inspiring letters. They made one turn somersaults of pure pleasure inside oneself!

We managed to hire eight camels for the transport of the collections to Tsondol direct. On September 23rd JOE left me, and set out in an ox-cart to Suchow to help the geologists, especially HÖRNER. This was the last I saw of him, and as things turned out he never travelled with HÖRNER.

### *Investigating the Han ruins along the Edsen-gol*

In the idyllic Mao-mu oasis lies the little ruined town of Chiu-ch'eng, whose walls I now measured. (See Fig. 12.) The interior is entirely taken up with fields. The town is probably not very ancient.

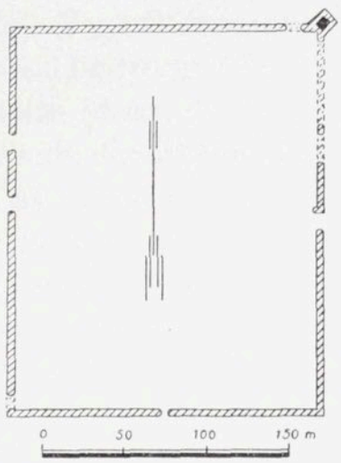


Fig. 12. Chiu-ch'eng, a ruined town in the Mao-mu oasis

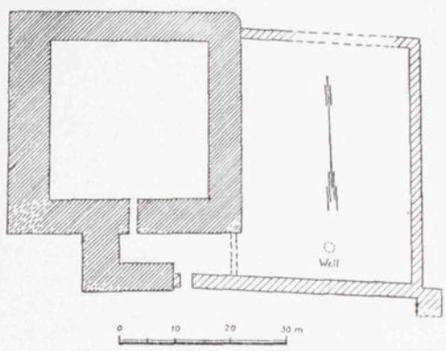


Fig. 13. Plan of the ruined fort Chiu-tun-tze in the Shuang-ch'eng-tze oasis on the Edsen-gol

I followed a north-easterly course and came across the Limes, here constituted by an unbroken earthen rampart with watch-tower mounds, the latter rather few and far between. I stopped at the sixth and started to excavate in this low brick tower, though without exposing any finds worth mentioning. A little water-carrying canal ran past here, and just inside the Limes rampart ran a double dyke, evidently an ancient main canal.

We were now due east of the oasis Shuang-ch'eng-tze, that is in reality nothing but the northernmost part of the oblong Mao-mu oasis. As the name implies, there are here two »ch'eng-tze», i. e. towns — in this case ruined towns. On the way to these ruins I followed the Limes rampart to the next tower, where curiously enough it bifurcated to form two branches of the same size; the one continued in a north-easterly direction, and was as straight as a die. The other ran N. N. E., intersecting the above-mentioned canal; and it was evident that the rampart was younger than the canal. At the point of intersection the canal had a branch running north, that was likewise overlaid by the rampart. Just

near a sheet of water this part of the rampart came to an end. Keeping due west, I soon reached the »ruined towns», i. e. the ruins Chiu-tun-tze and, at a distance of 500 m, Meng-han-ch'eng, situated only a few hundred meters away from the eastern bank of the Edsen-gol. Both are marked on STEIN's map; and STEIN has also a plan of the fort, to which I was able to add some det a ils. (Cf. Fig. 13 and *Innermost Asia*, p. 410.) It is not very big, but nonetheless rather impressive on account of the height of the walls, a matter of 7—8 m. The excavations yielded nothing of great interest; but the ground here is somewhat moist, so that no wooden objects were preserved.

The circumstance that the ruins of the town are divided into two parts with a wall running from east to west has led the local population to speak of a Chinese town and a Mongol town, for just at the dividing wall stands CH'IEN LUNG's little boundary stone between the Chinese settlement and Mongol country (see Pl. 19 a and b). The stone was erected in 1787, after the Torguts had been granted the Edsen-gol region as pasturing grounds. The question as to whether this rather insignificant stone, that it would not be very difficult to move, was originally placed on the present site can scarcely be decided now. In our days the boundary between the Chinese and the Torguts runs farther north, at Adag-tsaghan. The prospects of making finds were not bright, for the ground inside the town wall had been brought under cultivation. We did, however, find a little bronze buckle of a type common during the T'ang dynasty. The potsherds, on the other hand, were more reminiscent of Han time.

On September 27th I resumed my northward march and visited the Limes rampart just to the north of where I had last left it. The first 'tower-mound' I came across proved to belong not to the rampart, but to the canal mentioned above (farther south I had seen two similar mounds). At this point the canal branched off to the left, and it was impossible to discover the continuation of the main canal on the surface of the gobi. A couple of kilometers farther east the Limes rampart appeared, here double, and very indistinct. About 100 m inside the rampart there were two towers, both surrounded by a rectangular rampart. At both of these there were three heaps of slag.

I encamped at Adag-tsaghan with its little house, and spent the next day excavating in the nearest tower, of brick. I found two or three slats with inscriptions. A sparse row of towers ran north-east, following the Limes rampart as far as the fort Ulan-durbeljin.

On September 29th we moved to the big ruined fortress Taralingin-durbeljin or 'The Rectangle Near the Agricultural Settlement'. This impressive ruin has been visited by STEIN, whose plan of the ruin is incomplete. He dates it to the period between Han and T'ang. In the course of the excavation I gradually realized that I had here to do with two separate ruins from very different periods: first, what one might perhaps venture to call a town, from Han time,

and second, the actual fortress, that is contemporaneous with Khara-khoto. The older ruin measures 350 m along the fully preserved eastern side and is four times as long as the younger one, though of course not by any means so well preserved. It was, moreover, probably not built with the same stability as the latter in the first place. But one of its watch-towers, especially, is unexpectedly well preserved, being actually the highest tower on the Edsen-gol. Inscribed slats were excavated in a number of different localities in the Han town, but the wood was in many cases rotten, and the writing scarcely legible. At the base of the high tower, however, really excellently preserved documents on wood came to light. I have noted the following years: 102, 84, 83, 82 and 80 B. C.; there were probably more. In all, counting both fragments and slats with nearly effaced characters, 1,500 MSS were excavated here.

The last day of September I recollect as one of those crystal-clear mornings when visibility is without bounds; this was the result of the storm that had raged on the previous day. From the top of the wall of the fortress I could, with the alidade, take the bearing to the highest peak of the Richthofen Range, although the distance was nearly 200 km. I also took the bearings of all the towers and ruins in the field of vision, and there were not a few. In the evening the alpine wall of the Nan-shan was still more distinct than in the morning, though it now appeared in a pale pink shimmer like a fairy mountain.

A good locality a little way outside the walls of the fort yielded many wooden records. The layers containing the finds were well preserved, thanks to the fact that a little Buddhist shrine had been erected on top of what was either a completely dilapidated Han house or a rubbish heap where the »waste paper baskets» from the yamen, with their wooden slats, had been emptied. Of the temple there now remained only the floor and the plinth of an idol.

On the top of the wall of the fort I found a little scrap of paper and a bit of cloth with Hsi-hsia print. (Cf. Plate 19 c).

On October 7th I waded over the river; the water reached to my waist and was pretty chilly. On the other side of the stream I visited the big fortress Arven-tokhoi-durbeljin, that is probably considerably younger than Han, and perhaps even younger than Khara-khoto. I did not undertake any excavation here, where the ground in places has been washed clean by rain-water and is partly encrusted with salt. There are a few remnants of brick houses inside the walls, of which latter the river has eaten away one big corner. Not far from here there is a Han tower, and farther to the south-west lies the little fort Ta-wan (Dawan) that STEIN visited. Both this and the tower in the vicinity are from Han time. A little farther west I found a fragment of the Limes. STEIN is in error in letting the Limes come to an end on the west side of the river 19 km above Ulan-durbeljin, for it actually reaches, and encirles this small *castrum*.

October 8th turned out to be a remarkable day in more than one respect.

Finds were good — there was quite a stream of wooden slats with Chinese inscriptions together with other small objects; and my courier returned from Mao-mu with lots of letters, a sheep and vegetables — all wonderful things out in the desert! That evening I had just begun to reply to letters from SVEN HEDIN when the greatest event of the day occurred. MATE LAMA came running in all out of breath and shouted: »A car's coming! A car's coming!» I rushed out of the tent, and sure enough: far away to the north a bright beam was travelling towards us, that must belong to the head-lights of a car. It was not difficult to guess who would be in it. We went out with lanterns and electric torches to guide them. The car seemed to be on the other side of the broad river. I waded over in the dark, and at Arven-tokhoi-durbeljin I gave MONTELL, GEORG, DONGORA and NAIDANG the heartiest of welcomes. GEORG and I had not met since the beginning of November 1927. Now he was clad from head to foot in Mongol attire, and appeared even more impressively tall than usual; he certainly did justice to his Mongolian petname SHARA UNDUR (Tall Blond).[1] Together we waded over the river, leaving the car to stand where it was, while the friendly face of the full moon smiled on us and mirrored itself in the flowing water. Afterwards in my tent we celebrated the reunion in a way that I am sure none of us will ever forget.

The following day we gave ourselves up to the pleasures of good fellowship, to photography, to the making of plans, and to the distribution of the equipment they had brought for me and the other members of the Gobi group.

On their way to the Edsen-gol MONTELL and GEORG had taken a northerly route that had only recently begun to be used, and here for long stretches together they had followed an ancient, previously unknown frontier wall. Probably this was connected with the rampart that I had followed farther east. I therefore decided to return home along this route.

I packed into a chest the finds that they were to take with them in the car, after which we had a festive lunch with delicacies from sophisticated civilization.

That evening a sandstorm raged round the tents and the ancient walls of the ruins, and continued with unabated violence on October 10th. My postman set off for Suchow with a couple of chests of articles for the other members of the group; and in the middle of the day the motorists started northwards.

Desolation settled down again on the camp, and only the storm shrieked and whistled.

The following day I set off to the north-east to the fort Ulan-durbeljin 20 li distant, where on Midsummer's Eve I had made such good finds of MSS.

On either side of the river occasional small caravans passed, but never any big merchant caravan. From one of these we bought a supply of flour. On

[1] In a little book of adventure from eastern Mongolia entitled »The Valley of the Larks» ERIC PURDON lets GEORG figure under the name Big Blond.

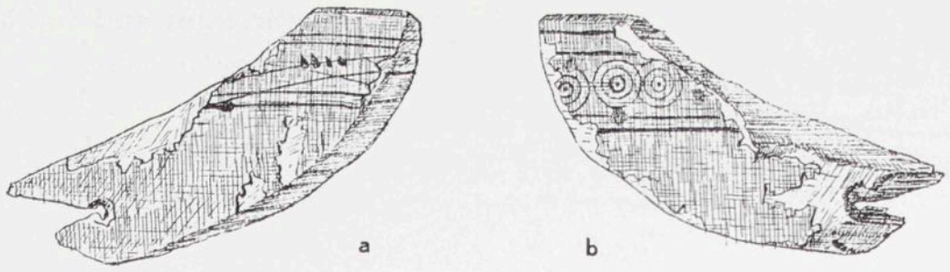


Fig. 14. Fragment from the rim of a lacquered wooden bowl with painted ornaments, found at Ulan-durbeljin. *a* the inside, *b* the outside. Natural size

one of the first days at Ulan-durbeljin we were unexpectedly visited by three soldiers. We could see them wading over the river, and I began to fear they might have been sent to stop my excavations. But they turned out to be Tungan customs ferrets on their way to The Western Temple, who had smelt booty when they saw my three tents. When they heard that my chests only contained stones (nothing could have been further from the truth just then; but the servants had found that this lie was most effective with customs officials) they cleared off after cadging cigarettes, but without stopping to drink tea. And we all heaved a sigh of relief.

Quite recently a band of Tungan robbers had been haunting the river, and I was a little uneasy about the collections I had sent down to Tsondol; but these gentlemen were said to have retired eastwards to Goitso to open a private customs station and bandit quarters there.

I remained at Ulan-durbeljin until October 25th, happy days full of work and yielding rich finds. MSS came streaming in the whole time. The average length of these wooden slats was 23 cm, breadth 1—3 cm, and thickness a couple of millimeters. In some exceptional cases the »stationary» consisted of polygonal pegs. One peg with square section was 50 cm in length and bore writing on three sides, with no fewer than 150 Chinese characters. Another »ordinary» slat had been over 50 cm in length and was now broken at both ends. I noted the following years on the slats: 86—82, 77, 69—64, 32, 31 and 25 B. C. Fragments of silk with inscriptions were also among the finds, as well as a few trifles of bronze and an almost complete lacquered bowl. Fragments of such bowls were in some cases ornamented (Fig. 14). One clay pot that stood firmly embedded in a kitchen floor measured 70 cm in diameter.

At a very short distance to the north was the mound of a ruined watch-tower, just at the gate in the Limes rampart, that reaches the river at this point. The excavation of this ruin also yielded quite a number of Chinese MSS on wood. This gate of entry is probably to be conceived as a customs and frontier station where passports would be inspected and dues exacted. The centre for this part of the Limes and the reason why the wall was taken so far north in a loop on

either side of the river was the »town» Taralingin-durbeljin and the agricultural settlement that doubtless lay along the river to the south of it.

The localities in this tract were by no means exhausted by me, and there are probably still many hundreds of MSS to be got there; but the autumn was advancing and I wanted to get farther down the river, where so many other places were waiting to be excavated. Moreover, the pasturage hereabouts was very meagre.

The water in the river began to sink so low that layers of salt were left on the mud-banks. The explanation of this was that the peasants in Mao-mu and the neighbouring oases had begun to put their fields under water.

The two first marches to the north led, as on the road to Suchow, along the eastern bank of the river, with its row of watch-towers. There was no wall between them. One of them had been half eroded away by the river, and certain gaps in the row indicated that some towers had disappeared entirely as a result of erosion. I pitched camp on the second day at the tower Tsaghan-tokhoi, a low mound that yielded a number of finds showing it to be of the same age as the other Han ruins. Between Ulan-durbeljin and this place 17 ruined towers were noted.

On October 28th the minimum temperature was already —10.4° C. I waded over the river, that was now not so deep, and made a map of some abandoned fields with irrigation canals a little to the north. The Chinese were planning to resume the cultivation of these fields, but I hoped nothing would come of this, so that the Mongols might keep their pasture ground in peace.

The following day we marched to the tower Tsakhortei, where I had encamped once before. The name signifies »With Flints», and sure enough, I actually found some flint objects nearby. It lies 7 km to the south-west of the hill Bayan-bogdo. The number of trees was increasing, though as yet there were only small narrow groves along the edges of the river. To the east extended absolutely sterile, black gobi, while in the west was the easternmost front of the Pei-shan. The very first day's excavation gave a magnificent result: CHIN dug up a roll of seventy-eight inscribed slats tied together with string, i. e. a whole book-roll of wood, something absolutely unique. As it transpired later, it was dated with periods corresponding to 93—95 A. D. Many of the previously found slats were doubtless originally bound together in the same way, though the strings had loosened or come off. We also discovered a couple of intact clay vessels, a Han coin and other trifles. An autumn storm soon interrupted the excavations, and the nights became still colder. Broken ice began to appear in the river in the mornings.

On November 1st we pushed on past Bayan-bogdo to the little fort Bagha-durbeljin, losing a second camel on the way. On this stretch I noted 12 watch-towers. STEIN's map, that is very good for this tract, has one. Inside the ruin,


a. Ch'ien Lung's boundary stone in Meng-han-ch'eng, Shuang-ch'eng-tze, near Mao-mu

b. Part of the town wall of Meng-han-ch'eng

c. Taralingin-durbeljin. The Edsen-gol in the background

a. Summer camp on the Edsen-gol, near Mao-mu

b. Winter landscape at Bug-tokhoi on the middle Edsen-gol. The eastern spurs of the Pei-shan in the background

c. Snaps and a fine antelope buck (*Gazella subgutturosa*)

just as in the similar fort Ta-wan, there was a layer of debris — bricks that had fallen down from the walls — about 3 m in thickness. Now, the bricks had been weathered down to packed clay. With my small equipment excavation was out of the question. The fort measured 20×20 m, and not 15×15 as STEIN gives it.[1]

To the north of Bagha-durbeljin there are long intervals between the towers. STEIN has one Sharakure-sanje (sanje = tsonch); I found one more on the stretch to Ikhe-durbeljin. I had missed this fort on my journey upstream in the summer, when we had been on the other side of the river. I was hoping that it would prove to be a good locality, of the same kind as Ulan-durbeljin; but I needed only to see the ruin to realize that it was considerably younger than the Han ruins, and probably contemporaneous with Khara-khoto. There was a good deal of drift sand heaped up both inside and around the low walls, and there were but few finds.

On November 6th I continued along the eastern side of the river, coming across a tower called Tsaghan-tsonch and a mound without name, and pitching camp at Bukhen-torei, where a long row of 'tower-mounds' pointed north-east, all hitherto unknown. I excavated the two mounds nearest the river, and some good finds came to light. My investigations were interrupted for a day by a furious north-west storm. Fortunately, I had had my tent stove transported from Tsondol, so the longer and chillier evenings in my white tent were quite cosy. In the vegetation regions of the Edsen-gol there is never any shortage of fuel. At the same time as I got my stove, my pack-animals were reinforced by three expedition camels that had been left at Tsondol since 1927; they were now in good condition.

On November 11th I left Bukhen-torei, after experiencing a morning temperature of —17° C. The caravan continued on the road along the river, while I followed the row of towers, mapping it as I went. The ruins are very uniform, and the towers must have been built all at the same time. I soon discovered also a low *agger* running in a straight line just east of the towers. This must be the counterpart to the »Tsondol Limes» on the other side of the river, though this eastern part of the Chü-yen »Great Wall» is situated on a somewhat more southerly latitude. The line appeared to stretch towards Boro-tsonch, i. e. the first tower at which I had found MSS. Cf. the map.

