

REPORT ON A JOURNEY IN THE NORTH WEST, OCCUPYING

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- by -

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## I. Introduction and Itinerary

The tour began on Aug. 7, as planned, by a truck journey to Lanchow and then up the Kansu panhandle to the Oilfield at Laochünmiao and the cave-temples at Chienfotung, thereafter returning to Lanchow. On the return journey after a possible visit to Sining it was planned to visit Sian and Baochi, but owing to the great delays which took place up to and including my second stay in Lanchow, I decided to return direct to Chungking by plane, as was done on Dec. 14th, visiting neither Sining nor the Sian loop. For various reasons a number of institutions were not visited on the way north, (e.g. the Universities at Santai and Chengtu, the medical college at Hanchung, the engineering college at Kuluba, and the agricultural experiment station at Wugung), and owing to the change of plans, had to be omitted on the southbound route also. At a later date it might be worth while making a special trip to Sian in order to cover these. I was accompanied by Dr E. Beltz, oil geologist, Mr Huang Hsing-Tsung, my secretary, and Miss Liao.

A detailed itinerary follows:-

	total km. travelled	km./day
Aug. 7 dep. Chungking, arr. Neichiang	230	230
Aug. 8 dep. Neichiang, arr. Chengtu	450	220
Aug. 9 & 10 at Chengtu		
Aug. 11 dep. Chengtu, arr. Chitung	641	191
Aug. 12 dep. Chitung, arr. Kuangyuen	805	164
Aug. 13 dep. Kuangyuen, arr. Baocheng	1011	206

		total km. travelled	km./day
Aug. 14	dep. Baocheng, arr. Hanchung delay due to road block ahead	1026	15
Aug. 15	at Hanchung		
Aug. 16	dep. Hanchung, arr. Wukuanho river block	1074	48
Aug. 17	dep. Wukuanho, arr. Miaotaidze spring broken	1104	30
Aug. 18	dep. Miaotaidze, arr. Shuangshihpu	1165	61
Aug. 19	at Shuangshihpu, spring mended		
Aug. 20	dep. Shuangshihpu, arr. Muihsien river road block	1244	79
Aug. 21	dep. Muihsien, arr. Niangniangba	1355	111
Aug. 22	dep. Niangniangba, through Tienshui and Chinan, arr. Biehyudjen cylinder-head gasket blew out	1511	156
Aug. 23-26	party remained at Biehyudjen while my secretary, Huang Hsing-Tsung, and I went to Lanchow on an army truck and returned with spare cylinder- head gasket		
	arr. Tungwei	1526	15
Aug. 27	dep. Tungwei, arr. Huadjialing, bent conrod, and two main bear- ings gone	1576	50
Aug. 28	dep. Huadjialing, leaving truck but taking engine		
	arr. Lanchow, in Sir Eric's truck	1763	187
Aug. 29 - Sept. 17	at Lanchow Sept. 5-7 Huang to Huadjialing and back, superintending tow in by FAU. Repairs by CIC Machine works		
Sept. 18	dep. Lanchow, arr. Hoko, ignition faulty	1811	48
Sept. 19	dep. Hoko, arr. Liangchow cylinder-head gasket blew out again	2036	225
Sept. 20	dep. Liangchow, arr. Shandan serious ignition trouble	2212	176
Sept. 21	dep. Shandan, arr. Gaotai Junction	2351	139
Sept. 22	dep. Gaotai Junction, arr. Suchow	2499	148
Sept. 23	dep. Suchow, arr. Laochünmiao (Oilfield)	2608	109
Sept. 24-26	at Oilfield repairs to truck, insertion of springs in worn piston-rings		