The following morning we divided into two groups for three days, during which time I was to map the continuation of the newly found Limes. The main group continued along the river for some distance to await my return. There are altogether twelve towers between the river and the isolated little hill Mouch, on whose top lay a thirteenth. To the east of this I found nine in all. The first lay in a depression that was overgrown with grass and reeds, and where there was — a customs station. The explanation was that the main caravan road

[1] STEIN has mixed up the meaning of the names Bagha- and Ikhe-durbeljin. *Bagha* signifies little and *ikhe* big. His transcription is *Bahan* and *Ekki-durœuljin*, in some places *dürüljin*.

from Pao-t'ou to Ku-ch'eng-tze, the so-called Winding Road, ran past here. I should scarcely think the toll-gatherers made much out of it, however; for all the traffic now goes on the northern road. Precisely in order to avoid these customs stations.

The ground was level, black gobi, with at intervals rather deep, sandy depressions where there was pasturage. The subsoil water must be rather near the surface here. There were also said to be Mongol camps hereabouts. The Limes seemed to keep more or less to the southern edge of the region where there was prospect of finding water — a reasonable and strategically correct placing. The easternmost towers that I visited were built of stone. When I returned to the river I found the camp pitched near a high, light tower of younger date, called, as are so many, Tsaghan-tsonch.

In the course of the march along the river I expected to reach the point where the dry river-bed that had once supplied Khara-khoto branched off. Dead jungle on the left indicated that the bed could not be far off. To the right of the road, meantime, I discovered a rather well- preserved watch-tower in an opening between high tamarisk cones. It was built of brick, and the construction showed it to be a Han tower; it had never been very high. After this we crossed three old canals; at the middle one I came across a low mound entirely covered with black gravel. It was the remains of a watch-tower resembling the Han towers to the west of Tsondol. To the west of the mound were traces of small fields. This landscape, with its dead trees and bushes — the former blown over by westerly gales — made a much more desolate impression than the completely sterile desert.

We crossed a distinct, narrow, dry stream-bed in a broad clay belt, and in the sequel the mapping showed it to have been none other than the Khara-khoto river. It must, however, be definitely stated that it never flowed just past the town as STEIN's map has it, and as KOZLOV presumably believes, but three kilometers to the north of the town. The actual point of bifurcation from the Edsen-gol I never visited (the place is said to be called Butu-börek, The Big Vegetation-clad Dune), but HÖRNER has been there.

A long way off in the north shone a yellow-white clay wall, and thither I bent my steps. This ruin was called Manin-tsaghane-baishing. It proved to be younger than Han, and had probably been a small farmstead or caravanserai. WANG, who had gone to the westward of my route, had seen two watch-towers there. It was presumably one of these that I found on a later mapping tour. Just N. N. W. of the big ruin there were a small house and a fort, probably contemporaneous with Khara-khoto. The fort, especially, was very picturesquely situated among tamarisk cones with drift sand between and at the edge of an eroded strip of clay, at one time in all probability a delta-arm of the Khara-khoto river. (See Pl. 21 b).

On November 17th we continued to the nearby fort Ulan-durbeljin, that I call

North Ulan-durbeljin, in order to distinguish it from the good locality of the same name to the south. This well-preserved brick fort, like the towers of Han time, was built with a layer of straw between every third row of bricks. There were no heaps of debris to speak of here, so there was no point in digging. But from two low watch-tower mounds forming a row running south-west we excavated a number of Han objects.

### *The ruins around Khara-khoto*

I now left the Han ruins for a time, to concentrate on the younger settlement. Between North Ulan-durbeljin and Khara-khoto lies the big ruin Adune-khure or Barun-khure (STEIN's Adona-kora). On the way thither I crossed old irrigation canals, both large and small. The ruin consisted of an outer and an inner rectangular wall, the former measuring about 200 × 200 m. The walls of stamped clay, reinforced with posts, were in a bad state; only a small part still stood at the original height. The inner square had a gate facing south, while the outer one had had gates with outworks facing east and west. (Pl. 18 b). STEIN's plan omits the west gate. The excavations here yielded nothing, but from the eroded surface of the ground I collected quite a number of bronze objects, coins, stone beads, potsherds and fragments of porcelain. Chronologically the finds were divided between the Sung and the Yüan dynasties; some of the coins were from Han and T'ang. From this camp I made several reconnoitring trips to extend the map and to look for more ruins. I found several, for the most part small houses from the Khara-khoto time, but also temples. Only a small number of them were previously known from KOZLOV's expedition. Again I found traces of old fields and canals; and also threshing rollers and millstones indicated that this had once been a rich agricultural settlement. In one place there was a short rampart running from north to south and reminding one of a Limes *agger;* but I do not believe it had any direct connection therewith.

On November 23rd I moved my quarters a little farther north to a temple ruin that I had discovered a few days earlier. Some Mongols called this Buddhist temple Khara-baishing. The no. of my camp here was F 31. Our excavations in this locality yielded a number of Chinese MSS on paper as well as Hsi-hsia prints; and on the surface of the ground there was plenty of Sung and Yuan porcelain. On the old fields in the vicinity lay threshing rollers and millstones cut out of a light, coarse-grained granite that must derive from rocks rather a long way from here.

On November 26th I went to the camp of the Mongol ARBDANG at Khund-ulung-börek near the Ontsein-gol, and on my way there I marked five more house-ruins on the map. Ontsein-gol, the easternmost delta-arm of the Edsen-gol, is completely dry the whole winter. It branches off from the main river opposite

Tsondolin-tsaghan; there were both ice and water in the main bed. We bought flour, had a big wash, and performed a number of necessary repairs.

On the last day of November I moved east to a region of tamarisk cones, bound dunes and eroded clay ground called Erego-khara-börek (The Confusing Vegetation-bound Dunes), where I had heard that there were plenty of ruins. I found a watch-tower of no high antiquity and another ruin before pitching camp at the remains of a stronghold called Dzun-khure or Akhten-khure. Only two of the four side-walls were still standing. It is possible that there had at one time been an inner quadrangle as at Adune-khure. In the surroundings there were numerous smaller ruins of farms, houses and forts more or less well preserved, but all from Khara-khoto time. The finds here comprised arrow-heads, coins, beads, divers small bronze ornaments and utensils, as well as potsherds and fragments of porcelain. In some places one saw no trace of any ruins, but the finds lay in patches comparable with the so-called *tatis* in Eastern Turkistan. It was impossible to decide whether these finds derived from houses or from graves. The ruins themselves were difficult to survey where they lay concealed among dunes and tamarisk thickets. Although I marked scores on my map-sheets there are probably still many that are yet to be discovered.

Erosion had continued without check ever since this agricultural region was abandoned 6—700 years ago. Both house ruins and the remains of irrigation canals frequently lay on top of small *yardangs*, some of them as much as 2 m in height. For this reason it was very difficult to determine the course of old river-beds and reconstruct the ancient hydrography. In places there were patches of the original surface of the ground, covered with black gravel; but for the most part the gravel had been washed away, and the underlying light yellow clay cut up into *yardangs*, giving the appearance of a river having flowed there. In other places the black gravel had been washed down into depressions that may have been river-beds.

In the beginning of December the minimum temperature went down to —22° C. (—7.6° F.); and on the 5th the ground was powdered with snow. The effect was lovely but short-lived.

Due east of Dzun-khure, at a distance of 8 km, I came across a temple ruin called Tsaghan-suburga, and here I pitched my camp no. F 33 (Cf. Plate 21 a). A few kilometers to the south of this spot I found what I took to be the Khara-khoto river. Coins from both Sung and Yüan were to be found around the temple, that had been Buddhistic, while among the dunes and the tamarisk thickets were any number of house ruins. All of these yielded finds of small bronze objects and fragments of porcelain. I spent my evenings fitting the latter together — a fascinating puzzle, and in this way I pieced together some nearly complete bowls and saucers. CHIN found a couple of graves in the vicinity with beads and an iron knife, and WANG discovered the ruins of a square fortification

a. Base of a *stupa* at the temple ruin Tsaghan-suburga, Erego-khara-börek, Edsen-gol

b. Small ruined fort between Khara-khoto and the Edsen-gol

a. The north-western corner of Khara-khoto with a *stupa* crowning the angle-tower

b. Interior of Khara-khoto from the crest of the eastern wall. The row of solid structures running diagonally across the picture possibly marks an older stage of the town wall

(Ruin 100) measuring 150×150 m some kilometers north of the camp. It was badly eroded and may have been from Han time (see below).

On the third day we had to return to the river, as our water supply had come to an end. This gave me the opportunity to recross this complicated region, and I found several small ruins and a larger one, a fort that was half overgrown by tamarisks. At Dunda-onts on the east side of the river the main part of my caravan was encamped; and here another caravan had arrived with collections from the geologists in the Suchow tract and two of our Mongols. From the latter I received a box of vegetables and eggs — a wonderful change from my diet of rice and mutton. Unfortunately, they had with them no post from the outer world, though there were letters from several of my comrades in the Suchow region.

On December 12th I set off on a new tour into Erego-khara-börek with a part of the caravan. We pitched our first camp at Ruin 100, the »town» to the north of the temple ruin Tsaghan-suburga. On the way there I came across six house ruins. The march took us at first through a belt of dunes that provided pretty heavy going, and then through densely scattered tamarisk cones — a landscape that it is anything but pleasant to make a route-map in. The dunes undoubtedly covered a good many ancient remains.

In the interior of the badly eroded fort we made some trial excavations, but without much success. In the biting cold, moreover, sedentary work was not much of a catch. Accordingly, both the collectors and I went out hunting for new localities, finding quite a number of house remains and old fields; and around Ruin 100 there were heaps of *tati*-finds, many of them dating from the Han dynasty. (Plate 16 b). Here we also found a couple of simple Ordos bronzes, the only ones from the Edsen-gol.

I was now in what I have called »the critical region» in which the town Chü-yen ought to be found. Unfortunately, the country to the north-east as well as to the east and north was covered with rather large sand-dunes; and above these one saw no ruins of any size sticking up. If the town was situated farther to the north-east, therefore, it must be covered with sand, and could not be excavated without a big staff of diggers. Another circumstance in the light of which it was improbable that it would contain any finds of perishable material such as wood or textiles was this: the level is so low that the moisture of the ground would be quite sufficient to destroy such objects. It must be remembered that this was an old delta, whose terminal lake could not be so very many miles away. The town Chü-yen may of course also have been situated higher up in the former delta. Theoretically it is not out of the question that Khara-khoto was built on the site of the Han town; but there are no finds to indicate that such was the case. It is also conceivable that Aduna-khure marks the site, for here there are a few Han coins. If this Ruin 100 at which I had my camp F 35 were not so

small, one might suspect that it was the town Chü-yen. But it is perhaps not entirely beyond the bounds of possibility that there never existed a *town* Chü-yen, but only a *district* with that name. Though on the other hand, the Chinese community is built up on the basis of a ruling bureaucracy, and the rulers must have some centre from which to rule.

On December 18th we moved west again, in order to investigate more closely the ruined fort I had discovered on December 9th. This, too, had no name, so I refer to it as The Ruin at Camp F 36. There is a dried up river-bed in the vicinity called the Challain-gol. The interior of the fort is largely covered with drift sand, and the only finds I made were potsherds with very varying ornamentation. They are probably all to be referred to the Han dynasty.

From this camp I also went on mapping tours, and in the course of one of these I discovered the watch-tower At-tsonch and a couple of other ruins in a row to the north.

It was with freezing fingers and toes and a very cold nose that I left this thankless ruin to its fate, to find my way back to the river and pitch my Christmas camp at ARBDANG's new camping-ground at Ikher-khashia. The minimum temperature had been —26.9°. Under some poplars GEORG's yurt was erected and fitted up; and in this beautifully warm, cosy and roomy dwelling I celebrated Christmas in my solitude. BUYAN JIRGAL, the cook, did his level best; and it was really quite astonishing to see what he could produce in the way of Christmas fare from the sheep and the ox we slaughtered. As a link with the memorable first desert Christmas together with SVEN HEDIN, HUMMEL and NORIN at Sebestei out in the Black Gobi I had the Mongol YALTSANG, an Alakshan lama who had been our guide at that time, and who now came to visit me.

### *The Han ruin Mu-durbeljin*

Making fair copies of map-sheets, reading, letter-writing, pheasant-hunting and mapping tours in the beautiful delta of the river were the pursuits with which the Christmas days were filled. The only sign of winter was the covering of ice on the main river. On the 27th I moved out to the little ruined fort Mu-durbeljin, i. e. no. 17 in the so-called Tsondol Limes.

At one of the yurts at Tsondol just to the south of the old meteorological station fluttered a fragment of a Swedish flag from a pole! This was presumably the last wind-torn relic of the proud banner that had waved over the meteorological station for two years from October 1927. For the Mongol neighbour it had probably become a sacred and luck-bringing symbol.

The insignificant ruin Mu-durbeljin turned out to be the richest locality of all during my excavating campaign at the Edsen-gol; its buried rubbish heaps yielded about 4,000 wooden slats with Chinese writing (this, of course, includes many

fragments), all sorts of broken utensils, fragments of silk, bronze objects and potsherds. The most interesting find was undoubtedly the complete writing-brush that was brought to light, the oldest of its kind in China. (Fig. 15). Many of the MSS were dated. Among these dates I noted the following: B. C. (127?), 81, 74, 69, 66, 59, 56, 54, 53, 47, 44, 42, 38, 37, 36, 34, 33, 23, 21, 20, 12, 11, 3 and 2; and A. D. 10, 24 and 25. Thus on an average every 4th year is covered, and as doubtless many records were packed before being examined in detail, one may safely assume that the fort was occupied uninterruptedly at least between 81 B. C. and 25 A. D.

The work of excavation was often hindered by the hard north-western wind, but the cold was not so severe; and as we had the tents quite near the localities it was easy enough to step inside and warm one's fingers at the *argal* fire. For the most part the weather was sunny.

I made a couple of mapping tours in the gobi to the west of the main river in order to localize some of the towers that were said to stretch in a straggling row more or less from north-east to south-west between the Narin-köl and the Mören-gol. According to what I heard, their names from north to south are Tsaghan-tsonch (or Tsonchtei-khyl), Andogen-tsonch (or Andone-tsonch), Sain-tsonch, Mu-tsonch and Ulan-tsonch. I visited Andogen-tsonch and Sain-tsonch, and noted that they were younger than Han.[1] Together with Dor-tsaghan-tsonch they probably constituted outposts to Khara-khoto. On the other side of the Mören-gol there was supposed to be another row of towers; but I was unable to get any information as to how far it stretched.[2] From Mu-durbeljin, Andogen-tsonch lies 12 km to the north-west, while Sain-tsonch lies about the same distance W. N. W.

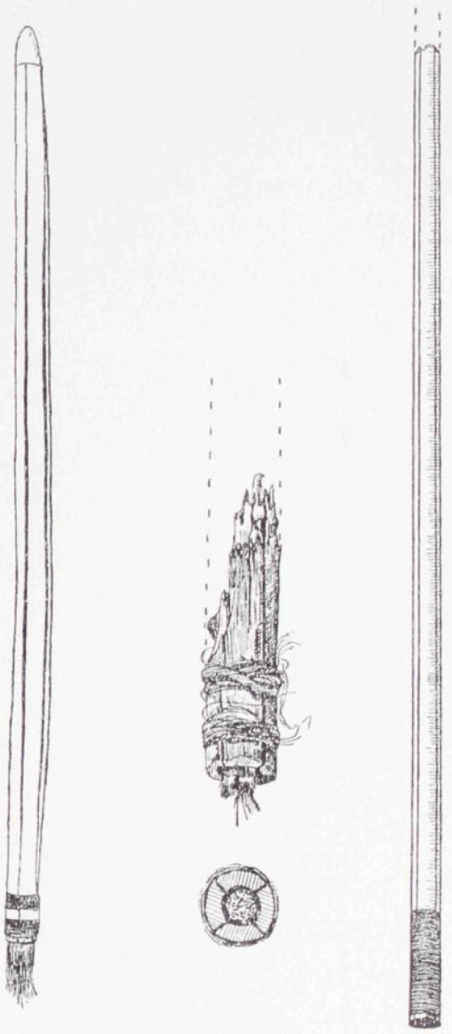

Fig. 15. Writing brushes. The left one is a complete specimen from Mu-durbeljin, the middle one a fragment from a nearby tower, the right one a fragment from Bukhen-torei. Size 2/3

On the night of January 6th my ink-bottle froze and burst; and two days later the minimum temperature was down to —33.2° (—27.2° F.). On the 12th I was cheered by the arrival of a little mail from Mao-mu, with amongst other things

[1] In 1934 I had the opportunity of visiting also Ulan-tsonch, that is situated beside the Mören-gol about 20 li to the north of the Western Temple.

[2] The only confirmation of the existence of this row that I afterwards found was in Sir ERIC TEICHMAN's excellent »Journey to Turkistan», London 1937, p. 63, where a ruin to the west of the Mören-gol is mentioned, though without any closer description.

Professor LESSING's list of sources for the history of the Edsen-gol region in the Chinese annals.

By January 25th I had not the phlegm to remain in the same place any longer, even if a prolonged stay would have resulted in further MS-finds. It seemed to me that I had enough to illustrate the history of the place, and all of us were longing to get on the move again. I first returned to the yurt amongst the poplars, arranged the final packing in camel-chests of the collections from Mu-durbeljin and bought provisions.

On a mapping tour along the river-arm Sair-torein-gol, that runs just west of Ikher-khashia, I continued to the north as far as its course can be distinguished, a matter of about 11 li (it branches off to the left from the Ontsein-gol). After this I turned west, and presently came to a water-carrying river, the Sukhain-gol, an arm running parallel with the Dunda-gol, that it joins after about 15 km. The vegetation on its eastern side was so dense that I had to creep through. The ice-covered river, that was not marked on any map, was 50 m across. Between this and the Dunda-gol there is said to be also a Narin-gol. On the western side of the Sukhain-gol there was a white *stupa*, that was also called Tsaghan-suburga. Here there were said to be the ruins of a lama temple. After the destruction of Kukchen-sume (see p. 118) by the Mohammedans in the 1860's the temple was moved here. The prince lived somewhere in the neighbourhood, and it was here that STEIN visited him. (There is a picture of the prince in »Innermost Asia», Fig. 227). Later, the temple was moved to its present site between the Dunda-gol and the Oboin-gol near the prince's summer residence.

### *Khara-khoto, the Dead City*

For some time I was now going to let the 2,000 year old Han ruins rest in peace and devote myself to the much younger relics of Sung and Yüan time. Thus on January 29th we pushed on to Khara-khoto. In the hazy atmosphere one might easily have taken the ruins for a living town. It was only at close quarters that one distinguished the defects in the imposing walls, with the sand-dunes reaching up to their tops. The effect of the whole was fantastically beautiful: the walls took on a faintly reddish hue from the few sunbeams that came straggling through the clouds; the dunes were golden brown, and the sky above showed light blue patches. (Plate 22 a).

We pitched camp near the eastern wall, among the low remains of houses outside the town-gate. My intention in visiting Khara-khoto was not to collect the crumbs that my predecessors, KOZLOV, STEIN and LANGDON WARNER, had left, but to try and find out whether Khara-khoto had any older remains to show, i. e. relics of T'ang or Han time. From the top of the east wall it seemed to me that I could distinguish a number of details that indicated the possibility of the

town's originally having covered an area comprising only a quarter of its present extent. An exact measurement of the walls seemed to lend this theory a certain support. STEIN's plan, certainly, is very detailed; yet it is not so exact as to include an insignificant »knee» in the east and north walls. According to the plan I draw with the aid of plane-table and alidade these »knees» both occur at the same distance from the north-eastern corner, and as some solid structures forming a line perpendicular to one of the »knees» can be explained as remains of an older town wall, it seems plausible that there once was a smaller Khara-khoto, a square town wall in the north-eastern corner of the present town. The north and east walls of this hypothetical town are now buried in the present walls, but the solid structures seen on Pl. 22 b may be the remains of the south wall. If the present Khara-khoto measures about 380×450 m, the »old Khara-khoto» was a square with a side of only 250 m.

From the Chinese sources there seems to have existed a town in this district during the T'ang dynasty. Now the finds dating from the T'ang dynasty are rather few in Khara-khoto (a mirror fragment, some coins, and possibly some ceramics); but it is at least possible that this »old Khara-khoto» is of this age. On the other hand, I do not think that it has anything to do with the Chü-yen of Han times, as there is only one object from Khara-khoto dating from that time (a Pan-liang coin).

The present Khara-khoto dates from the time of the Tanguts or Hsi-hsia, and apparently ceased to exist at the end of the Yüan dynasty.

Besides many small objects of various materials, we excavated quite a collection of Chinese manuscripts on paper, and also fragments of Tibetan, Uighur, Mongolian and Hsi-hsia prints and MSS.[1]

Literally, the name Khara-khoto means »The Black City», and this is commonly the version given. I have a feeling, however, that the meaning is another, namely »The Dead City», or simply »The Ruined City».

This place was a centre for settlement during the latter part of the Sung dynasty and the whole of the Yuan dynasty. It was conquered by CHINGGHIS KHAN in 1226, though it seems to have survived until the end of the Mongol dynasty. It is very likely that the final ruin of the town and the surrounding agricultural district was due to shortage of water. The arm of the Edsen-gol that watered these tracts must have filled with mud and dried up, while the water chose another of the many arms of the delta. This would thus be an example of a displacement of a river analogous with what happened to the lower Tarim in Lou-lan time, a phenomenon that we in our time were able to witness, though in the reverse order to then. The risk of such changes in the course of a river is probably always great

[1] As all of these were left to the Chinese in Peking, where nobody showed any interest in such recent records, I never got an idea of the contents. There were also a couple of specimens of Yuan dynasty paper money.

in flat delta regions with a river carrying much silt. If the irrigation canals are not kept free from silt, e. g. owing to insufficient labour, the process may be hastened, with catastrophic results for the surrounding fields. Complications due to war may thus be the indirect causes of the abandonment of such an ancient cultivated tract as that around Khara-khoto.

After a week at Khara-khoto I discontinued the excavations for the time and moved to a well called Mamin-usu, 15 li S. S. E. in one of the depressions with trees, tamarisk thickets and other good camel-pasturage that are so characteristic of the surrounding country here. I was caught up at this well by one of our Mongols with a packet of mail, including a couple of letters from the chief. From one of these I learned that the courier that had been promised us long since, to bring a number of items for our equipment, had left Kuei-hua on November 28th. But why, in this case, had he not arrived long ago?

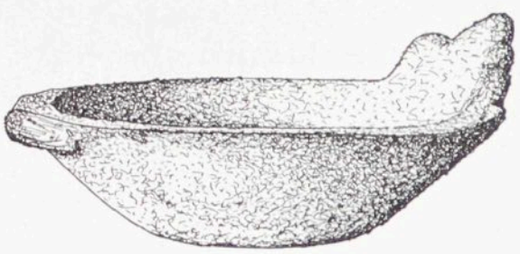

Fig. 16. Iron vessel (lamp?) from a temple ruin E. S. E. of Khara-khoto. Half size

CHIN had time to make a trial excavation in the tower Moro-tsonch on the road from Boro-tsonch to Khara-khoto, finding, inter alia, an inscribed slat dated 37 B. C. as well as three similar round spiked wheel-traps.[1] WANG, meantime, found a little house ruin nearer the camp, that appeared to be from Han time.

After a spell of spring warmth the winter returned on February 8th with —25°, and the minimum temperature remained under —20° until the 13th. I paid a visit to Khuren-tsonch, that was clearly visible a long way off. This tower is built of sandstone slabs with layers of reeds in between. It was rather well preserved, and lay on the edge of the terrace quite near the boundary between the dissected gobi plateau and the vegetation and dune region of Erego-khara-börek. In among the tamarisk jungle I discovered from the tower a large number of house ruins. I was also able to take the bearings to several towers in the direction of Boro-tsonch. I set out for the house remains (that may have bene identical with the southernmost ruins visited by STEIN in these parts; though it is difficult to determine whether they were the same or not, since STEIN has not the splendid *point de repère* constituted by Khuren-tsonch). Besides the houses there were a little fort, several *suburgas* and at least one temple. There were also traces of fields. This field of ruins seemed to continue in the north, and was one of the biggest I have seen. Perhaps the centre had been a large temple complex with a number of small houses. An iron vessel (lamp?) from here is depicted on Fig. 16.

On February 9th I sent the diggers back to Khara-khoto, while with a light caravan I myself set off to the south-east to map the scattered towers between

[1] See »Hyllningsskrift till Sven Hedin», p. 623, fig. 3.

Khara-khoto and Boro-tsonch, and to connect up with the row of towers that from Bukhen-torei via Mouch stretches towards Boro-tsonch. I inserted altogether nine towers on the map; several of them were built of stone. They are not in any definite order, but rather scattered. In one of them I found a couple of inscribed slats, that I unfortunately lost on the way back to Khara-khoto. My return to the latter place took me northwards over depressions resembling river-beds. These were from 10 to 13 m deep, and filled with vegetation; but they had nothing to do with old rivers, for they stopped blind in the south.

When I got back to the ruined town I found a packet of mail awaiting me; but my pleasure in this agreeable surprise was quite destroyed by the news that JOE SÖDERBOM had died near Mao-mu at Ying-p'an on his way from Suchow to join me.

During my absence quite a number of MSS on paper had been brought to light; the majority were Chinese, but there was also one Persian fragment.

A mapping tour to the south-west revealed that what STEIN called the dried-up Khara-khoto River was no river-bed at all. The town had never, as he opined, lain between two river-arms.

Large areas around the town constituted veritable happy hunting-grounds for surface-finds — small bronze objects and sherds of porcelain and pottery — typical *tatis*, in fact. To judge from all the waste material from casting operations, many of the bronze objects must have been cast locally.

On February 14th the excavations were brought to an end, and after packing up all the finds we set off again to the living river the next day.

On the way to my yurt at ARBDANG's camp we found some ruins that had thitherto escaped notice, including a ruined *suburga* where WANG discovered some Hsi-hsia MSS and a number of Chinese coins from the Yuan dynasty.

## *The Mongolian New Year*

On February 16th the long awaited courier from distant Peking, the Mongol NAIDANG, turned up at last. As he had taken such an unconscionable time, courier was perhaps not exactly the aptest title for him; but his speed compared favourably, nevertheless, with that of the Chinese telegraph in Kansu, for it was often quicker to send a message with camels than by telegraph. Meantime, however, I had cause to be satisfied with NAIDANG's consignment — he had four whole chests full. The most valuable items, as far as my researches were concerned, were KOZLOV's book about Khara-khoto in German translation and his paper in The Geographical Journal. There were also plenty of newspapers and magazines; but the main part of the consignment consisted of instruments for HÖRNER. Now I no longer needed to read all the advertisements in the old

newspapers I had left, or to sit poring over the more or less pithy maxims on the tinned food labels. I had real reading matter for weeks ahead.

I had thought that the Mongolian New Year began on February 17th, but it transpired that their last month — »the candle month» as it was called by both Mongols and Chinese alike — had only 29 days, so that the above-mentioned day was dateless. The year was »turning», as WANG said. My Mongols came into the yurt in their best clothes before breakfast, went through their ceremonies of greeting with khadaks and snuff bottles, and wished me a Happy New Year. BUYAN JIRGAL then asked me whether I could possibly eat Mongolian food. »Yes, with all my heart!» I replied; whereupon I was regaled with a boiled side of mutton, *pilmén* and a couple of minor courses, with which Chinese brandy was served. Everything tasted excellent.

After this the celebration of the New Year proceeded with visit and counter-visit, and mirth and merriment were the order of the day, in the course of which I became good friends with a number of Torguts and Khalkha Mongols of all ages.

During the period February 18th—23rd the minimum temperature — with one intermission — remained below —25° C. On the 23rd I made a tour to some house ruins with WANG. On my return I found ARBDANG in my yurt, all dressed up and with magnificently silver-mounted case for knife and chopsticks as well as tinder and flint pouch. But he was not alone. In my chair sat a shaggy bearded man whom I was quite at a loss to place until the beard emitted a greeting and revealed the owner as — JOHANSEN. I had not been so astonished for many a long day! I had not at all expected him, and I simply did not recognize The Gentleman of Mongolia with this luxuriant beard. Actually, he had gone from Suchow to Ying-p'an in order to deal with the deceased JOE's effects; but as it was no more than 250 km to my headquarters he decided to pay me a visit — an unusually bright idea. In this way I not only heard all the latest news about my other comrades in the field, but I also enjoyed extremely pleasant company for a couple of days. As it turned out to be difficult to get the means of transport eastwards for the geologists' and my collections, for which my own camels were too few, it was a relief to have JOHANSEN at hand as interpreter and experienced camel expert.

On the same day that JOHANSEN left — February 27th — the Ontsein-gol filled with water. And on March 1st I went to Wayen-torei, whence I intended to set out on my homeward march eastwards as soon as the question of the transport of the collections had been solved, and as soon as I had concluded my excavations in the vicinity of this my last station in the blessed Edsen-gol region. HÖRNER and I had encamped here in the spring. (Little did I suspect that I should be returning there for a 3rd time — in 1933.) The Ontsein-gol is the collective name for the easternmost delta arms. At Wayen-torei it is called the Shara-bulungin-gol (roughly: The River of the Yellow Bend); and in another place it

is referred to as the Munyngin-gol (KOZLOV's name for it). There was no pasturage at Wayen-torei to speak of, and the water had not yet reached thus far. Late winter and spring were difficult times for the Mongols at the Edsen-gol, for there was practically no pasturage anywhere.

### *My last Han ruin on the Edsen-gol*

In the little brick house among the high dunes just to the east of the river (see p. 117) we now made some interesting finds, e. g. a Chinese knife of iron stuck in a leather sheath. Despite the 2,000 years it had lain there, there was not a single speck of rust. Striking proof of the constant aridity of the climate. There was also a water-sack of leather, though this was of course badly shrivelled. A further item was a complete crossbow arrow with bronze head and reed shaft. To my surprise, there was among the MSS on wood also a MS on paper. This is perhaps the oldest paper find in the world.[1]

Silk rags were rather common in most of the Han ruins, but they were too small or fragmentary to give any idea as to the kind of robe they derived from. The majority of them were of plain weave and single-coloured. At Wayen-torei, however, I found one of the few polychrome pieces of silk that I brought home. This has a pattern of quite another design than those of the Han silks so far known.

In the same ruin we also recovered an almost complete rain-coat made of twisted grass strings. This extraordinary garment has its closest parallels, it seems, amongst rain-coats used by the Ainus.

### *Résumé of the archaeological work at the Edsen-gol*

During the stone age, settlement seems to have been confined to the lakes. The richest finding-places were those on the northern shore of Sogho-nor and at the well Shini-usu between Sogho-nor and Ghashun-nor. Apart from these, however, only a very small number of sites were found, and their yield was extremely meagre. In the region Erego-khara-börek a number of stray finds of stone age character were collected, such as axes, semi-lunar or rectangular stone knives with two holes, and a single painted potsherd of Ma-chang type. If one compares the Edsen-gol region with more easterly tracts of Inner Mongolia it appears as a rather poor stone age province.

During the Han dynasty (206 B. C. — 220 A. D.) the Emperor WU-TI began in the last part of the second century B. C. to fortify the Edsen-gol region, which

[1] It afterwards disappeared among all the other things that the Chinese took charge of in Peking, and as I never managed to find out which periods of the Han dynasty my MSS on wood from this locality derived I cannot now state whether this paper dated from the beginning of the 2nd century — as I presume it did — or whether it was younger.

entered as an important part of the tremendous defences against the Huns that extended past Tun-huang. The Great Wall of the Han emperors stretched, as regards the Edsen-gol area, on the northern side of the Pei-ta-ho and embraced in a loop Mao-mu, Shuang-ch'eng-tze, Taralingin-durbeljin and Ulan-durbeljin, turning southwards again on the eastern side of the river. From the northern apex of this loop of wall there extends northwards along the eastern bank of the river a row of 32 watch-towers and one fort. These are sparsely scattered, and the intervals between the ruins are very uneven. Many towers have probably been eroded away by the river; and this partly explains the uneven intervals.

From Bukhen-torei there extends in the direction of Boro-tsonch a row of 28 towers at closer intervals that in its western part is followed by a low rampart. A corresponding rampart with towers that I have referred to as the Tsondol Limes is situated on the western side of the main river, to meet attacks from the west, but begins considerably lower down the stream. These two lines of defence must have been connected, to be effective, for the river alone could scarcely be counted on as a sufficient natural defence. The northern continuation of this Tsondol Limes probably turned off in an easterly direction via Tsaghan-tsonch towards Wayen-torei, though all traces of this have been obliterated by the jungle of vegetation in the delta. At the Han ruin at Wayen-torei, that was rich in finds, there are indistinct traces of an east-westerly rampart.

If the defence-line was to be complete there ought to have been a wall along the whole of the northern side of the ancient lake as well as on its eastern side. It was, perhaps, planned to build these parts of the wall and thus to surround the Chü-yen district with a rhombic enclosure. The only known traces of ancient structures to the north and east of the old lake are two watch-towers.

The towers were used as look-out posts, and signals were sent between them by means of fires at night and smoke in the daytime. At nearly all the towers there are the remains of quarters for the garrison.

As I hope within a not too distant future to be able to issue a monograph on the Han settlement of the Edsen-gol area with detail maps, I have not considered it necessary to give a map here, although this would have considerably facilitated the understanding of the above résumé.

The contents of the excavated MSS seem to be of a predominantly military nature, and to deal with administration and organization. The garrisons probably consisted partly of prisoners-of-war from the campaigns of the Chinese against the northern barbarians. The name Chü-yen is perhaps a Chinese phonetic version of a Hunnish name. Many of the wooden records are very carelessly written by recorders who evidently scarcely mastered the art of writing, and are therefore difficult to interpret. Although I have no list of the different dates, I seem to remember that the oldest MSS date from the end of the second century B. C. and the youngest from the beginning of the second century A. D., but that the

greater part fall within the period 100 B. C. — 100 A. D. Concerning the strange vicissitudes of these finds after I had taken them to Peking, the reader is referred to »History» Part III, pp. 306 f.

The fragments of silk collected are to be described by Dr VIVI SYLWAN, who will publish them together with HEDIN's and my silk finds from the burial places in the Lop-nor Desert.

How conditions at the Edsen-gol developed immediately after the withdrawal of the Han garrisons is not clear; but some centuries later, during the T'ang dynasty, there are further finds from here, and after this the settlement seems to continue uninterruptedly until the end of the Yuan dynasty. As in the Han period, this later settlement has its centre on the eastern side of the lower part of the delta along a now dried-up arm of the river. If it has not been possible to identify with certainty the main site of the Han settlement, the presumed town Chü-yen, the centre for the settlement of the Sung and Yuan period is, on the other hand, definitely Khara-khoto. The finds from here and from the many farmsteads and temples round about, of which there are more than 200, are no show-pieces, but they give a good picture of everyday life during the period when the Edsen-gol region belonged to the Tangut or Hsi-hsia kingdom, whose capital was Ning-hsia. The rather rich material of sherds of glazed wares and of blue-white porcelain may perhaps afford a good deal of interesting information. It is not entirely out of the question that we have here to do with blue-white porcelain dating from the Yuan dynasty.

### *The last days on the Edsen-gol*

In the beginning of March one began to feel spring in the air, and on the 4th Wayen-torei was reached by the flood-water. The lowest lying pools were filled in a trice; and in the evening the moon was reflected in glittering waves where the day before there had only been a cracked and dry clay surface.

The prince consented, after some demurring, to allow his subjects to hire out camels to me (on condition that they were led by NAIDANG — that was rather a curious stipulation considering that he was not a Torgut); and I was able to begin my preparations for leaving the Edsen-gol.

The first lama ducks came quacking through last year's reeds during the first week in March, and the pools of water became larger and larger. As I learned from KOZLOV's book, his expedition had come to Sogho-nor 23 years previously on March 11th, when they had found the lake swarming with innumerable birds of passage. This year, however, only the lama ducks had arrived. But the weather was stormy during the greater part of my stay here on the boundary between the desert and the oasis.