		total km. travelled	km./day
Sept. 27	dep. Laochünmiao, arr. Chuchinbao magneto out of order	2668	60
Sept. 28	dep. Chuchinbao, arr. Yumen petrol pump diaphragm renewed	2713	45
Sept. 29	dep. Yumen, arr. Tunhuang Oasis stuck all night in the sand	2982	269
Sept. 30	dep. Tunhuang Oasis, arr. Chienfotung	3032	50
Oct. 1	at Chienfotung		
Oct. 2	dep. Chienfotung, four main bearings gone, forced to return		
Oct. 3-27	at Chienfotung		
	Oct. 4 Huang left for Lanchow and plane to Chungking, Oct. 8-25, engine taken to Oilfield for repairs, and returned		
Oct. 28	dep. Chienfotung, arr. Tunhuang	3057	25
Oct. 29	at Tunhuang, waiting for remittances		
Oct. 30	dep. Tunhuang, arr. Anhsi	3192	135
Oct. 31	dep. Anhsi, arr. Yumen	3326	134
Nov. 1	dep. Yumen, piston broken, arr. Suchow	3473	147
Nov. 2-4	at Suchow, waiting for remittances and trying to get spare parts: henceforward to Lanchow on five cylinders only.		
Nov. 5	dep. Suchow, arr. Gaotai Junction	3621	148
Nov. 6	dep. Gaotai Junction, arr. Shandan spring broken and mended	3760	139
Nov. 7	dep. Shandan, arr. Yungchang	3866	106
Nov. 8	dep. Yungchang, arr. Liangchow battery failed, plates found to be eaten away	3936	70
Nov. 9	dep. Liangchow, arr. Yungteng	4097	161
Nov. 10	dep. Yungteng, arr. Lanchow	4209	112
Nov. 11 - Dec. 3	at Lanchow, Repairs done at Shihlidien Oilfield Depot.		
Dec. 4	dep. Lanchow, but two main bearings went almost at once, forcing return		(26)
Dec. 5-13	at Lanchow, Repairs by China Tea Co. mechanics		
Dec. 14	I left by plane for Chungking, the party to follow in the truck when ready	6000	

## II. Observations on Roads

The highway entering China through Sinkiang is, of course, the classical Silk Road of antiquity, and must be considered a communications link of the first importance, not only as far down as Lanchow, but further south-east, branching at Huadjialing on the loess highlands to Sian eastwards and to Chungking southwards. The southern road receives its other branch from Sian at Shuangshihpu.

The condition of the road between Chungking and Shuangshihpu is therefore of interest. Up to Chengtu it is, of course, well known, but beyond that point becomes more remarkable. In general the surface of all that part of it under the control of the Szechuan Highways Administration is poor to bad, but immediately after one passes on to that section of it under the control of the Northwestern Highway Administration, a marked improvement is observed. This point occurs 65 km. north of Kuangyuen.

Many of the bridges south of this point are in a rotting condition, but repair work was observed. There is one especially bad bridge at Hsindiendze 125 km. north of Chengtu.

After Chitung the scenery becomes beautiful, the Chengtu plain having been left behind, and the road, lined by ancient cedars, passes through mountainous country.

Here hard sandstone overlies shales; these weather, leaving the sandstone in bold cliffs on the exposed side after

tilted homogeneous masses of it have broken off. At 300 km. the road goes through the famous Chienmenkuan ("Swordgate Pass"), one of those famous in the Three Kingdoms period, where battles were fought by those who wished to maintain the independence of Szechuan. The pass has been ornamented with a monument on which are inscribed relevant poems by Li Po and Tu Fu.

Between here and Shuangshihpu the road runs through mountainous country all the time, along the bottom of narrow rocky canyons and gorges, and over a succession of passes, those on the NWHA side being much better engineered with less steep gradients than those on the SHA side.

One of the deceptive things about truck travel in China is that for a certain distance the road surface and grading may be equal to any European road, only to become quite suddenly of the worst possible quality. Or the road itself, or its bridges, may have been completely washed out. There are also a number of ferries before Shuangshihpu, the crossing of which may take many hours, or even days. At Baocheng, for example, there was a queue of some sixty trucks, but in such cases it was usually found possible to gain a little special consideration on account of the semi-diplomatic and governmental status of the truck, and so to go across with priority.

Between Baocheng and Miaotaidze there was a particularly bad holdup, which may be worth describing as it throws a light on travel conditions in China. At a place called Wukuanho a

bridge had been washed out, and the alternative crossing, or "bien tao" was a very poor one since the bed of it consisted of enormous stones, between which the wheels of trucks got stuck. When we arrived, the road for 2 km. on each side of the block was a seething chaos of trucks, horse-carts, postal vans, and people. A very faint effort at traffic control was being made by a highway foreman, who, however, seemed to have no real authority; according to him, the traffic on the day we arrived was all southbound, and northbound would follow on the next day. This in fact proved true, but about 9 in the morning a Chinese air force officer of aggressive personality but low intelligence, succeeded in reversing the traffic stream and bringing across a number of trucks in the wake of his car although they had literally nowhere to go on the southern side. Eventually, however, we managed to get the traffic northbound again, and by dint of stationing our party at  $\frac{1}{2}$ -km. intervals along the road on each side, controlled the traffic sufficiently for us to get across and proceed on our way after a delay of 24 hrs on the spot. After this, the exceptionally beautiful Taoist temple of Miaotaidze in its mountain gardens, was a very welcome rest.

It might be worthwhile to suggest to the Ministry of Communications that in such cases an "Incident Officer" should be sent to the spot with some traffic police. The roads in the northwest will be liable to damage by erosion for years to come. In this region, all along the road north of Baocheng

and especially north of Miaotaidze, the road surface has become very badly eroded by rainwater streams.