Since the ground had had time to absorb a good part of the moisture from the river, the level of the water had actually sunk.

BATU and NAIDANG were not able to hire more than 10 camels, although the Torgut officials had helped them in every way possible. No-one was willing to hire out his camels for the desert crossing at this time of spring, just when the animals are at their weakest. I was therefore obliged finally to purchase the 11 camels that I needed if I was to set off with the collections. And as I had not sufficient money I had to buy them on credit.

A caravan of Khalkha Mongols passed to the south. It consisted of about forty persons, including children, who were fleeing from their old pasturages at Lamagegen in Outer Mongolia to seek refuge at the Edsen-gol. They had a number of camels without loads, that they drove before them in a herd.

On March 18th the level of the water rose still further; and by this time wild geese, ducks and a number of other aquatic birds had put in an appearance. And on the sun-warmed sides of the dunes insects were beginning to ply their wings.

A small caravan with cloths, tea and sugar from Kuei-hua arrived on March 19th, encamping near my tent, that seemed like to be entirely surrounded by water from the river pretty soon. And the following day the worst sandstorm so far that spring broke loose. The next night we had the first temperature above zero on the minimum thermometer. The storm did not abate until after two and a half days; and a couple of days later another one, that also lasted for two days, was raging. This was followed by a cold snap with —14.8° during the night. This last storm prevented the arrival of my new camels, and my caravan was not complete before the 26th. In all, I had 10 hired camels and 27 of my own. The two guides were riding animals belonging to themselves. Seven had been bought on credit from the Gegen, who handed over the camels without further parley and without fixing any price — that could be arranged by GEORG later. Four were bought from NAIDANG, and as he was coming with us he was paid personally. The 10 hired animals belonged to six different families, and had cost me 23 dollars apiece.

### *Eastwards along The Northern Road*

On March 27th I was finally able to set off on my homeward march through the Gobi along the new northern road. This route had been taken by ZIMMERMANN and by GEORG on the occasion of their return from the Edsen-gol in 1929 and 1930; and MONTELL and GEORG had driven that way in the car in the autumn. But the routes did not entirely coincide.[1] As the route has thus been described I will only mention the camping sites and give some account of those parts of my journey where I followed other paths than the others, and of the

[1] Later, HÖRNER and CHEN took exactly the same road as I (they had my maps); and during the motor-expedition of 1933—35 we followed certain parts of it (see History Vol. III, pp. 18—28, and for greater detail HEDIN's *Silk Road*).

archaeological observations I made. The entire route was mapped by pacing. The first camp was at Eren-tsonchin-nuru, the second at Kuku-tologoi and the third at Holein-gung. Here we parted from the caravan with the collections; under BATU and NAIDANG it went on ahead. The next camp was at Yaghan-khairkhan, the most magnificent mountain on the whole route, with a striking profile that could vie with that of the »Four-peaker» at Ukh-tokhoi. A nameless camp between Yaghan and Deresun-khuduk offered the first camel pasturage since the Edsen-gol. True, the animals were fed with beans every evening, but this was not sufficient, they must have other fodder in their bellies.

At Deresun-khuduk were the first human dwellings east of the Edsen-gol: five yurts belonging to a Chinese firm. On April 1st we pitched camp F 50 about one kilometer from the well Bilcher. Here we met a Chinese caravan of 40 camels with loads of tea, cloths etc. on the way to the Edsen-gol. The next day we passed the well Nogon-orbok — whose water, like that at Bilcher, was bitter — and turned off to the left from the road to look for a place with saxaule pasturage at Tsaghan-obo, where there was also a well with salty water. The Mongols wanted to intercalate a rest-day here, as the pasturage provided the first decent feeding the camels had had since leaving the Edsen-gol, in addition to which their feet needed seeing to. The sharp-edged desert gravel we had been going over the last few days had made their pads tender, and a couple of them even had sores. The camels with sore feet were accordingly thrown on their sides and firmly bound, after which leather soles were sewn directly onto their pads. The procedure seemed cruel, but it was effective. My own feet, too, were grateful for the day's rest; and I took advantage of the opportunity to make a fair copy of my latest map-sheets. On my reckoning we were now 200 km farther east than Tsondol and 5 km farther south.

In the course of the march from Tsaghan-obo I got onto the road again. At Khara-muck-shandai, where we pitched camp, the water was fairly tolerable, even though it was not quite sweet. According to the Mongols, we were here due north of Ukh-tokhoi (on the Winding Road); but the distance was too great for the »Four-peaker» to be visible. The collation of our map material long afterwards showed this to be quite correct, which was striking proof of the Mongol sense of direction. What made it still more astonishing was the fact that no-one but the guide had been in these parts before.

On the morning of April 5th I saw the first camel-louse of the season, the same sort of tick that had been such a plague at the lower Tarim in the summer of 1928. The day's march took us to Khara-orobok, past a couple of other wells. The following day we purchased camel-beans from the merchants at Bande-tologoi, 15 li to the north, and pitched camp just east of the well Ulein-shandai among extremely sterile hills.

On April 7th we passed a tent with a few ragged Mongols, refugees from

Khalkha who had with them a flock of sheep and some camels. A really inspiring sight on this morning was offered by a flock of 17 swans flying high in the upper air, with the sun gleaming on their white bodies. Their song floated down to us as they flew past, heading W. S. W., presumably towards the Edsen-gol. But where did they come from? There was not an open sheet of water within a radius of hundreds of kilometers. Swans over the desert! It was like a greeting from another and a milder world, a sort of assurance that this apparently endless wilderness nevertheless had its limits.

As the road ran closer and closer to the frontier of Outer Mongolia I had to follow the caravan, and not make any short cuts to the north of the road. And in case we ran into any frontier patrol it was important to be in one body.

At the camp, that was without name, an Edsen-gol Mongol arrived with six or seven camels. He had spent the night at Yingen on the actual frontier to Outer Mongolia; but he had seen no soldiers there. The next march (April 8th) took us, too, to Yingen, an oasis of scrub where drift sand had come to rest in the shape of dunes and containing three wells, two of which lay in Outer Mongolia. To the south of the oasis there seemed to be the lowest of a large east-westerly depression, whose northern edge I had followed for several days. It gleamed with red cliffs, and our palaeontologists would presumably have found a quantity of fossils in these tracts. Along the road to Yingen I saw, besides the carcases of camels, also a dead web-footed bird resembling a goose.

We pitched camp insouciantly in the vicinity of the eastern well, that lay within Outer Mongolia. Since this country became independent it had moved the frontier southwards, encroaching on Alakshan's territory.[1] The pasturage was better around the eastern well, and the water was less mixed with dung than that of the other two. As we found, moreover, a number of fine stone age tools among the dunes at the eastern well, I was quite prepared to run the risk of meeting an Outer Mongolian frontier patrol. Here, at last, I had an opportunity of getting a proper wash.

As April 9th opened with a raging sandstorm we had no choice but to stay where we were, although in this weather the place was by no means ideal, with its wealth of sand. (See Pl. 23 and Vol. IX: 1, Pl. 27 a.) The air was turned reddish brown by the whirling millions and millions of dust particles. One could not see fifty meters in front of one. A few isolated trees seemed to be grappling desperately with the tempest; except for some straggling specimens in the valleys around Yaghan-khairkhan I had seen none since leaving the Edsen-gol.

In the course of the night the storm abated, and we were able to continue our journey eastwards. After about 10 km the road crossed some red sections, and

[1] According to the edition of STIELER'S map that I had with me, the old frontier runs about 70 km to the north of Yingen; in the 10th edition, on the other hand, the frontier is placed much too far south.

here we found beautiful flint objects. At the well Monghol a little way to the south-west BATU also found a number of elegant flint tools. We pitched camp in the middle of the plain, where the pasturage was tolerable.

The following day we passed the sharply defined erosion 'witness' Abdar,[1] and drew water from the very deep, timbered well in the vicinity. Here, as at Yingen, Mongols had formerly lived; and hereabouts, too, runs the boundary between Alakshan and Dunda-gung. The road bifurcates at this point; the direct route (that ZIMMERMANN followed) continues due east and joins the Winding Road just west of Chendamen-khara-tologoi. I chose to follow a more north-easterly course up towards Hoyar-amatu, in order to strike the previously mentioned ancient wall as far west as possible.

In the dry river-bed, Saglarin-gol, that we followed upstream, stood a few elms. Of animal-life I saw only a grey-white owl; antelopes were conspicuous by their absence. The day before I had crossed a single spoor.

On April 12th we reached Hoyar-amatu with its nine yurts and three tents, all belonging to Chinese merchants. I had thought of continuing to the next well, a matter of 20 li to the east; but the threatening storm-clouds that had hung around the hills in the north during the day came rolling nearer with strong gusts. The sand began to whirl up and lash one like hail, and even a few grains of snow came sweeping on the wind. We had now almost half the way to Beli-miao behind us, and had reached the bounds of the worst desert. Its eastern part is called Galpyn-gobi, precisely as it is marked on STIELER's map. There seemed to be a ruined fortress on the rocky ridge south-east of Hoyar-amatu, but I could not go up to it for a closer inspection.

The following day we passed the well Ghashun, where WANG found beautiful flint objects. The road here went in among dune-covered hills, and drift sand whirled and eddied in the blast. As was to be expected in country of this sort, the road wound hither and thither, and we made a detour to the south in order to avoid the worst of the sand. Fortunately, we had the wind in our backs; we should not otherwise have been able to march through this sand belt. Between the strongly weathered rocks, whose surface crumbled beneath one's tread, grew *shara-burgas* and sloes with pink flowers, the first flowers I had seen that spring. However GEORG and MONTELL had managed to negotiate this country in the car was a mystery, but I saw their tracks again and again. We pitched camp in good saxaule pasturage after emerging from the sand belt.

On the morning of April 14th there was a thick layer of sand on all the objects in the tent, and the wind was still blowing pretty hard. We kept a north-easterly course and passed Durban-modtei after 20 li. Here, too, there were Chinese merchants in six yurts. In the dry river-beds in the surroundings there grew beautiful old elms with spreading branches.

[1] For illustrations of this see HEDIN's *The Silk Road* facing p. 75 and Vol. IX: 1, Pl. 27.

The merchants along this caravan route had their homes in Kuei-hua, Pao-t'ou, on the Huang-ho plain in North Ordos or even in Peking.

The road entered the Bayan-nuru range by a very lovely ravine, with many elms and 15 m high sheer walls of dark red gravel. The brilliant play of colour seemed crying for the brush of an artist. The name of the place was Ulan-erikh. By a steep, winding ascent one came up on Bayan-nuru and crossed several low divides. The path was flanked with the skeletons and carcases of camels. The ridge was in actual fact rather a wide plateau. On its gently southward sloping surface I came upon the ancient frontier wall at a place called Khara-obo. This was the northernmost outer wall I had met. It came down from the hill just east of the road in a slight curve, and was well built of unmortared stone slabs. At the foot of the rock it became a quite insignificant earthen rampart, that could nonetheless be followed. As soon as it ran over rocky ground again it was made of stone. It varied in height from some dm to 1.5 m, and was over 2 m in breadth. Only the shell of the stone wall was actually built of stone; the inside consisted of earth and gravel. One result of this method of construction was that the stone sides in places sagged inward towards each other, as the inner filling had been partly washed away by rain. The wall was not at all as straight as the Han Limes at the Edsen-gol, and had no watch-towers. Quite soon, however, I did find a rectangular rampart, 124×104 m, just inside the wall. The walls of this enclosure were built of stamped clay, 1 m in thickness and scarcely 1 m in height. The entrance was in the short side to the south. We came upon no finds inside. It was evident that this enclosure had quartered the garrison of a section of the wall.

We encamped near the wall at the southern foot of the Bayan-nuru. Before us extended a wide plain covered with small thorny bushes and with rather sandy soil.

According to NAIDANG, the wall began in the Hongorchi Hills at Alakh, on the frontier between Khalkha and Alakshan; but it did not extend into Outer Mongolia. In the opinion of the Mongols it was built by the inhabitants of Khara-khoto. It remains to be seen whether any finds give support to this legend.

On the morning of April 15th the air was thick with dust, and the wind had increased to fresh gale. We were thus obliged to stay over a day at this inhospitable place. But early the following day we were able to set off across the plain. I stuck to the wall, or rather, the rampart, while the road ran to the north of it. The rampart led almost due south-east, but swerved off to E. S. E. after 5 km. Some kilometers to the west of this bend lay a collection of yurts around a hill with two obos; this was a Chinese trading-post that they called Ulutu (probably a distorted Mongol name). The rampart became difficult to follow among the low scrub; and presently I lost it altogether, and had to wander

about for a long time before I finally struck it again. Its course now ran E. N. E. This walking in the heavy sand and counting my steps took it out of me considerably, especially as I had had nothing to eat but a bun with my tea at half-past five in the morning. When finally, past one o'clock, I caught sight of the camp in the distance, the mirage over the heated ground transformed it at first into a white *suburga* surrounded by tall trees (my tent and the camels browsing around it!) and then into a Mongol village; and it was only when I got quite near that I realized what it was. At that moment I felt it to be the most desirable spot in the whole universe. It was the place where I could eat, drink and rest. It was home. And still I should be leaving it after a short night's stay.

Some little distance from the camp lay a white-washed house and some yurts called Adag-holugar; and the camp itself lay just near two merchants' yurts that went under the name of Ekhin-holugar.

From the merchants I had the following information: The wall followed a N. N. E.—N. E. course in the sequel, and then disappeared to the north of the road. Just south of it ran another wall, and a little to the south of the camp the two walls ran quite close to each other. To the west, the southern wall ran W. S. W., and passed Kuku-khuduk about 100 li from here. Farther west they knew nothing about it. In the east it passed Ulan-tsonch (as I was able to confirm).

On April 17th the caravan kept to the road again, while I turned south to find the two walls. Strangely enough, there was only a matter of 7—8 li between them! The south wall was rather better preserved than the northern one, but built in the same way. It measured 1—1.5 m in height and was 7 m broad at the base (owing to the fact that it had crumbled, and become an evenly rounded swelling instead of a clearly marked wall). I followed it for nearly 20 li, finding two ruined watch-towers about 50 m to the south of it. To the west WANG came across a third tower and a couple of sherds that *may* date from the Han dynasty.

I returned to the north wall, that was followed by the road (there was also a path to the south of it.) Several herds of camels were browsing on the plain; and there were traces of many Mongol camps. The road divided: one branch ran E. N. E., but the caravan had followed that running alongside the wall E. S. E. After this the plain was cut up by ravines with dark red walls. On the eastern side of the last little ravine rose the rather high edge of a terrace up onto which the wall still led. Where it crossed the ravine there was an opening in it only for the actual river-bed. Up on the terrace I expected to find a big plain also on the eastern side; but after only 150 m the plateau came to an abrupt end with a steep cliff, a blood-red and simply gorgeous splash of colour. In all directions extended the most magnificent badlands I have seen. Nothing but red clays. Here, certainly, there must be fossils *en masse*, an assumption that is, moreover, borne out by a place-name somewhat farther east: Lung-ku-shandai,

The Dragon-bone Source. As I noted later, this formation stretches all the way to Ulan-tsonch, where BOHLIN and BEXELL made their fine fossil finds in the winter of 1930. Up on the plateau I saw the northern wall for the last time in this tract; but I was to strike it again farther east.[1]

The name of the camp was Irmek, and there were watering-places both to the north and south thereof.

The next day I concentrated on the south rampart, as the northern one seemed to be running too far north. Ulan-tsonch proved to be much closer than I had anticipated. I was accordingly quite near to tracts with which I was familiar; I was even able to take a bearing towards one of NORIN's triangulation points. The *agger* was rather indistinct among the scrub vegetation; but at long intervals it was provided with watch-towers. The first I saw measured 3—4 m in height, the next one was more decayed. Just about opposite Ulan-tsonch there is a tower of stamped clay approximately 4 m in height and with a side of 5 m; large blocks have loosened from its sides. I saw another similar tower in the east. We pitched camp near merchant's yurts (Pao-t'ou people) at Khurd-khara-usu, where there was an insignificant trickle of running water in the bed of a brook.[2] According to what I heard from the people here, one could not follow the wall eastwards with a caravan. Apparently it swerves off to the north-east just near here and enters hilly country.

To the east of Khurd-khara-usu the road led up a valley with elms that were just in bloom.

We got onto an old road that consisted, where it crossed level ground, of a number of parallel paths. One could clearly distinguish its continuation W. N. W., although it was almost overgrown. This was what LATTIMORE calls The Small Road, that formerly led up to Kobdo in Outer Mongolia, and that YOUNGHUSBAND in his time followed on his journey to Hami.

On a little plain with *tsaghan-deresun* (a grass, Lasiagrostis splendens) quite a large herd of antelopes and three bustards were browsing. The antelopes seemed to include both *Gazella subgutturosa* and *gutturosa;* the latter I had never seen so far west as this. It is a steppe antelope, and we were now in the transitional zone between desert and steppe.

As there was no possibility of our reaching Unyen-usu that day, and my feet, moreover, were pretty sore, we pitched camp after a march of only 40 li at Arien-khuduk, where there was a Mongol camp, but strangely enough, no water. The Mongols were only pasturing their camels there.

In a stiff wind that turned into a hailstorm we pushed on the next day to Unyen-usu, and here it snowed more than it had done at the Edsen-gol the whole

[1] The position of a part of this northern wall, between those sections I mapped myself, is plotted on the general map thanks to surveys carried out by HAUDE in the summer of 1931. HAUDE also found some coins of the Hsi-hsia dynasty in a *castrum* at the southern wall.

[2] See Pl. 26 in Vol. IX: 1 in this series.

winter through. At 2 p. m. the temperature was —4°, and it was lucky that we could buy dry dung for fuel from the Chinese merchants who were stationed here. I congratulated myself on not having cashiered my tent-stove, as I had seriously considered doing at the very beginning of the return journey. That evening a thin sickle moon gleamed down on the wintriest camp I had known since March 1930. For the camels such weather was sheer misery; they lay down with their backs to the wind, got their coats full of snow and refused to go out browsing. They had not yet begun to moult their winter wool in earnest; but then they knew the capricious climate of this country better than stupid foreigners, who in spite of several years in Mongolia exchange warm underpants for drawers in April.