Owing to exceptionally heavy rains this last summer, long stretches of the road north of Shuangshihpu, between that place and Tienshui, had been washed away completely, and the "bien tao", far from being short by-ways, were tracks up the rocky river-beds for several km. at a time. I think any heavy traffic would have been impossible on this route this autumn, and indeed it will take the Chinese a long time to get it into order again.

This is about the point when one enters the loess country (wind-blown dust from the Gobi, hiding all the geological features under hundreds of feet of soil). While the road along the bottoms of valleys was frequently washed out owing to river erosion, that climbing the hills was the scene of other hazards, i.e. landslips, often leaving only just enough room for the truck to pass. In the rains, this loess country seems to be visibly dissolving, and we only just reached Huihsien, 79 km. beyond Shuangshihpu, through a vertiable sea of creamy brown liquid mud. There we found that the road further was blocked by flood, and when later we got across, we saw no less than three trucks buried in silt up to the tops of their cabs, having been caught when trying to cross the rising river. Huihsien is of interest as having a particularly beautiful mosque.

The loess does not end until Hoko, some 48 km. northwest of Lanchow, where the road leaves the Yellow River valley, and enters regions of bare rocky hills and desert. Erosion in the loess area has to be seen to be believed. Canyons a hundred feet deep run everywhere, and the hills are streaked with profound gullies like the face of a very old man.

At about 160 km. northwest of Lanchow, one gets the first sight of the Nan Shan in the shape of a very high serrated ridge to the left, part of the Richtofen Range. There is only one pass northwest of Lanchow, that of Wushaling. Much of the country here is rolling high grassland like Scotland or New Zealand, grading off into drier steppe, as one proceeds northwest. From Lanchow onwards, the road accompanies the Great Wall, on and off, which here is not, and probably never was, faced with stone, but consists of huge mud-brick walls and towers. Of particular interest, and also to be seen from Lanchow onwards are the signal tower stations of the Han dynasty, always with their main tower and five smaller fire-beacon towers.

The modern Silk Road itself is not bad as regards surface, especially in some sections, e.g. between Shandan and Yungchang. At other points, however, it has suffered a great deal of damage from the ravages of the streams coming down from the Nan Shan Mountains. Its average quality, however, is quite high. For several kilometres north of Ganchow, it is paved with bricks

from the ruined city wall of the capital of Heishui Kuo, an independent state in Han times.

It may be convenient at this point to give a list of the gowns in their cases situated along the Silk Road starting with Lanchow:

		0 km.
	Lanchow	112
	Yungteng	273
	Liangchow (Wuwei)	343
	Yungchang	449
	Shandan	510
	Ganchow (Changyeh)	588
	Gaotai (off the main road)	736
	Suchow (Chiuchuan)	812
	fork to the Oilfield at Laochunmiao	839
	Chuchinbao	884
	Yumen	1018
	Anhsi (Gauchow)	
	Here the road divides, one fork going north on to the Sinkiang border at Hsinhsinchia	1176
	the other fork going west to Tunhuang	1153
	and Chienfotung	1178,

and ultimately Kashgar. The former road, running on to Hami and Tihwa, is the classical "Road south of the Tien Shan" (Tien Shan Nan Lu); the latter, proceeding north of the Nan Shan and south of the Taklamakan desert, is the classical Nan Shan Bei Lu. In recent years, only the former has been available to motor traffic, the latter having been for many centuries merely a caravan trail. The latter, after Tunhuang, passes through Yumenkuan (the Jade Gate of the Han dynasty - that of the Ming is in excellent preservation at Djiayukuan, 30 km. north of Suchow) and enters Turkestan proper, reaching Kashgar through Khotan and Yarkand.

When we arrived at Anhsi and Tunhuang we found large bodies of peasants engaged on making this Nan Shan Bei Lu suitable for motor traffic. During the month of our stay at Chienfotung much progress was made with this road, which is now fully graded and banked as far as Tunhuang city at least. This links up with the comments on this subject by H.M.A. in the Monthly Dispatch for Jan. last. It would no doubt take a long time until the road is pushed through as far as Kashgar, but in Kansu, at any rate, there seem to be no formidable difficulties in its way, with the exception of the lack of water in the region and the erosive action of mountain freshets on the gravel fans over which the road runs.

A new aerodrome has been made at Anhsi, suggesting an anticipation on the part of the Chinese of more intense air traffic to and from Sinkiang.

The so-called "Military Guesthouses" northwest of Lanchow are really hostels built in old temples and the like for the benefit of the Russian drivers who brought in truckloads of supplies from 1937 on. They have since been turned over to the New Life Movement, but retain Russian inscriptions and fittings. In general they are clean and comfortable; the food is better than usually in China Travel Service hostels.

I may add here, for the benefit of others, a list of the places where we stayed the night on the outward journey.

Neichiang	CTS
Chitung	STS (Szechuan Travel Service very poor)
Kuangyuen	abandoned CIM house
Baocheng	Inn (CTS was full)
Hanchung	CIM (CTS was full)
Miaotaidze	CTS (excellent)
Shuangshihpu	CIC (good)
Huihsien	CIC
Niangniangba	Small inn
Biehyudjen	Small inn
Tungwei	Small inn
Huadjialing	CTS
Lanchow	Lichihshih
Hoko	Small inn
Liangchow	MG (described above)
Shandan	Inn, very good
Gaotai Junctn.	MG
Suchow	MG
Laochunmiao	KPA
Chuchinbao	abandoned barracks
Yumen	MG
Tunhuang	MG
Chienfotung	research institute
returning: Anhsi	MG
Yungchang	KPA
Yungteng	Small Moslem inn, (MG was full).

In simplification of the above, further details will be found in the article by me attached hereto, destined for Nature (Appendix A) and that by Mr R. Alley, also appended, destined for the National Geographic Magazine (Appendix B)

### III. Institutions contacted

Shuangshihpu and Lanchow:      The Baillie Schools of CIC.      These institutions, containing each about 60 boys, are among the best educational ventures which I have seen in China. Child workers are chosen for qualities of intelligence and leadership, and given a good

all-round education as well as special technical training in whatever branch, such as textile or leather technology, they are destined for. I have the greatest admiration both for the class of boy in these schools, and for their general spirit and intellectual level. There is another such school at Chengtu, which I have not seen. It would be a tragedy if this technical education movement were prevented from spreading. The school at Shuangshikpu has a fine situation among the hills, and that at Lanchow is close to the Yellow River.

Lanchow:

Medical Centre. This consists of several large institutions (a) the Nat. NW Epidemics Prevention Bureau's Vaccine Production Laboratories, (b) the Nat. NW Medical School, (c) the Nat. NW Medical Personnel Training Institute, (d) the Nat. NW Hospital. The first of these is larger than that at Kunming; it is well equipped and run, under the direction of Dr Yang Yung-Wien and its production is large. There is no shortage of agar, which is smuggled from Japan. Its laboratories are now giving hospitality to the wellknown pharmaceutical chemist Dr Meng Mu-Ti who is scheduled to start a large State Pharmaceutical Factory in the neighbourhood. See my

article for Nature appended. The Medical School mentioned above, under the direction of Dr Chi Ching-Hsing gives a specially shortened medical course in order to produce many graduates as quickly as possible for Chinese Central Asia. It is extremely ill-equipped and deserves help. The Medical Personnel Training Institute, under Dr Li Wen-Ming produces public health inspectors, nurses, vaccinators, etc. Its buildings are new and good. The Hospital is mainly remarkable for its excellent surgical department, under a brilliant Edinburgh-trained man, Chang Cha-Li, who is author of books in Chinese on surgery, and among the best of Chinese surgeons.

Ministry of Agriculture Veterinary Vaccine Production Plant. Under Dr Frank Lin this, though small, is doing good work.

Kansu Science Education Institute. This organisation was set up in 1936 on British Indemnity Funds, and was directed successively by Prof. J.B. Tayler and Dr Y.B. Mei, both of Yenching University. Its present director is Dr Yuan Han-Ching. He is generally looked at rather askance as being more of a politician than a scientist, though he has been in the past a not ungifted organic chemist.

He certainly makes no attempt to do any research now. He has, however, a couple of good, rather suppressed-looking, workers, one an entomologist, the other a botanist, who are doing something. Most of the activity of the institute is concerned with making scientific apparatus for schools, and this is very laudably carried out. There is also some attempt at popular science education by the preparation of wall-newspapers on science, changed periodically, not only in Lanchow but, as I saw myself, in other towns in Kansu also. All these activities, especially on the research side, might be more vigorous than they are, and I did not feel satisfied that the Institute has quite fulfilled the promise with which it started - perhaps partly because it is now under the Ministry of Education. Its library is good, and situated attractively in the most beautiful flower-garden in Lanchow, conveniently near the public park.

Lanchow Machine Works. A large, active, and well run works, directed by Hsia An-Shih and now newly established in extensive grounds outside the city. It belongs jointly to NRC and the Kansu Provincial Government.

Electrical Manufacturing Works and Power Station.

Both under the NRC. The former produces dry cells; in my experience it is much more successful with the larger ones used for telephones than with the smaller ones used for flashlamps. The power station is very efficiently run and produces light much brighter than that of Chungking.