We had to stay over a day in this winter camp. I heard that Yang-chang-tze-ku and Liu-tao-ku were swarming with robbers, but there was nothing unusual about that. For safety's sake, however, I decided to take a more northerly route in order to avoid these uncertain tracts (otherwise I should have found myself, on the next day's march and thereafter, on the same route as that I had taken on the journey out.) Actually, I gained by making this detour for no-one had mapped this route (MONTELL and GEORG drove over it both on their way out and on their return), and I had greater opportunities of scouting round for the walls, that I had got quite out of touch with for the time being.

On April 22nd we set out again, passing to the north of Murguchik and encamping at a Khara-tologoi. At the beginning of this march I observed a couple of stone graves and a long row of stones. It would seem as if such graves were concentrated to the steppe. I now had a point of contact with my journey out, for this camp was identical with No. 16 of December 14th—16th 1929. Here, too, there was an insignificant row of stones as well as a small site containing neolithic worked flints.

The next march took us past Khashiatu (Gashatu), a military post and *mai-mai* a little way to the north of Tabun-tologoi, and from here we emerged onto an extensive plain. After a while I realized that I was pacing in the same river-bed that I had mapped from the opposite direction one day in December 1929, a bed constituting a tributary to the Khongkhorin-gol, and thus also to the Huang-ho. We pitched camp near some Chinese yurts, where the brook was called the Bayan-gol. Past this spot there is a road running north-west up to Outer Mongolia, that is marked on STIELER's map (perhaps this is The Small Road?). From the camp we saw several caravans moving over the plain.

From here, then, there began what was for me a new road all the way to the Beli-miao tract. In the yurt of a Chinese merchant at Ulan-ghoshu there were two large chests pasted over with coloured cigarette-pictures and the visiting-cards of former guests; among the latter I spotted also GEORG's card. I went on ahead of the caravan over the undulating plain, and from the crest of a rise I saw a magnificent caravan coming towards me. As all were mounted it must be a Mongol

caravan, and it suddenly struck me that this might be HAUDE and MÜHLENWEG who, as I knew, were on their way to the interior of Mongolia to establish a meteorological station somewhere to the north of Shande-miao. A rider broke loose from the long row of camels and came galloping towards me. It *was* MÜHLENWEG! What a surprise to come into contact with civilization already! We encamped on the spot, to be able to do our talking in peace. HAUDE had with him two Chinese students as assistants, and among the Mongols I recognized several from the big expedition (MERIN, BONGKH, YAMSERING). Their 62 camels looked really splendid; fine, fat animals all. They had started out from Khadain-sume, and were now looking for a suitable spot for the station. That they were so near our old route from 1927 they had no idea; and I was able to advise them to strike off to the north-west from the Bayan-gol along the road they would find there.

One had got quite out of the habit of talking so much at one time; and for dinner one was served such unaccustomed delicacies as white bread, jam, dried fruit, Chesterfield cigarettes and Old Tom's gin. One was suddenly transported almost to the centre of the sophistication of Occidental civilization.

The next morning we were caught up by a *gegen* coming from the west, a Mongol or Tibetan Living God, travelling in a Peking cart drawn by a stately camel led by two lamas. Most of our Mongols went rushing to meet him. The cart was stopped, the Mongols kotowed and were tapped on the head with the gegen's aspergillum. The holy man peeped inquisitively out of his covered cart at us foreigners and our cameras. He seemed to be pretty comfortably covered with earthly fat, and not particularly spiritual. His name was GATCHING GEGEN, and he was from Kum-bum, on his way to Peking. An Orot woman who came riding by dismounted from her horse, doffed her cap and threw herself three times to the earth before the gegen's cart, after which she could approach and receive his blessing. Mongolian women are on an equal footing with the men, and if they meet a gegen they receive, just as the men do, a little absolution. It was curious that she took off her cap, for Mongols are as a rule very scrupulous about putting on their caps as soon as they are about to perform any official or ceremonial act (their tokens of dignity — buttons and feathers — are worn in their caps, according to the old Manchu ceremonial custom.)

I took leave of my old comrades again and set off on a rather uninteresting march over undulating country. Herds of horses were common; the pasturage was better suited to horses than to camels. Camp was pitched for the night in the vicinity of Khung-chölon, The Stone Man, where sure enough there was a monolith, though I saw no trace of human sculpture. Probably there was a baba-stone in the neighbourbood, or else the carvings were effaced on the monolith.

At Ulan-ghangha we passed a rectangular enclosure consisting of an earthen rampart 156×136 m. The rampart was double and very indistinct, and enclosed low mounds, the remains of houses. There were also two solid stumps of fossil wood.

On April 26th we passed Mongol and Chinese yurts at Tsaghan-erikh, quite near Galten-obo. 10 li to the east I ran into the southern Limes rampart in an open river-valley, where I pitched camp in order to study the rampart more closely. The name of the place was Suje. To the west of the camp the rampart ran W. N. W., with many small bends. In some places it was a double rampart of earth, and in others a stone wall. Inside it lay the ruins of watch-towers and rectangular enclosures. I followed it for 15 li to a point due north of Galten-obo, where it swerved off W. S. W. and a watch-tower was visible about 1 km away.

Meantime, the two diggers had reconnoitred the wall to the east, in the course of which CHIN had come upon a little finding-place for stone age artifacts, while WANG had discovered that camels could not follow the wall where it went up over hills. I was now certain that this southern wall was identical with the one I had followed from Amtsar to Khub in the autumn of 1929.

None of the local Mongols ventured to approach my camp, although I had sent out some of my men to ask them to come, for I wished to ask them questions about the wall. Accordingly, I took the guide with me and rode to the nearest yurt to get a little information. Outside the yurt sheep and goats were lined up in a row for milking, and inside, the right part of the yurt was partitioned off with a felt, behind which kids and lambs ran riot. On the left-hand side of the partition there was a little child among pelts and sheepskins, while in the seat of honour sat a white-bearded lama wearing a pair of original spectacles: large, round, brass rims held in place by means of a string round the ears, and balanced over the nose with a disc supported on the brow. The old fellow was at first curt and unfriendly, but he gradually thawed out and told me that he knew of both these walls, and also the one in the Lang-shan. To Khub from here was a two days' journey, and to proceed thence northwards to the temple Khure-golin-sume (on our road) would require a further two days. But he could not procure any guide for us.

A little distance from the yurt lay a solitary grave of the ordinary rectangular type, filled with stones.

I now divided the caravan into two parties: BUYAN JIRGAL and SAIN BILIK were to accompany me with a minimum of equipment on five camels along the wall to Khub, and afterwards to Khure-golin-sume, where the rest of the caravan was to meet us in four days' time.

I went on foot beside the wall and did the mapping. It was not long before I found a »ch'eng» or four-cornered enclosure just inside the wall. It was quite well preserved, with walls of stamped clay from 1—1.5 m in height and with corner towers. On the east wall there had been a gate-house. Unfortunately I made no finds; but the very existence of such »ch'eng» and »ting» (watch-tower) makes it very probable that we had here to do with a Han Limes. The prevailing

direction of the wall was E. S. E., though there were also a lot of little bends, some of them, it seemed, quite unmotivated.

As a rule, the wall was so constructed that an attacker would have to fight uphill. This does not, however, refer to the part of the wall farther east that I mapped in the autumn of 1929. Just east of the »town» a broad river-bed runs through the wall, and it was probably to protect this opening that the »town» was built. Later, I found many parallels to this. As soon as the wall ran up into the hills it was built of stone in dry masonry, was in parts very well preserved and as much as 2 m in height.

Now began a pretty strenuous climbing up and down steep hills. What tremendous toil must have gone to the building of this stone wall in such country, when merely the mapping of it was such a job! The watch-towers, too, were built of stone; and there were also rectangular stone enclosures with a side of about 20 m and very solid walls.

By the time I had followed the wall a matter of 15—20 li from the camp I was just about dead-beat, and I saw that it was impracticable to continue farther eastwards. But when it came to rejoining the caravan it seemed to have been swallowed up in one of the many river-valleys emerging from the hills. I came out onto the plain again, where I heard from a Mongol that my five camels had entered a certain glen. I set off again accordingly, and even found spoor, but only to lose them among a lot of horse tracks. I came upon a collection of yurts and wretched houses with gaily painted doors. It proved to be Örego-khurel, i. e. a yurt-temple; and in the houses lived Chinese merchants. People fled at my approach; only an angry dog attacked me. My caravan had not passed that way, I was told by some Mongols, who gave me a very unfriendly reception. However, I managed to find the tracks of the caravan again, and thought I should reach the spot where it had camped before darkness fell. In this I was unsuccessful, and finally, losing the track again, I thought it best to emerge from the hills and seek quarters for the night at some Mongol village along the road. There was certainly no point in wandering about in the hills after nightfall. Meantime, as the sky was overcast it became quite dark before I had time to come out into open country. I was unable to find the yurt I had visited that morning, so I resolved to look for one of the yurts I had passed on the main road. It was not until I suddenly stumbled and fell over a camel's skeleton that I noticed that I had come out on the caravan road; it was easily recognizable from the wheel-tracks from the gegen's camel-cart. But I had no earthly idea whereabouts on the road I was. As I did not know how far it was to human dwellings in the east, I set off to the west, where I had at least Chinese yurts about 10 li beyond my last camp to aim at. A slight drizzle began to increase and become unpleasant. After an hour's brisk walking along the road I crossed a low rise — the Limes rampart. I was at my last camping-place. The remaining 10 li seemed never-ending, and

when I finally heard a dog barking ahead of me it sounded like music in my ears. Now it was simply a matter of getting within hearing distance of the yurt before being torn to pieces by the dogs. I have a great respect for Mongol dogs, as have all who have made the acquaintance of such beasts. I managed, however, to rouse the people in the nearest yurt without being torn piecemeal by the shaggy brutes who were swarming round my calves. It was ten o'clock, and I had been walking my legs off for ten and a half hours. There were two elderly Chinese in the yurt, and the older of the two was lying down enjoying his evening pipe of opium. Half the yurt was occupied by snoring Chinese boys; they were lying so higgledy-piggledy that it was difficult to count them. I spoke with my hosts in my simple pidgin Mongolian, and could tell from their dialect that they were from Pao-t'ou. They opened the smoke-hole in the roof, made up an *argal* fire and put on water for tea. I was soon gulping down one bowl of tea after the other, filled with roasted millet, and was also regaled with boiled balls made of flour and rice. Then they prepared a bed for me, and at eleven o'clock I stretched out my stiff legs and weary body as well as I was able on the floor, with a sheepskin over my legs and a prismatic »pillow» as hard as wood under my head. This instrument of torture and the vermin made sleep rather an uneasy business, but I did doze off at intervals.

At six o'clock the following morning I thanked my hosts for their hospitality (they resolutely refused to accept payment) and hastened off eastwards along the road. I had to catch up the main part of the caravan before they started for the day and get some of the men to help me find my little caravan. They were just preparing to start when I caught them up at ten o'clock. The guide was sent out to hunt up my companions; and the following morning they were found. Both Buyan Jirgal and Sain Bilik had been out searching for me during the night, and as the former was misled by a Mongol he had walked almost the whole way to Khub, and had to spend the night out. But he had my sheepskin and food with him. Nor had Sain Bilik slept in the camp. So all three of us had been out on a wild-goose chase after each other, and none of us had slept in the camp where we should have spent the night. So much was certain, however, that the wall was of one piece with that between Amtsar and Khub.

On the last day of April we resumed our journey, this time all together, and peaceably following the road. We soon passed some kilometers to the north of the little temple Tolochin-sume, the first we had seen at anything like close quarters along this road. Far away to the north, the line of the plain was broken by a chain of blue hills, the Soling-her (-khara? -khairkhan?); and in the same direction one caught an occasional glimpse of a shimmering white spot — probably the lama temple Ara-golin-sume. We pitched camp, after a long march of 67 li, to the north of Ara-khudukin-sume, which is rather larger, but less well kept than Tolochin-sume.

On May 1st we reached Khure-golin-sume, a little lama temple just to the north of the road. HAUDE had told me that he had seen a Limes rampart immediately to the north of this temple. It proved, also, easy enough to find, and at the same time I discovered a little ruined fort that had defended the opening where the Khure-gol breaks through the rampart. This was a rectangular enclosure, 2—3 m in height and with a core of stamped clay. Evidently this *khure* (enclosure) had given the river its name, and from this, in turn, the temple derived its name. It lies within Mu-mingghan.

The Limes rampart was only something over half a meter in height and 8—9 m broad. On the north side there was a slight ditch from which earth had been taken when the rampart was built. The direction was almost due east-west. Evidently this was the northern wall. At the temple there was a customs station, where 'grass and water tax' was collected. We did not need to pay anything, however; though HAUDE's caravan had been beset by the publicans.

May 2nd was warm and sultry even in the morning. I soon connected up with the rampart on the eastern side of the river, and followed it. The road ran for the most part in the same direction, which showed that it was an ancient highway. It was, moreover, the main caravan route from China to Sinkiang and western Outer Mongolia; its direction was E. S. E. — W. N. W., so our course now swung from E. N. E. to E. S. E. The rampart was mainly distinguishable as a change of colour in the vegetation: at this time of year it was light yellow with darker edges. In parts it was entirely effaced and the dark edges did not show up, and then it was sometimes tricky enough to connect up with it again.

We pitched camp at the river Atsein-gol. Here we met a Chinese, whose caravan of 70 camels had been confiscated, on the way to Urga, by the Outer Mongolian customs. Now he was on his way to try and have this affair cleared up, and for this he would probably need all the Chinese shrewdness he could muster, »and then some», as the Americans would say.

The following day we crossed the boundary between the territories of Mu-mingghan and Darkhan-beile and met a Chinese caravan of 200 camels with goods consisting of ready-made clothes and woven fabrics. They had come from Kalgan in 18 days and were bound for Kanchow, intending to take the Winding Road as far as the neighbourhood of Ukh-tokhoi, where they would turn off southwards. Many camel calves were carried on top of the loads; one of them was snow-white, and looked like a llama.

I pitched camp just beyond Adagin-usu, said to lie roughly due north of Bayan-bogdo. The following day, sure enough, I recognized the rounded cupola of the hill with the obo on its crest.

The last few days we had had low hills on our right, but now the road led in

among granite hills. The wall and the road still bore each other company not very far apart. At a well there was an assemblage of seven Chinese caravans with 400 camels on their way from Kuei-hua to Kansu with clothing, caps, shoes and cloth. A Mongol soldier of the Pao-shang-t'uan guard who was escorting this crowd took it into his head to shoot at my dog Björn, and hit him in the foot. He excused himself by swearing that he had taken Björn for a wolf, which, if true, proved that he could not be much of a Mongol. That soldier got such a sound telling off that, white as a sheet, he fell on his face and begged for mercy. Meantime, my fine dog was now possibly crippled for life. After his foot had been bandaged he was placed to ride on top of a load, just like a new-born camel.

In among the hills the *agger* was in places set with stones along its northern edge. It had not been built in a particularly strategic manner: again and again it followed a small valley up to the top of a ridge, only to run down on the other side into another valley, instead of running on top of the ridges between the valleys.

Emerging from the hills in the afternoon, we came out onto the great plain west of Beli-miao. It was blowing a fresh gale, and in the evening it rained for a couple of hours.

On May 5th we crossed the plain to the well-known lamasery, and the rampart ran directly underneath it. At the temple a lama in a red, fluttering mantle came towards me, and I was just about to ask him who lay buried in a small, newly built *suburga* when he cried out, »BERGMAN! BERGMAN!» It was MANTE LAMA, secretary to the late *gegen*, who had paid us a visit in our camp at this place in the autumn of 1929. He was so excited that he hardly gave himself time to exchange the usual polite phrases of greeting, but went on: »Is HUMMEL coming? And HEDIN, HASLUND, LIEBERENZ?» It did sound comical to hear this Mongol pronounce all these foreign names perfectly correctly (a Chinese could never have managed it) in spite of his knowing no foreign language. Through a veritable labyrinth he then took me between houses and across courtyards to his own little den, where he gave me tea.

We pitched camp on the Aibaghin-gol, in front of the temple, and here we met another old acquiantance of ours: the Mongol GOMBO, who had been with our main caravan in 1927, and subsequently joined the CITROËN expedition. Now he was a lorry-driver, conveying opium, I imagine, from here to Kalgan.

According to a Chinese merchant, the wall runs S. S. E. from the temple to Chaghan-chölo, 60 li away; beyond that he knew nothing of its course. I found, sure enough, the continuation of the wall south of the road to Kuei-hua, and could see it continuing S. 32° E., parallel with a road.

A few small flowers began to peep: a species of Leguminosae and a Sedum with white flowers. Ever since we had come out on the grass-steppe, moreover, the ground had been swarming with sand-lizards. And the larks filled the upper air with song!

A motor-lorry full of sleeping Chinese went tearing past, followed by another, if possible still more crammed, with people even sitting on the mudguards.

We camped on the Targhan-gol near a military outpost. In the E. N. E., the roof of the small temple of Khashiatin-sume was visible. This was our last camp in purely Mongol country, then followed the Chinese-cultivated sections of the steppe.

After 6 km — on May 7th — I crossed the ancient rampart that I knew was to be found somewhere between Kuei-hua and Beli-miao,[1] and saw at once that it must be a continuation of what I have called the Great Durbet Wall, that I had mapped in parts during my outward journey in the autumn of 1929 (see pp. 95 f). Some little distance west of Shara-muren-sume it crossed our route between Khadain-sume and Beli-miao, disappearing to the south of the latter place. Here, as there, it consisted of a strongly built double wall, the inner one up to 2 m high and the outer quite low; their united width was 22—25 m. At short intervals there were watch-tower mounds on the rampart itself from 1 to 3 m high. I followed the wall for some distance in a north-easterly direction. The undulating nature of the country makes it visible for 2 or 3 km and it disappears in the direction N. 20° E. Its almost north-southerly extension at this place is most remarkable, seeing that about the same thing also applies to my southern wall. These two walls must meet at a point somewhere south-east of Beli-miao, and the tracts of land outside them consequently converge upon a southerly wedge just there.