Flour Mills, Woollen Mills, and Wool-washing Plant. All under KKTCO (Mining and Industrial Adjustment Administration). Nothing of special interest.

Cooperatives. Some 30 branches, including leather, textiles, fur, paper, machine, brick and tile industries (see my article for Nature herewith). An excellent impression.

Nat. NW Normal (Teachers' Training) College

Nat. NW Polytechnic College

Kansu College of Commerce and Banking

I met the directors of these; the institutions do not seem to be of much interest. The Min. of E's "run of the mill".

Nat. N.W. Library. A new institution under Liu Kuo-Chün very praiseworthy.

Laochunmiao:     The Oilfield of Kansun Petroleum Administration.

I need say little about this here, as a detailed report has been sent to the Sci. Adv. Cottee. Min. of Prodn. London as well as the F.O. (q.v.).

Briefly, the oilfield is situated high up among the Nan Shan mountains, at a height of some 7500 ft and it is organised into Drilling, Refinery, Medical, Transportation and Personnel sections. My party and I received the most generous hospitality there from the Administration. I have since made a number of technical suggestions to Dr Sun Yu-Chi, director; for which I have received his thanks.

Suchow:

Ho Hsi Middle School. This is one of the small number of middle schools set up in Kansu and Chinghai by the help of funds from the British Indemnity Board and so maintained. I got the impression that Suchow was rather over-supplied with middle schools of the ordinary type, and that it would be a very good move to transform the Ho Hsi School into a Technical School more along the lines of the Baillie Schools. The particular importance of this lies in the fact that Suchow would be the most suitable place for becoming a centre of technical training for all the peoples together, i.e. Chinese, Tibetans, Mongols, and Qazaqs. Not until some

scheme of this kind is carried through will peace and security come to these regions, as modern industrial methods alone can integrate the culture of the nomadic pastoral peoples and that of the settled agricultural peoples (see the book of Owen Lattimore, "China's Inner Asian Frontiers").

Chienfotung: Research Institute. In the small oasis at Chienfotung, alongside the cave-temples, one of three small temples is fitted out as a "research institute" under the Ministry of Education. That is to say, it has a small museum, a small writing-room, a guest-room, and a staff of local police acting as servants who spend most of their time making rubbings of certain inscribed stones for sale. There is a director, but during the month of October, when we were there, he was absent in Chungking. Acting-director was Lo Chi-Mei head of the photographic section of Central Publicity, engaged on a photographic survey of the frescoes. This expedition was very friendly and gave me much help, developing my film and even providing me with fresh film. Relatively little attempt is made to look after the caves. These are free for inspection and/or damage by any comer - a worrying state of affairs now that the new motor-road has reached

Tunhuang for the number of visitors increases monthly. A good deal of the plaster frescoes have fallen down (though very little, of course, in relation to the extent of the whole) and these are just left where they lie, instead of being carefully stored in the museum and labelled. Tang tiles such as those which cover in thousands the floors of the caves, are made to serve as paving in the institute and even for the basest uses. Sand is again drifting into the lowest series of caves and spoiling the frescoes. I am writing to Fu Sse-Nien about this, and also, very discretely, to Chen Li-Fu, expressing my delight at having been there, and my fears of more extensive visits by the unenlightened now that a new through traffic route comes so near Chienfotung. I attach hereto a short account of the principal themes of the fresco paintings, written by myself, and destined ultimately for an article in some learned journal if it turns out that we observed anything overlooked by Stein or Pelliot (Appendix D); and also an account by Mr R. Alley, which may be published in Asia (Appendix E). It may be of interest to add here that the chief Lama in charge of the caves' religious use is a dear old man of the name of Yi, now over 80, who has been there since the age of 12, and remembers them all,

Stein, Pelliot, Hedin, and the missionary Misses Cable. I felt a faint surprise he did not remember Marco Polo, who did, in fact, pass by that way.

In the course of the tour, I delivered the following public addresses:-

Talks at the Baillie Schools, both at Shuangshihpu and Lanchow

Lecture to 2000 students in the Kuomintang hall at Lanchow

Lecture to about 100 technical experts at the Oilfield, Laochünmiao

Lecture at Lanchow to some 200 officials of the Kansu Provincial Government, attended by Gov. Ku Cheng-Lun himself, on "Science and Civilisation in East and West". This was one of the most successful of such occasions, as the translator was excellent, and the audience very interested - I wish I had been able to speak to such people in other provinces also.

Talk to the Lanchow Rotary Club lunch on the possibilities of the northwest.

Three lectures to the Lanchow Medical Centre on my own subject; very good and keen audiences.