I then followed the wall some 3 or 4 li southwards and came upon a beautiful quadratic enclosure adjacent to the wall. Its side measured 150 m, and in each corner there was a round mound. Within these ancient garrison quarters a number of insignificant glazed potsherds were strewn on the ground, at best dating from Sung or Yuan: these, however, may be relics of a later garrisoning of the wall. The antiquity of this fortification is thus by no means definitely established. From what I was told by the Chinese it did not extend any farther than 20 to 30 li to the south; but their statements were in other respects so vague that one should take this with some reserve.

On the highroad a motor-car swished past in either direction, while a large camel caravan moved sedately westward. 40 and 4 km an hour, respectively! We pitched camp near the first Chinese farmsteads, San-ho-t'ai-pa-tze. A little way to the east lay the fields, from which immense clouds of dust were whirled up by the wind. The surface soil is gradually swept away, and the fields become too poor to yield any crops. Then the Chinese leave this ancient Mongol region, but it takes a long time before the grass grows up sufficiently to afford proper grazing for the animals of the Mongols.

Björn had by now got so high-spirited that he first tore off the bandage from his damaged foot and then flew at a stray Chinese who went into my tent, and tore a big piece out of his old sheepskin jacket.

[1] Mentioned by LATTIMORE and others.

May 8th was my last day with the camel caravan. One km from my camp lay a square wall enclosure, the ruins of quite a town, although its houses were almost wholly obliterated. The town wall had a side of 600 m, and inside it we collected some fragments of earthenware and porcelain, more or less resembling those I had found at the last boundary wall.[1]

The village of Ts'a-ts'a lay just to the east of this ruin, and when one had passed the last of the odoriferous Chinese houses with their black pigs, calves, sheep and chickens, and began walking towards the low, almost entirely earth-covered hills, the road crossed a wretched, earthen rampart running N. E. — S. W. Whether this was the continuation of one of »my» walls is very doubtful.

I talked to a Chinese farmer whose dialect was fairly easy to understand. He said that the land had formerly belonged to Darkhan-beile, and that the boundary between it and Tumet roughly coincided with the low rampart I had just encountered. This district had not been under cultivation for more than five years.

At the well-built house of the Chinese firm of Chang-shun-t'ai my mapping and my caravan journey came to an end. I had then mapped — by pacing — a connected route all the way from Chen-i, in Kansu. Apart from all deviations from the route, and counting only the shortest distance walked, it amounts to at least 1,200 km, or 1,344,000 paces. If one includes digressions and side-excursions, I dare say the total distance mapped on this latest part of the expedition would be about 1,600 km.

At this firm's premises I found the caravan that had carried my collections ahead of me, but this very day the cases had been taken down to Kuei-hua by motor-car by a foreigner (I had asked for GEORG to be sent up here to help me through the customs with all the collections); but this »foreigner» was not GEORG but TORGNY ÖBERG, another Swedish missionary's son, whom I had not met before. I was advised by letter to take a motor-car for the journey to Kuei-hua, because some bandits were still hanging about round the town. Two farmers had just been killed.

All the camp equipment was left here, and the camels did not have to descend from the Mongolian plateau, but could immediately begin their well-deserved and much needed summer's rest. Although I was more than anxious to get back home as soon as possible, I felt a little sad about saying farewell to the bracing and delightful camp life, leaving the camels that had so faithfully lugged my baggage the long, long way through the desert and across the steppe, and parting from my servants, Chinese as well as Mongols. But it would certainly be a treat for my tired legs to rest themselves on a motor-lorry for the last bit of the road.

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[1] DESMOND MARTIN, who some years later visited these parts under GEORG's guidance, has localized a great number of ruined towns on this steppe but makes no mention of this one. See *Monumenta Serica*, Vol. 3, Peking 1938.

A few days later I was able to send off some of the men and the greater part of the baggage on a motor-lorry, but for my own part I did not get away until May 14th. During these days of waiting, however, I made a fair copy of my route-maps of the return journey. In company with a crowd of Chinese I then bowled along the main road towards the south-east, down the Kuei-hua pass, to arrive in the evening at the town of the same name. From here I took the train for Kalgan on the 16th. At Kalgan I was met by LARSON and ÖBERG, and there the expedition was wound up as regards servants and camels. Björn, my faithful friend and my best company during all the time that I had been alone, was left with LARSON. It would have been nothing short of cruelty to take him with me to the sweltering heat of Peking.[1]

*Peking*

On May 19th ÖBERG and I arrived in Peking, where we were given quarters in the Swedish House, 31 Hsi-kuan-yin-ssu, with MONTELL, GEORG and Prof. LESSING.

Together with Messrs. LIU FU and MA HENG, who were to decipher my Chinese manuscripts from the Edsen-gol, I carried out a preliminary rough-sorting of the finds, so that they would be able to begin working on them during the summer. The final classification would then be performed by Prof. KARLGREN. On June 3rd I left for home, travelling via Siberia, Russia and Finland, and arriving in Stockholm on June 18th. SVEN HEDIN, HUMMEL and HASLUND were all there.

As it was found necessary that some member of the expedition should always be in Peking as long as the independent groups were scattered over a large area in the field, and as MONTELL was to return to Sweden in the autumn of 1931, it was decided that I should return to Peking and stay there for the time being. Another reason for this arrangement was that my collections of Han relics from the Edsen-gol needed to be catalogued and set in order, so that the Chinese might start work on the manuscripts contained therein. Accordingly, on September 5th I left Stockholm, this time accompanied by my wife and son. We took the P. & O. liner »Naldera» from Marseille via Suez to Shanghai, and arrived in Peking on October 21st.

Soon afterwards, MONTELL left for home, and also SÖDERBOM became a more casual guest than before at the Swedish House. Prof. LESSING, however, had his headquarters there.

[1] Very much later LARSON told me that the dog had got increasingly savage in temper, had bitten people and jumped the courtyard wall. LARSON therefore took him up to Khadain-sume, thus restoring him to the country that was his home, and I hope that many years were left him to enjoy his liberty and the wonderful Mongolian life.

About my time in Peking nothing much need be said. In January 1933 SVEN HEDIN arrived from Chicago, and during the spring and summer many of our colleagues returned to Peking from long years in the field. BOHLIN, HÖRNER and CHEN left for their respective homes, while NORIN returned to the interior, where, together with BEXELL, who was still in Kansu, he was to start a relief expedition for AMBOLT, of whom nothing had been heard for a very long time. This was all the more disquieting, as political conditions in Sinkiang had grown very turbulent and unsafe.

# THE MOTOR-CAR EXPEDITION 1933–1934

By degrees the plans for a new expedition began to take shape, and in the late summer we could set about preparing for a motor journey to Sinkiang under the protection of the Nanking Central Government, that was also financing the enterprise.

Of this motor journey through Mongolia to Sinkiang, which started from Kuei-hua on Nov. 10th 1933, there is nothing much to say for my own part, at any rate not as regards its early part. I had, it is true, opportunities to make many supplementary topographical observations, and to observe the geography and morphology of the burial grounds of the steppe; and it was tremendously interesting to speed over those wide, open spaces where one had plodded so slowly before. This method of travelling provided, moreover, a much better general survey of the country that I knew already and its formations as a whole. Otherwise, there were not many opportunities for scientific work by the side of the regular programme, which consisted in exploring the possibilities of building two motor-roads between China proper and Sinkiang. No archaeological finds were made until we reached Yingen-khuduk, where a day's halt gave me a chance to collect a number of stone age objects in several spots among the dunes; and it became evident that practically the whole of this sandy oasis had been inhabited in prehistoric times. Otherwise, archaeological work was strictly forbidden on this trip, although the Minister of Education had sent a Chinese archaeologist as a passenger on the expedition! Accordingly, I made no excursions or excavations at the Edsen-gol, although there would have been ample time for it. Our Chinese passenger, however, hired some camels and went to make an excavation at Boro-tsonch. He also fossicked about in Erego-khara-börek, the area east of Khara-khoto, where one simply cannot help coming across ruins and making archaeological finds.

At Ming-shui, half-way between the Edsen-gol and Hami, I made a plan of the ruined fort (Fig. 17) and collected bronze arrow-heads of Han type, which however, I have not seen since. The ruin appears to have consisted originally of a central square enclosure, somewhat irregular, with a side of about 22 m.

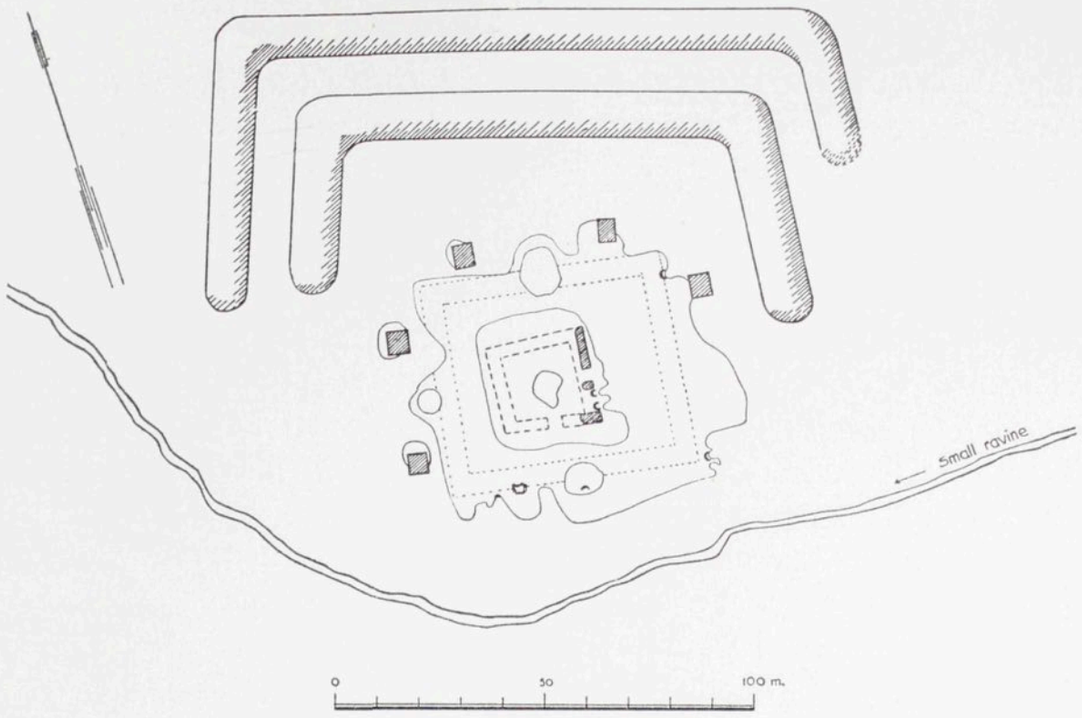


Fig. 17. Ming-shui, Pei-shan. Plan of the ruined fortress. The finds were made mainly to the east of the ruin, between the outer rampart and the ravine. Cf. Plate 24. (The two ramparts to the north of the fort have been too strongly marked; they consist of two low swellings in the ground)

Surrounding this, there was an outer square wall with a side of about 55 m, and just outside this were five watch-towers, two on each of the west and north sides, and one on the east side. The condition of the ruin is clearly seen on Pl. 24. South of the fort ran a small ravine, and north of it there was a low double rampart. It is possible that the latter once enclosed the entire fort. The boundary between Kansu and Sinkiang runs not far from Ming-shui, and it is possible that in the days of the Han dynasty there was a frontier here. If not, the Ming-shui fort must be regarded as an advanced stronghold on the road to Sinkiang.

The political situation in Sinkiang was far from satisfactory. The bloody civil war provoked by the misrule of the Governor-General had been raging for three years almost without intermission. These civil feuds blazed up in real earnest after the arrival from Kansu of the young Tungan robber-general, MA CHUNG-YING, or »Big Horse», as we called him. He soon became the main figure in this war. It was with his forces that we first came into contact during our journey through the war-ravaged and sadly exploited province of Sinkiang. And it was the desperate soldiery in his fleeing army that came within an ace of bringing the whole expedition to a tragic end in Korla. After MA CHUNG-YING's Tungan army had been driven west by the troops of the provincial government, reinforced with Soviet forces that the new Governor-General had called in to help, we were detained in custody in Korla for three weeks by the victors' but afterwards received permission to make a two months' tour to the new Lop-nor.

*Searching for an ancient burial place*

During April and May, 1934, when SVEN HEDIN with part of the expedition voyaged down the Konche-darya and the Qum-darya to the new Lop-nor in canoes, I had time to make an excursion with archaeology as its main object. These researches were principally intended to supplement HEDIN's attempts to localize the ancient Silk Road, which was of course an archaeological problem.

During his river journey SVEN HEDIN learnt from his old servant ÖRDEK, who had come to see his former master, that graves existed in the desert to the south of the Qum-darya (roughly due south of Yardang-bulaq). This same ÖRDEK was to be my guide, and in addition I should be accompanied by the indomitable GEORG SÖDERBOM. With a good deal of trouble, some horses and donkeys were obtained from Shindi and Tikenliq, the nearest villages.

On April 29th HEDIN with his group had gone on with the canoes from Camp 70, which was the permanent camp on the Qum-darya of the motor-caravan a little to the west of Yardang-bulaq; and the following day my group went by canoe down the river, stopping some distance below Yardang-bulaq at a point from which ÖRDEK was to start looking for a fairly large burial ground that in his opinion should be situated some 30 li to the south out in the sand desert. He was away for three days, but without finding any burial place. But it was at least 15 years since he had been there last, and then he had approached the place from another direction, or more precisely from the dried-up lake of Avulu-köl alongside of the eastern arm of what was then the lower Tarim. Now, however, ÖRDEK stated that the burial ground was situated 100 li south-west of our camp, but it had been entirely flooded over by a large lake . . .. Although I was pretty certain that a burial ground could not be inundated in these regions, knowing that they were located on elevated ground for the express purpose of preventing such a catastrophe, I nevertheless decided to visit the spot to see what sort of a lake it might be. In the direction indicated no lake existed on any previous map. A strong north-east gale kept us in Camp B 61 for another day. I made, however, a tour on foot on the southern side of the river, towards the south and south-west. Some distance from the river the ground was even, consisting of bare clay denuded by wind-erosion. Here I found sparsely scattered tamarisk cones with live shrubs, and in places there were curiously small *yardangs*, only 20 cm high, occasionally joined in the form of long strips, or again, truncated into knob-like formations. Above the actual surface of the ground was a sparse scattering of older *yardangs*, 3 m high. Drift sand was rather scarce, and dead trees, that at a distance gave the appearance of a continuous wood on the southern side of the river, and are so marked on STEIN's map, only occurred in detached clumps; only a few dead young trees were to be seen.[1] Below the camp the river

[1] As has been correctly observed by HEDIN, the dead wood along the Qum-darya does not give one the impression of being above middle age, so to speak. Such trees as are still standing are mostly

Sand-dunes and desert vegetation at Yingen-khuduk in the Gobi

The Han fortress at Ming-shui in the Pei-shan

made some very pronounced serpentine bends. On the clayey ground I picked up a solitary potsherd of exactly the same kind of ware that I had found some fragments of on the northern side of the river; it was probably a specimen of stone age pottery.

On May 5th we ferried camp and animals across the river. The donkeys had to be thrown on their sides and have their feet tied together, after which they were carried by the tail and ears on to two joined canoes. The caravan was to move only 10 li up the river. For my own part I went mapping in a loop southwards. Before long I came across a small stone age dwelling-site, whose remains of chipped flints and potsherds were lying both on top of the yardangs and in the 2 m deep hollows between them. A lanceolate arrow-head was of a type similar to those from Singer.

Making for a group of dead trees, I passed through a belt of desiccated tamarisks that had been dead for so long that only the lower part of the thickest limbs was left — everything else the wind had worn away and broken off. Most of the dead trees were still standing upright, but their branches had as a rule been blown away. A bare clay surface some thousand sq. km in extent and surrounded by sand-covered ground was cut up by parallel furrows in S. 25° W. orientation and about 1 m deep. These furrows had been very beautifully polished by the wind, and were in parts wider at the bottom than at the top. Their depth increased towards the south, where the furrows disembogued, as it were, in the edge of a terrace. The modelling of these furrows is a typical case of wind erosion. At the foot of the terrace, which was about 8 m high, there were two small pools of salt water. At the first glance this depression had the appearance of an old river-bed, but it consisted of an isolated hollow. Beyond it lay a whole series of pools and small lakes in similar depressions, which were partly interconnected, partly isolated from each other. This was the most hopelessly dreary place I had ever seen. Sterile desert is often beautiful, and magnificent in its desolation; but here, with all these dead trees, shrubs, marshes, and a tangle of desiccated vegetable life encircling the fetid salt water of the pools, the impression was simply one of dead waste.

However, I did stumble upon five Chinese coins, unfortunately much too corroded for any legend to be visible, but of typical Han shape; and close by lay a small bronze cylinder, identical with one I had found on the Ḥdsen-gol. Perhaps it had once done service as a purse? The coins fitted exactly into it.

young, while the old ones have fallen down. On his journey in 1900, HEDIN found 14 live poplars a little to the east of the meridian of Yardang-bulaq in the then dry bed of the Quruq-darya. These must have received their moisture from subterranean drainage from the Quruq-tagh.

All dead trees are not necessarily from the time of Lou-lan. The wood doubtless survived for a very long time after the river had dried up; and it is, moreover, quite evident that the Qum-darya must have been water-bearing for at least one period after the fall of Lou-lan, probably several. The theory that the »pulsations» of the river are to be counted in periods of 1600 years, does not stand the test of evidence.

If so, some traveller in the days of Lou-lan had had the bad luck to lose his purse here.

The morning of May 6th was overcast and quite cool. As I had done the previous day I made an excursion to the south while the caravan and the canoes moved up the river some 20 li, and again I found some stone age relics in the depressions between the yardangs. I also came upon small salt lakes in deep depressions surrounded by dead poplars. GEORG and the cook (CHOKDUNG) also found potsherds on the march, both Han and stone age.