Lecture to the CIC NW Federation on science and society with reference to the northwest.

Some words may be added here concerning interesting personalities met in the northwest. In general, I heard much, when in those parts, especially from the American consular officer in Lanchow, Mr E.E. Rice, about the strict enforcement of the rule that no westerner shall be entertained by Chinese officials except in presence of an official of the Waidjiaopu

or a member of the secret police. All I can say is, that if such a rule exists it is not applied in my case, as I frequently attended dinners composed solely of medical men, engineers, or the like.

In Lanchow I found Governor Ku Cheng-Lun an extremely charming host at several parties, and I met a number of his staff, among whom the Commissioner of Reconstruction, Chang Hsing-I is undoubtedly the most remarkable. I am glad I have since been able to furnish him with a lot of data on hydrogeology, so important for the arid areas of the province.

I also received every kindness from Liu Tong-Lun the dapper Russian-speaking Assistant Commissioner of the Waidjiaopu in Lanchow. It is said that he applied for the post of Commissioner, but did not get it, which seems to me a pity, as no one more suitable for the post could be imagined. Yang Kung-Chao chief of the NRC in Lanchow, is an able mining engineer, but constantly ill, I fear from tuberculosis. Chang Kuan-Lien northwestern district director of the CIC federation, is also an extremely able and attractive man.

One day an interesting tea with the British returned men was arranged. Apart from Miss Liao, who was with me, there were Chang Cha-Li, the surgeon already mentioned, Li P'ei-Ling an able pathologist, at that time with the Epidemic Prevention Bureau, but since left; Hu Hsiam-Bi

a veterinarian; and Yu Kuang-Yuen

a dermatologist.

Among westerners, I spent a good deal of time with Dr Beltz, the oil geologist, who accompanied me as far as Lanchow; Dr Dykstra the potato geneticist, then on his tour of inspection; Dr Lowdermilk the erosion expert, likewise; Mr Constantinov, the very pleasant Soviet Consul and Commissioner; and Mr Bairnsfather of the customs. Since in religion, as in science, there are no nationalities, I thought it not unfitting that I should call on Bishop Civelli and his Italian fathers in Hanchung, and on Bishop Buddenbrock and his German fathers in Lanchow. All are in a state of semi-internment, but the latter have been especially leniently treated, as the Lanchow chief of police until recently was a German-returned student. Both groups entertained me charmingly. On my second visit I stayed at the CIM Hospital with Dr and Mrs Hoyt; an excellently run institution, which includes a leper colony. Mrs Hoyt's tragic death from typhus occurred just after I left; she had 6 children in Japanese internment. While at Lanchow I also saw Mr Collins, the American professor of English at Nanwenchuan, who was staying with the fathers, and was fortunate to meet Col. Gillam, the US Army typhus expert, who with Mr Nichol of the American Red Cross, passed through Lanchow while I was there.

Another group passing through was the economic and scientific expedition

of Dr Lo Chia-Lun. I met Wu Wen-Tsao and other members of its

staff. I also met Ku Chien-Chi an animal husbandry expert, now chief agricultural adviser to the Sinkiang government. All these have repeatedly expressed their wish that I should visit Sinkiang during the coming year, by plane, as general scientific adviser. If the invitation is further pressed, it would seem inadvisable to decline it.

#### IV. Economic Observations

From Liangchow northwest up the panhandle the proportion of Russian goods in the shops steadily increases to a maximum at Suchow, competing with a flood of small Japanese and Shanghai-produced consumer's goods. Now that Russian trade with Sinkiang is said to have stopped, no doubt these goods are stocks which are being sold off. They include soap, pencils, canned fish, writing-paper, matches, razor-blades, shaving-soap, toothpowder, coffee, and sugar, all of the highest quality, as we ascertained by personal trial. The prices compared very favourably with those for similar articles in Chungking. The Japanese products include textiles, especially cotton goods, soap, medicines, porcelain, non-ferrous metal goods, thermoses, mirrors, etc.

The view of Mr Alley and other CIC officials with whom I talked was that all this is paid for by sales of Kansu wool to the Japanese. If only the textile industry in the panhandle could be encouraged by financing of numerous textile cooperatives,

it should be possible to save the wool from getting into Japanese hands. It seems absurd in view of the cold climate of the province, that so much wool should be exported, and only thin cotton textiles be received in return. This question of the leakage of wool to the Japanese seems to merit a thorough investigation by whatever department of HMG is at present interested in Sino-Japanese trading.

In general the standard of life of the Kansu peasant is distinctly low. Even in the coldest weather the children wear no covering on the lower part of their bodies. One gets the impression of a ragged population huddling on k'angs in houses of crumbling mud brick, and expending their ill-nourished strength on a perpetual struggle against the encroaching desert.