Next morning there fell a few heavy drops of rain. ÖRDEK considered this camp (F 63) as a suitable starting-point for an excursion to the lake that was supposed to have deluged the burial place, as he thought it was not more than 50 li distant. As it turned out, however, he only took the caravan a distance of 5 li, to Pataliq-köl, the river-connected lake that I had seen during my yesterday's walk. The old fellow now spoke of a last lake farther south, but this, he said, contained salt water. He began to appear so uncertain, and gave such evasive answers to our increasingly insistant questions about the burial place that we finally began to doubt its existence. By getting CHOKDUNG, who could talk with ÖRDEK in Chinese, to question him in his sly way we learnt that ÖRDEK's burial ground was situated to the south-east, but that he (ÖRDEK) was so afraid of the *iblis* (devils) that dwelt there that he did not dare to take us to the place. The burial ground was swarming with such unpleasant beings; when ÖRDEK had visited the place some 15 years ago one of his companions had dropped to the ground and fallen ill; and for his own part, when spending the night there he had started up from his sleep and seen some uncanny shape.

However, ÖRDEK promised to ride over there in the morning together with the boatman TAYIR, who, after all, was also said to have been there; but he asked to be allowed to take a rifle along, as the *iblis* stood in respect of fire-arms. But I wanted to go with them myself. This, if only after much hesitation, ÖRDEK agreed to. On May 8th we accordingly set out on our tour of reconnaissance at 6 o'clock in the morning while it was still quite cool, ÖRDEK, TAYIR and myself. We had only two horses between us. We set out S. S. W. across fairly level ground thinly covered with drift sand. Quite close to the lake live tamarisks were growing, — when one got farther into the desert there were only dead ones on high mounds, and dead trees; but after half an hour's ride we passed several poplars in leaf, growing on a yardang. Farther on, the small dunes occurred increasingly close together, and only isolated yardangs rose above the sand. An hour later, the dunes had attained a height of 2 m. In a bare patch I found a pottery fragment of stone age type and a few more farther on, where the dunes had further increased in size. I also picked up a piece of iron. The dunes were undoubtedly of a later age than the stone age settlement, and in parts also younger than the Lou-lan period, for the spaces between the dunes where relics

were to be found were far too narrow for people to have been able to live there. Probably most of the relics were buried under the dunes.

About 10 o'clock we passed one or two green tamarisk mounds. The dunes had reached a height of 10 m. It was getting uncomfortably hot, the sun was dazzling in its unchecked intensity, so we called a halt for 40 minutes and made some tea. In all directions extended a jumble of dunes. The Turkis had so far held a fairly straight course, but now it appeared that they were not so very certain as to the direction in which the search was to be continued. Following TAYIR's suggestion, we continued towards some high mounds in the direction S. 40° E., subsequently altering our course to due east, which took us in among dunes 15 to 20 m high, piled up by east winds. It was a strenuous and sweaty business, climbing in the loose, hot sand, and I could not but admire the vigour and energy of the 72-year-old ÖRDEK. We had to lead the horses, and as TAYIR had hurt his foot he frequently lagged behind. Going north-east, we at last reached rather lower dunes; and as it was evident that neither of the Turkis knew the country we turned north, in order, if possible, to reach the river before nightfall. At 7 o'clock we were out of the dune sand, and in the gathering twilight we made out the lake near the camp and were home again at 8.10 p. m. On our round trip we had covered some 50 km, but the archaeological results were limited to a few stone age potsherds.

After a day of rest the two Turkis set out on another tour of reconnaissance in a more easterly direction. I mapped the lake, which consisted of two parts with elongate, bag-shaped inlets bordered by flowering tamarisks. Its area is only 3.5 by 1 km.

The Turkis returned after four days, but without having found the burial-ground. They had with them a few minor archaeological relics, including two bronze knives. We now changed the plan completely and decided to let them begin the search from Tikenliq; GEORG would take them to Ying-p'an by motorcar.

On May 14th there was a regular downpour of rain in this dry desert. For the rest of the time mosquitoes and gnats kept me company. On May 18th some boatmen brought me a letter from HEDIN, written from his Camp 80 on May 12th and asking for the small car to be there by the 23rd, or, if no oil had arrived, for the requisite number of beasts of burden for the return of himself and his men. The same day GEORG returned to camp after having taken ÖRDEK and TAYIR to Ying-p'an. He now went back to find out whether it was possible to send the small car via the Quruq-tagh to new Lop-nor to fetch the Chief. The group that had tried to penetrate to Tun-huang through the desert had just returned to Camp 70, after having turned back somewhere near Altmish-bulaq, and therefore they must know the road thus far.

From a shepherd arriving from Qara-dai, who was in charge of 1,000 sheep (the figure was given by the Turkis and therefore probably an exaggeration), I

heard of five graves 15—20 li from here. At last an archaeological ray of light! I immediately sent one of our men to look for the place. On May 22nd we broke up Camp 64 on Lake Pataliq-köl and moved up the river again. In some places I saw small huts built of tamarisk twigs: apparently shepherds' dwellings. That night GEORG and I pitched separate camps, owing to a misunderstanding. He had travelled with the caravan and gone past the place where I, and the canoes, made a halt. He had the beddings but no provisions, while I had the provisions but no bedding. Mine was therefore the better part, and GEORG afterwards told how from some herdsman he had obtained a couple of fishes that he and CHOKDUNG had ripped open with the lid of a tin (they had not even a knife with them) and then tried to broil à la *qebab*. He was encamped on the western side of a sack-like lake, somewhat smaller than the one we had just left; and due north, only 2 km away, lay the motor camp (from there, owing to the flatness of the country, one could have no idea of the existence of a lake of that size on the south side of the river).

As our stock of flour was nearly exhausted, in spite of our having made repeated purchases from Tikenliq (ÖRDEK, who had been responsible for the purchases, had given us short weight, and also smuggled away a couple of bags), we had to send for some more. EFFE, YEW and JOMCHA were therefore dispatched with a motor-lorry to Ying-p'an, from where a Turki was to go on to Tikenliq. ÖRDEK returned to the motor camp on the same day. He was rigged out in a brand-new suit, his broad Lopliq skull was crowned with a Tungan soldier's cap and he was very bustling and important. With the help of others he had rediscovered the burial ground! He even brought along some grave relics to show me: three small, beautifully woven baskets which I identified from STEIN's grave finds nearer Lou-lan, a felt cap, and some wooden objects. GEORG inquired a bit into ÖRDEK's business transactions, and it transpired that we had had to pay twice over for certain provisions; and what was more at double or treble the normal price both times. This is what the Turkis are like in this country if your luck is out. After ÖRDEK had been severely admonished, and we had refused to take his son into our service (he had been discharged by HUMMEL some time ago and now ÖRDEK wanted to palm him off on us), we looked upon this unsavoury business as closed, and concentrated upon getting to the burial ground.

On May 24th I examined a solitary grave a few li west of Camp 66. The coffin consisted of the hollowed-out trunk of a poplar, with a lid at either end. The corpse was mummified and dressed in a yellowish-brown silk coat, and had sheep-skin trousers and knee-boots. This find I have called Grave 10 (see Vol. VII: 1, pp. 55—57). Judging by the silk of the coat, this grave must date from some period later than that of Lou-lan; it cannot be older than the 7th Century A. D.

On May 26th, together with ÖRDEK and KELDI, GEORG and I rode out to the graves that KELDI had heard were to be found in the neighbourhood of Lake

a. Cemetery 5 viewed from the south, Lop-nor Desert

b. The northern slope of Cemetery 5 with its erect and tumbled down posts and dismembered coffins

In all directions from Cemetery 5 there are only low, beautifully shaped sand-dunes as far as the eye can reach

Yaqinliq-köl, some 7 or 8 km to the west. The one that was best preserved lay north of that lake, and consisted of a rectangular structure of poplar trunks (see Vol. VII: 1 Pl. I). At the northern of the shorter sides two poles had been set up and crowned with the skull of an antelope, possibly an indication that it was a Mohammedan grave, as was also maintained by ÖRDEK. I have since begun to doubt this, but at the time I did not wish to be stopped in the course of my exploration by rummaging about in a grave which was possibly that of a Mohammedan, so I gave it the go-by. It had most likely originally consisted of three graves in a row, of which only the middle one now remained in a fairly undisturbed condition.

We visited SAIT MOLLA's *satma* on the shore of the lake, and were regaled with sour milk and bread, the latter served up in a fair-sized piece of leather. The Mollah had been using this place as summer grazing for the past 3 or 4 years. In the winter he lived on the old river. The inhabitants of the country round the old Lower Tarim, which is now dried up, had had to change from agriculturists into semi-nomadic cattle-breeders. Even before that they had possessed sheep and goats, but then their grazing-grounds lay nearer their winter quarters, and agriculture was thriving. Here on the new river the reeds provided abundant pasturage, but the agricultural possibilities were exactly nil.

A little way S. S. E. there was a ruined grave consisting of a few poplar trunks alongside a stick carrying an antelope skull. Here, too, lay the skull of a horse, tied round with twigs and rags. In the afternoon we returned by the same route. It was flanked by the young woods reproduced on Pl. II b in Vol. VII: 1, and the salt lake seen on Pl. V b, in the same volume.

In the evening a *qara-buran* began to blow, and the gale continued on the 27th, 28th and 29th. Three supernumerary Turki servants were sent home; and as we had now had our flour supply replenished, GEORG and I were able to set out on our great grave-hunting expedition. The evening before, when I had turned in early in order to start by daybreak on the 30th, I was awakened by boatmen shouting that »Altmish-bulaq-tura» had arrived. This original way of referring to our much loved Chief did not lessen our joy at his speedy return from Lop-nor. We had begun to fear that his car had broken down, since he had not arrived earlier. A double-canoe was approaching, and in it sat SVEN HEDIN, CHEN, KUNG, and the cook CHIA KUEI. That evening there was naturally no sleep, but all the more animated conversation. Our position was anything but satisfactory. After 32 days, URAYIM had not yet returned from Korla with the motor oil he was to bring from there. The Russians had promised us faithfully that there would be oil for us in Korla by the middle of May; but it seemed that Russian and Turki reliability were about on a par. In our motor camp there was now only one gallon of oil, and if the small car was to reach Korla it would be necessary to rob the oil-pans of the lorries. For HEDIN had decided that he himself, with YEW and TSERAT, would leave for Korla the very next morning to procure oil.

Not until about 10 o'clock, on the morning of May 30th, did I part from the Chief and his companions, to set out in a westerly direction with the cyclometer to SAIT MOLLA's *satma* at Yaqinliq-köl. Two small salt lakes lay south of our route, and in addition we crossed a river-bed with a series of pools. This was called the Ara-tarim, and it no doubt communicated with the Qum-darya. Among the yardangs between this river-bed and Yaqinliq-köl there lay a multitude of pot-sherds of stone age appearance on salt-encrusted sand.

### *The graves along the Small River*

After a short stop at SAIT's, where sour milk and great quantities of water were consumed, we went on again at 2 p. m. in the scorching heat. We took a southerly course, first along the reedy lake and then through dunes, 2—4 m high. If it had not been for an old Turki who accompanied me with a copper can filled with water, from which I now and again got a drink, I should not have been able to plod my way through the heavy sand in this heat. Every time I climbed over a dune my shoes got filled with sand, and I had to stop and empty them continually. I approached the eastern border of a reed belt some 2 or 3 km wide. It contained small lakes, and at high water formed a connected river. This area, known as Qum-köl, or the Sand Lake, communicates with the Qum-darya. This was my first contact with what I subsequently gave the name of The Small River. The caravan had camped at a pool at the edge of the reed area.

The following day there was a violent sandstorm; visibility became very poor, and it was only thanks to an old man accompanying me that I was able to carry out the mapping of the route through the dunes, which grew in height up to 10 m. In the middle of the day, while it was hottest, we rested beside a pool. In the afternoon we reached the old Turki's *satma*. His two wives ran away and hid in one room, while sour milk was dished up for us in another. On setting out again I had to turn off to the north-east in order to get round a lake; and after this began endless wandering between pools of water among tall reeds and verdant tamarisks. I lost sight of the caravan, and came near to losing myself into the bargain, the air being thick with dust and visibility at the most 100 m. Luckily, however, I got hold of a boy from the caravan, and he put me on the right track. A river-bed 10 m wide and carrying running water had to be crossed on horseback. When the river was in flood large parts of this reed area would no doubt be inundated. Our Camp B 68, which I reached after much wandering to and fro among pools and runlets, lay near a very primitive *satma*, occupied by one ABURAHMAN, who presented us with a lamb boiled whole. We polished it off at a single sitting. In its narrow bed the brook was purling over a succession of clay sills. Some little way off, in the south-east, stood an abandoned *satma*.

On June 1st we followed the river for a while towards the south-east. In one

place it was 30 m wide, and its bed eroded to a depth of 1.5 m. On the left bank the dunes came right down to the river, while along the right bank grew reeds reaching over one's head, and tamarisk through which one had literally to plough one's way.

A Turki herdsman was engaged in shearing sheep in a brushwood pen, and using exactly the same kind of shears as those the Mongols have. He lived in a reed hut at Pataliq-köl, a lake with curiously curving narrow inlets (see Pl. X a in Vol. VII: 1). Just east of this there is a similar lake, through which flows The Small River. We made a halt there, and camped in the evening in the neighbourhood of the river, due south of Pataliq-köl. The stream, which was only 10 to 15 m wide, had not much of a current. It was on both sides flanked with reed-grown flats more than 1 km wide, and beyond these began sand-dunes. To the southwest from the day's camp (B 69) the plain opened up, giving a glimpse of several lakes. Just near the camp we found the neck portion of a red earthenware vessel, and in another place a bronze hairpin and some red potsherds. A group of ruined graves lay 1500 m N. W. of the camp, it had contained 4 to 6 coffins (Burial place 4), both hollowed tree-trunks and such as had been constructed of ordinary boards, but they had fallen to pieces, and in the way of relics I only found some shreds of silk, red cloth, and hair.

On June 2nd we continued S. S. E. over reed-grown ground and skirted the river in one or two places: it flowed through a beautiful lake of small extent. In among dunes I stumbled over a small grave field with in part well-preserved coffins (Burial place 6). From one of them I collected some silk from a woman's dress. Later on I returned to this spot. The day's rest-camp was ready pitched on the river-bank due east of the graves, and the tent was propped up with long sticks all around so as give the wind free play. Gadflies, which had come along with the animals, took a liking to the tent and kept buzzing about us poor, perspiring and panting Swedes in the most maddening way. This place was known as Qoshyaghach.[1]

That evening ÖRDEK was at long last to take us to his famous burial ground. He shaped a course N. N. E. through the low sand-dunes, and after a good 5 km we had arrived at a rounded, sand-covered hill, the crest of which was covered with quite a forest of long wooden poles. Here I was at the goal of my excursion: the burial ground on which my mind had been running ever since the middle of April. Having described it in detail in Vol. VII: 1, under the name of Cemetery 5, I need not here dwell further on this macabre spot (see Pl. 25). We remained here until June 8th, excavating such coffins as still had something to offer and collecting everything of interest from the coffins that had been robbed by natives on previous occasions.

[1] On NORIN's map Pl. B to Vol. III: 6 in this series this name is placed 26 km too high up along the river.

The heat was dreadful in the daytime, but in the nights the sand of the dunes got thoroughly chilled, and I actually caught a cold. Mornings and evenings we had water carried up from the river. On these occasions the horses always brought with them a multitude of gadflies; and on the day when I was standing at work at my plane-table I was assiduously attended by swarms of these tormenting little pests. On June 6th a sandstorm swept the camp; and on that day a messenger arrived with letters from CHEN and HUMMEL. The latter was lying ill in the main camp on the Qum-darya, suffering from blood-poisoning after being bitten by a wild boar. At the same time we also received rice, an article we had not seen for six weeks, and tobacco, of which our supply was exceedingly scanty.

In the night the storm covered us over with miniature dunes, since — there being no bare spot in the immediate vicinity of the cemetery — we had been obliged to pitch the tent on the sand, and in the morning we felt like a sand-buried city coming to life again. The messengers made the return trip to the motor-camp, running on foot, in two days.

ÖRDEK said there were some graves about 30 li to the east. This statement as to locality should, however, be taken with a great deal of caution.

On June 7th we experienced something that is extremely rare in these tracts: a downpour lasting for forty minutes, that was then followed by over an hour's more normal rainfall. (We heard later that the rain had been just as violent at the motor-car camp 40 km to the north). The dunes took on a dark even hue and the dust and sand whirled no longer.

The next day the air was crystal clear, and Charchaq and the Yardang-bulaq-tagh appeared distinctly as a couple of blue ridges in the north. We continued southward to visit the watch-tower mentioned by ÖRDEK, following on the whole the course of The Small River. We passed a *satma* called Kentala, belonging to NIAZ BAI from Charkhliq, and pitched camp B 71 at another *satma* near a branch of the river (see Pl. Xb in Vol. VII: 1), that just below this point breaks up into small lakes and is then seen to disappear among high dunes in the direction S. 35° E., flanked by beds of reeds. About 10 km farther down the river is said to form a Baghrash-köl, followed by a Kök-toghraq; and after a distance corresponding to two days' ride on horseback it is said to come to an end altogether. No-one could state the exact position of this spot, but I rather imagine it must lie near Qara-qoshun, the old terminal lake of the Tarim. Some said that it flowed to Shirge-chapghan, and some thought that it turned eastward. NIAZ BAI called it simply the Qum-darya (and, certainly, it does carry the waters of the Qum-darya). The name Yangi-darya was also used, which shows that it had become water-carrying recently. That the river existed at the time of the burial ground is evident, even if it did not have exactly the same bed. When ÖRDEK had visited the burial ground on the hill for the first time (15—20 years previously) there had been no river here.

At high water it is navigable for canoes; but it would probably be easy enough to lose one's way on the numerous lakes and flooded areas it forms in some places. Now, the level of the water was 70—100 cm below the high-water mark.