The great days of the Sinkiang trade seem to have gone, though there are plenty of Turki shops in Lanchow selling Sinkiang specialities such as raisins and Hamigua. In Shandan, an extremely pretty old town, as yet not ruined by the modernising mania of the Kuomintang, which erects wood and plaster shop-fronts of a ghastly uniformity and cuts roads which shear off the corners of beautiful old temples, one may see numerous large and exquisitely carved entrances to warehouses of firms in the oldtime Sinkiang trade. Today, however, besides the truck transportation, there are thousands of camels employed, and we passed many a camel train along the Great Wall, (see my Nature article, Appendix A).

Mr Alley has allowed me to attach also to this account, his own, much more expert, description of trade in the Kansu panhandle; which is in fact a report to CIC headquarters (Appendix F).

We personally observed the movement of Honan refugees to Sinkiang, which was being carried out in Govt. trucks. It is said to cost \$ 40,000 NC per person. The refugees seemed cold but were given good meals in the "Military Guesthouses".

#### V. Military Observations

The outstanding observation was the almost complete removal of Chinese troops from the panhandle during Sept. and Oct.

Shortly after leaving Lanchow on Sept. 19th we passed many northbound columns of Szechuanese troops, unarmed, and in very poor condition. According to rumour, they were being withdrawn from the power of Szechuanese "warlords" and sent to strengthen the Central Govt.'s power in Sinkiang. Many were dying; I heard of 88 dying in one night at Shuangshihpu just before we got there; and squads of very ill men vainly trying to keep up with the columns were often seen. At Liangchow a large squad of soldiers quite blinded by trachoma was seen, (cf. the desperate need for supplies, and proper distribution of, sulpha drugs in China). Most pathetic of all were the numerous small boys in uniform of 11 or 12 upwards, trudging along with the columns, many far from fit, presumably present

as substitutes for their fathers in the conscription rolls. This seems a definite abuse, which the Chinese army ought to put a stop to. We had occasion to treat one such boy who was so eaten away with scabies, that he could hardly walk.

In this connection we confirmed all other accounts of the hopeless deficiency of the Army Medical Administration at the periphery, praiseworthy though it is at the centre. At Chienfotung, for example, we had to treat some typhus cases among the young soldiers there, there being no army doctor within 500 km. or more.

The aftermath of last year's Moslem-peasant rebellion in Kansu was seen at Yungteng and Liangchow, when troops were leading in deserters who had taken part with the rebels and since been recaptured. They were being sent to Lanchow to be shot. Certain scenes when their womenfolk were trying to bring them food or clothing were reminiscent of the stories of the Jacobite risings in Scotland, in the eighteenth century.

Also going northwest in the middle of Sept. were what looked like 7.5 field-guns, truck-drawn, of which about a dozen were seen. But they were not encountered later on. I was told they were going to strengthen the protection of the Oilfield.

From the 21st till the 30th we passed many columns of well-equipped khaki-clad troops coming the opposite way, i.e. south-east. These were armed, mounted, in good condition, and carried a variety of equipment, e.g. entrenching-tools, field

telephones, etc. At first we thought that they came from Sinkiang but later realised that they were the garrisons of all the panhandle cities northwest of Lanchow. Before long we began to find their empty barracks everywhere, e.g. at Chuchinbao, Yumen, Gaotai, Anhsi, etc., and had to stay one night in one of these. Besides the columns marching and riding, there were very many troops in trucks. Other indications of this move were the extremely small guard left at Chienfotung and the diminished proportions of the Tunhuang garrison (see below). Some real Sinkiang soldiers were met with at Suchow, when a couple of truckloads of officers, dressed in grey uniforms of excellent quality Russian cloth, with fur hats and felt topboots, stayed in the same guesthouse.

Much later, on the 9th Nov. we met a battalion of the blue-clad Szechuan troops still moving northwest, still unarmed, and apparently reduced in numbers but looking rather fitter. This was at Wushaling Pass, 180 km. northwest of Lanchow. They might have been the same troops as those we had seen south of Lanchow, e.g. at Wukuanho in August or September.

If the panhandle troops were being concentrated on Lanchow, it may partially account for the failure - so far - of another Moslem-peasant rebellion to break out this winter. The panhandle was, however, left quite unprotected, and may still be so.

Returning to Lanchow, on Nov. 10th, we noted, about 78 km. north of Lanchow, around the small town of Hongchüngdze, and all the way as far as Hoko (48 km.) considerable Chinese army activity in building small forts and machine-gun posts to the northeast of the road.