The following morning I went to the watch-tower in the south in among the dunes, 6 km distant. The wind turned so strong that sand began to whirl and visibility became poor. The tower was built of stamped clay, and was so wind-worn that its shape was that of a pointed pyramid or cone (see Pl. XIV a in Vol. VII: 1). On every bare patch between the dunes, both near to and farther away from the tower, lay potsherds, unornamented, red, and approximating to the Han type, as well as old iron and slag. Near the tower I found a grindstone slab of blue-black stone and a degenerated Wu-ch'u coin. This was the southern-most point I reached on this tour.

The morning of June 10th was so clear that I could take compass bearing to the highest peak in the Quruq-tagh, that lay at least 130 km to the north. I now returned up the river to investigate a couple of burial grounds on its western side. The one (Burial place 6) I had come across on the way down, the other (Burial place 7) was situated at a distance of only 1.7 km from the first. As I have described both of them in detail in Vol. VII: 1 I will not repeat the description here. I only deeply regretted being unable to take with me the mummy in grave 7A, that was incredibly well preserved. But the transport possibilities to the motor-car camp were too poor for such a posthumous funeral procession; and if we had really managed to drag a mummy along with us we should probably never have got out of Sinkiang. Even the grave-finds were later to give rise to considerable difficulties for the expedition.

The anthropological examination of the cranium in grave 7 B has shown that the skull belonged to a 45 - year - old man with Mongolian traits.

In my classification of these finds I have referred the graves to Lou-lan time; but Dr VIVI SYLWAN's investigations of silks from them make it necessary to date them some centuries later than 300 A. D. This also seems to hold good for some silks from STEIN's ruin L. M., that is situated 95 km E. S. E. of the above-mentioned graves. In consideration of the slight volume of The Small River, however, it is unlikely that it was this river-branch that enabled the existence of L. M. and the neighbouring ruins.

The investigation of the skull from grave 6 A in the burial ground 6 in the vicinity has shown that it belonged to a 50—60-year-old woman, and that her racial attributes are Indide, but with traits that may be Chinese. It has not yet been possible entirely to reconstruct her dress, and a complete reconstruction is probably out of the question, as it is too fragmentary in important details. But that it is quite unique is certain.

Summarizing my investigations of the graves, it may be said that the finds represent at least two different cultures. The one is Cemetery 5, the burial

ground of the autochthonous Lou-lan population, while the other is represented by the remaining small graves along the Small River, an upper class clad in silks and showing racial features from remote regions. The same difference between a local and a more international culture is found in the grave finds made by HEDIN in the delta of the Qum-darya, and also in those made by STEIN in corresponding tracts. My grave 10 struck me at first as being considerably younger than the other graves; but the difference in age between it and the burial grounds 6 and 7 is probably not so great.

On June 12th we were ready to return northwards to the Qum-darya. At the hut at Pataliq-köl we found a Turki from Yangi-su awaiting us; he was said to have been sent out by the authorities to check the amount of gold and silver I had found on the big burial ground. But his chief task was probably to requisition youths, horses, cows, sheep and money. It appeared that recruits, animals and provisions were being requisitioned *en masse* from Khotan and thereabouts, and fighting was evidently going on along the main highway following the southern edge of the Takla-makan. Meantime, the level of the water had sunk one foot in twelve days.

On the 14th, after a very trying march over the blazing hot desert, we reached the Qum-darya. GEORG's dog Pao showed disquieting signs of irritability even before the sun had reached the meridian, and tried to escape the pitiless insolation by digging himself down on the small patches of shade beside the larger mounds of vegetation. Unfortunately, we had no water with us to give him, and a little later he disappeared from the caravan. We sent out some of the men to look for him, but it was of no avail.

In the motor-car camp (camp 70) there were not many left. Both HUMMEL and KUNG had set out for Urumchi on separate occasions, and CHEN was out on mapping trips along the river. HUMMEL had left camp only the previous evening with EFFE and JOMCHA in a lorry. The two latter returned after five days, and told us how glad HUMMEL was to be convalescing in Singer's shady garden up in the Quruq-tagh, a cool paradise compared with Lop-nor. He had now diagnosed his poisoning as rat-bite fever, and considered it necessary to consult a doctor in Urumchi as soon as possible, and perhaps even to return to Europe.

During the night of June 20th the water in the river rose by 3 cm. It was only when bathing in the river that we managed to cool off a little during these burning hot days; and we were even pursued out over the water by the accursed horse-flies. One was actually only free of them *under* water.

### *Through the Quruq-tagh to Urumchi*

From Singer HUMMEL wrote that he had not managed to leave yet; and as he still had some fever he simply *must* try to get to Urumchi for medical attention. He had sent KONSTANTIN (a Solon from the military escort that the Russians in

Korla had presented us with) towards Toqsun and Turfan to try and get hold of a sedan chair for mules. He wondered if I could not come up to Singer to help, if possible. If he should get better I could always find employment with ancient relics in the Quruq-tagh. Accordingly, on June 23rd I took leave of GEORG, EFFE and the servants who were still left in camp. Little did I then suspect that we should not meet again during the expedition. The two lorries stood there like ghosts on the edge of the *sai*-surface; they had an abandoned and tragic air without either oil or petrol. With two Turkis, three horses and two donkeys I journeyed via Tograq-bulaq and Azghan-bulaq to Singer, where I arrived after four exhausting marches during which one of the horses collapsed.

HUMMEL was still running a temperature. As he had managed to get hold of a sedan chair that could be borne by two horses, and after much trouble hired two or three camels as far as Gansoho, we were able to set out from Singer's blessed little garden over the desert hills on the 28th.

This journey, that took us over Tonguzluq, Gansoho to Shor-bulaq and then on the main highway over Arghai-bulaq to Toqsun, was the most strenuous trip I have ever known. This was due to several circumstances. For one thing, the summer heat was insufferably oppressive; for another, my horse was weak from the very outset, and had not the strength to carry me for more than very short stretches at very long intervals; and finally, our provisions were short, and we had been living on pretty poor food the whole summer.

In two places between Singer and Tonguzluq there were traces of old mining operations. The two stallions carrying HUMMEL tandem-like in the chair went at an unusual pace, but their owners were urging them on the whole time in order to reach Gansoho, a matter of 51 km, as soon as possible. One had one's work cut out to keep up on foot, and both they and I were stiff-legged and tired after that day. Fortunately, we were able to stay over a day at Gansoho, where the pasturage was good. Here we had to exchange the three camels for five donkeys, which meant that the loads had to be redistributed.

As at Singer, there was a dam here behind which the spring water was collected. When the reservoir was full the water was conducted to the different fields by canals.

The following morning, June 30th, we started off in the moonlight at 1.10 a. m. After three hours, when we were well out of the chain to the north of Gansoho, the horse that was carrying HUMMEL's bier in front was too tired to go on. We rested for an hour, and the horse managed another hour's march, after which the Turkis opened a vein in the animal's nose. After this operation, curiously enough, he picked up considerably. We continued in this fashion, marching and resting alternate hours, until midday, but the horse was now so exhausted that the sedan chair had to be taken to pieces, and HUMMEL had no choice but to try riding the rest of the way to Shor-bulaq. This stretch on horseback was probably not exactly

a joy-ride for a man who had been confined to his bed for several weeks. In the hilly parts the road was flanked with the carcases of horses at intervals, and with abandoned saddles, saddle-blankets and broken off Turki rifle butts. These relics had probably been left by the troop of Russians that had taken this road to Tikenliq and Korla in connection with the offensive against MA CHUNG-YING in the spring. The rifle butts, however, could scarcely have derived from this well-armed troop; it is more likely that they had been left by some of KHOJA NIAZ' partisans who fled this way.

After 48 long km in the blazing heat we reached Shor-bulaq. To our dismay we discovered that HUMMEL's nice dog had died from a heat-stroke on the way.

The source at Shor-bulaq was dry. We began digging, but the place yielded nothing but a black, horrible soup stinking of sulphuretted hydrogen. Fortunately, we still had a little water left in our barrels, but there was not enough for all.

On July 1st I went on ahead with KONSTANTIN and two Turkis towards Toqsun to procure fresh horses for the sedan chair. Meantime, HUMMEL was to push on to Qumush and wait there. In order to lay in water for the long desert march to Arghai-bulaq we had to go to Qirghiz-tam, 20 km on the way to Qumush. The farmstead in question had been destroyed by the Tungans, and we rested in the bed of the stream. It was so deep that the banks afforded well-needed shade in the heat of the day. At 7 p. m. we set off again, travelling the whole night. Twelve hours later we arrived at Arghai-bulaq, dead-beat.

The traffic on this main road, that had been in abeyance during the civil war, was now in full swing again, but it consisted mostly of riders.

After a rest of six hours we pushed on to the vicinity of Toqsun, approaching lower and hotter tracts. During the past twenty-four hours we had come down 1,800 m. Early the following morning we rode in to Toqsun and put up at an inn. KONSTANTIN and I went immediately afterwards to the yamen to hire fresh horses and procure extra fodder etc. for HUMMEL's transport. In the bazaar-street there were the tracks of motor-car wheels, that had not been there on our arrival. We were told that they had been left by a car with three foreigners. The great question for me was now: how shall I get hold of this car? Where had it been driven? Of course, to the yamen, to which we were just on our way. We hastened our steps, and it was with tense excitement that I walked inside the gates. There was *our* small car! In one of the courtyards I met SVEN HEDIN, and his first question referred to HUMMEL. He had with him the Russian doctor SAPOJNIKOV from Urumchi; the chauffeur was TSERAT. This happy meeting has been described by HEDIN himself in History III, pp. 215—216. But what a piece of luck that we had met! If the car had arrived an hour earlier we should have missed each other, and HEDIN might have gone on to Qumush without knowing that HUMMEL was lying in the vicinity and waiting. Now, however, the car continued southwards at 10 o'clock, and I was to await its return. Horses were

procured for HUMMEL's baggage, and KONSTANTIN set off with extra fodder. As HEDIN has related, the car never got any farther than the defile at Arghai-bulaq, where it got stuck during a terrible storm with violent thunder and cloudbursts. A distant rumble and a few drops of rain were all we had of this storm in Toqsun.

On July 6th the car was back in Toqsun with HUMMEL, who had so far recovered that he had managed the distance from Qumush to Arghai-bulaq on horseback. They continued to Urumchi the same day, and I set off with the same destination the following day in an *araba*. The journey took me five days. On the way I met a couple of Chinese who were wearing exactly the same rope sandals as their ancestors had worn at the Edsen-gol 2,000 years earlier. A good example of the conservative culture of the Chinese.

Instead of driving over the pass at Davan-ch'eng we followed the river valley. The motor road had been extended, so that cars could go round one of the twin passes.

### *Homewards*

It is superfluous for me to go into all the intrigues and difficulties in Urumchi, since SVEN HEDIN has described them. HUMMEL kept to his bed at first, but as soon as his passport was in order he was to return home in my company. After long waiting we were granted permits to leave the country. Visas for Russia were easily obtained; and when an opportunity finally presented itself to start for the Turksib railway at Sergiopol with an empty Russian lorry convoy on August 12th we turned our backs on Urumchi with light hearts.

The journey home was not without adventure, but we took everything lightly, in the consciousness of leaving the war-ravaged province of Sinkiang and all the exasperating intrigues in its capital behind us. On the way I got a touch of dysentery, and I began to fear that it might be HUMMEL who would have to take care of me instead of I of him. However, a little starvation cure put me on my feet again, though HUMMEL's prescription was very nearly upset by a kind-hearted Russian waitress at the railway buffet in Sergiopol. As we ordered only one portion of soup she thought we were so poor that we could not afford two, and offered to serve us another plateful for the same money (we probably presented a sufficiently poverty-stricken appearance in our worn-out clothes, and it could scarcely be said that we were rich, for it had been extremely difficult to get hold of any foreign cash in Urumchi). If this pleasant Russian girl left us with an agreeable memory of Sergiopol, the same cannot be said of the denizens in the office of the stationmaster, where we spent the night on a couple of wooden benches, for these vermin nearly plagued the life out of us with their bites.

The Sergiopol railway station had grown into a whole community in our absence. Another place through which we had passed shortly before had also radically changed its appearance. The wretched clay huts that had formerly

constituted the Chinese frontier station between Chuguchaq and Bakhty had now been replaced by a two-storey white-plastered house with balcony and everything. But this time there was nothing of the scrupulous examination that the Chinese had been wont to carry out here with sometimes insulting liberties. HUMMEL, who was travelling in front with the driver of the lorry ahead of mine did not even need to show his passport. I was asked to get out because of my white topee (that marked me as not Russian); and I had to enter the fine house and show my passport. The inside of the building was not so attractive as one might have expected from the exterior — the room stank of opium, and the head customs official was drunk into the bargain. With a blissful smile he stamped my passport without any formalities, and seemed charmed to be addressed in his mother tongue. That it would be so easy to leave Sinkiang none of us had dared to dream. This episode, however, I regarded as a tragic tailpiece to my farewell to Chinese soil. A new epoch was opening in Central Asia, new lords from a remote centre determined Sinkiang's fate, while the Chinese were now marionettes that danced on strings pulled by foreign masters; so low had the former ruling class of the province sunk.

At the end of August we arrived safely in Sweden. Our happy years of travel were finished. And now began the difficult task of trying to acclimatize oneself to settled life and the forgotten conventions and petty restrictions of sophisticated civilization.

# RÉSUMÉ OF THE ARCHAEOLOGICAL WORK

The entire route through Mongolia to Sinkiang, with the exception of a few places that had been touched at by the ANDREWS Expedition, passed, as far as archaeology was concerned, through terra incognita. Also from Sinkiang extremely little was known about the prehistoric settlement; and it proved, moreover, to be considerably poorer than that of Mongolia. My investigations show that both the steppe and — which was rather unexpected — also the desert had had an extensive stone age culture. Altogether about 300 finding-places for worked flints and stone implements of this Gobi culture were localized in Mongolia. Some of the sites contained only a few objects, while the larger sites contained thousands. The greater part of the finds consisted of stone or flint objects, often shaped with remarkable skill, and just as frequently made of beautifully coloured material. Ceramic, on the other hand, is meagrely represented. This is partly connected with the slight occurrence of cultural layers; in the majority of cases the finds lie entirely on the surface. A few isolated painted potsherds were found; and a number of these may probably be paralleled with ANDERSSON's 3rd Kansu period, the Ma-chang stage. For the rest, the main part of the flint finds are from neolithic time; but it is not out of the question that a number of considerably older and also younger finds are mixed up in the material, which, as far as Mongolia is concerned, is still unpublished.

In Sinkiang three sites with painted pottery were found, and a very beautifully painted vase was acquired by purchase. All these, it would seem, may be ascribed to the Ma-chang stage, which thus had a very wide distribution. Most of the finding-places also in this province contain chiefly flint objects. They are mainly concentrated to the Lop-nor Desert. It is less astonishing that finds occur there, since this desert was once the delta region of the Tarim; but when one reflects upon the rich occurrence of big stone age sites in the Gobi Desert one cannot free oneself from the impression that the climate must have been considerably more favourable in neolithic time than it is now.

In the whole of the Mongolian steppe region stone graves are commonly met with, and are more often found in numbers in burial places than singly. Owing to the difficulty in getting an opportunity of excavating such graves without being stopped by the Mongols, who are opposed to all digging in the earth, it was not possible to examine more than a few. Other expeditions have had the same experience. The graves that have been excavated have not yielded any characteristic finds beyond a number of simple iron objects. The whole type of these stone graves indicates their iron age character. The circumstance that they commonly lie at or in the vicinity of sites for stone age objects is probably to be explained in the light of the assumption that the same tracts attracted settlers during different prehistoric periods. The area of distribution of the graves is less than that of the stone age sites.

Many of the oblong graves have one short side marked with large, flat blocks of stone placed on edge; and this short side is in the majority of cases turned towards the north-east.

In the north-western parts of Outer Mongolia there is a variety of steppe graves of very different forms; some have the same appearance as those in Inner Mongolia. Of so-called baba-stones five definite specimens and some uncertain specimens were found in Mongolia; in Sinkiang, one. In two of the Mongol graves one of the border stones was provided with carved figures.

Rock carvings were discovered in Mongolia in three places in the Lang-shan region, where there are said to be a further two. In Sinkiang the very comprehensive rock carving just to the south of Shindi in the Quruq-tagh was examined.

For the grave investigations carried out in Sinkiang the reader is referred to Vol. VII: 1 in this series. A résumé of the investigations on the Edsen-gol is given on pp. 153 ff. Something that is closely connected with these investigations is the ancient frontier walls situated in Mongolia far outside The Great Wall, of which three were mapped for long stretches. There is still much mapping to be done before we can be clear as to their full extent, and they are as yet as good as undated. There are, certainly, some historical data concerning the building of walls (it is known that wall-building became common about 300 B. C.); but it is exceedingly difficult to identify the few place-names given in connection with the walls. The insertion of the walls in the survey-map is rather schematic (owing to the small scale of the map), and the different sections have been joined with dotted lines to show which fragments belong together.

## PUBLICATIONS BY FOLKE BERGMAN REFERRING TO THE FIELD-WORK OR COLLECTIONS OF THE EXPEDITION

Newly discovered Graves in the Lop-nor Desert. (Hyllningsskrift tillägnad Sven Hedin, Stockholm 1935).

Något om Mongoliet i forntid och nutid. (Ymer 1935, Stockholm 1935).

Archäologische Funde. (Petermanns Geographische Mitteilungen 1935, Gotha 1935).

Arkeologiska undersökningar. (Ymer 1935, Stockholm 1935).

A note on ancient laminae armour in China. (Ethnos I, Stockholm 1936).

Archaeological Researches in Sinkiang. (Sino-Swedish Exp. Reports VII: 1, Stockholm 1939).

Lop-nor-öknens dolda skatter. Nya fynd från Sidenvägen. (Nordisk Familjeboks Månadskrönika, Stockholm 1939).

Introduction to »Woollen Textiles of the Lou-lan People» by Vivi Sylwan. (Sino-Swedish Exp. Reports VII: 2, Stockholm 1941).

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