#### VI. Political Observations

The aftermath of the Moslem-peasant rebellion of last winter is also seen by the ruined condition of the majority of the villages on the high loess hills between Tienshui and Huadjialing.

The most interesting rumour being spread when I was in Lanchow was that the Shensi Communists were going to join in league with Nanking. The inherent incredibility of this did not prevent its having a wide circulation. I thought I detected a faint uneasiness at Lanchow in Provincial Government circles about possible ventures in Kansu by the Communists, and Mr Bryan had the same thing to say, only more so, about the Provincial Government people in Ninghsia. Indeed, could the Communists have made a deal with the Ma in Ninghsia, and with the Sinkiang government, and had they been strong enough, they could have scored an enormous strategic success by taking full possession of the panhandle.

Just before I left Lanchow, it was rumoured that Sheng Shih-Tsai had executed a wife, and was about to execute a

nephew, for being under the orders of a political party rather than himself - unfortunately, which political party was not stated. The only positive fact which I noted concerning Sinkiang was that all the returning members of Lo Chia-Lun's mission that I met spoke in the highest terms of Sheng Shih-Tsai, saying that he was a genius, had marvellously improved the province, etc. etc.

One point of considerable interest emerged from an interview which the somewhat innocent Dr Hoyt had with the head of the Medical Centre at Lanchow, Dr Yang Yung-Nien (both of whom have been referred to above). Dr Hoyt went to ask his opinion as to whether missionary hospitals were still desired by the Chinese; since he takes the very sensible view that they should now be handed over to the National Health Administration if that is desired. The reaction of a very responsible provincial official of Weisengshu was therefore interesting. Dr Yang said that on no account should the mission hospitals close down; it was vital that they should continue to operate, for a period of prolonged civil disturbance might occur at the end of the war, during which the organisation of the Weisengshu might be unable to function, and in these circumstances the mission medical personnel would be essential to China.

Mr Bryan will probably have something to say about the state of intellectual liberty in Kansu. The rumour there was

that young people of leftist opinions were simply arrested and without trial thrown into the Yellow River at night. I was not able to find any firsthand evidence of this kind of thing, however.

In another memorandum I have given some account of the characteristics of the principal political groups of the Kuomintang, and in it I mentioned that of them all the CC group is the most anti-foreign. During my first stay in Lanchow, a clash occurred between the Manager of CNAC, a PS man, and the chief of police, the latter insisting on despatching a load of melons to the Ministry of Finance at the last moment, and the former refusing either to overload the plane or to take any passengers off. Accordingly the manager was imprisoned, and later dismissed, his place being taken by a CC man, Ku Chi-Hsin. This new manager was also, it seems, having a very difficult job, since no proper priority board exists at Lanchow, and seats are allotted on all sorts of extraordinary principles. In spite of all my efforts, I had been unable to get my secretary off to Chungking, so that I myself could return via the various institutions which I had missed on the outward journey; and when I at last decided I must come by plane myself, Mr Ku was on the whole unhelpful. Even with special aid from the Governor's Secretary (and acting Governor, Li Shao-Ling) I doubt if I should have got away

if a friend of mine, the painter Wu Tso-Rjeng whom we had taken to Chienfotung and back, had not happened to make a sepia sketch of the chief of secret police, Chen I-Ming the day before; that settled it.

#### VII. Observations on non-Chinese peoples

Of the Tibetans we saw little, though they are not uncommon in the streets of Lanchow and the other panhandle cities. But of the Qazaqs and Mongols we saw a good deal.

The Mongols live on the steppe and near-desert around the oases of Anhsi and Tunhuang in some number, moving their yurts, from time to time, along the foothills (San Wei Shan). While we were staying at Chienfotung, several of them visited us from time to time, and we came to like them very much. One whom we got to know, called Lobraun Jaartson, could speak tolerable Chinese. These Mongols belong to the Sining Banner, and write and read (when they do so at all) Tibetan, not Mongolian.

The Qazaqs, pronounced Hasa by the Chinese, live in the Nan Shan foothills rather than on the flat desert, and are of similar culture to the Qazaqs of Qazaqstan in the USSR, though presumably far less civilised. They are much in evidence in the streets of Tunhuang, Yumen, Suchow, etc. They had the misfortune to back the wrong side, being Moslems, in one of the Sinkiang civil wars, as a result of which they were driven out

with the aid of Russian planes. They are an extremely fierce people, well-armed, and very non-Chinese in appearance, of white bronzed skin and western features, especially noticeable in the women. Their pointed hats are rather like those of the Mongols, and they wear long-skirted fur coats and top boots. Their eyes tend to greenish and the men have little pointed beards.

While we were at Chienfotung a company of 300 rifles of the Qazaqs were living a day's ride away through the hills, and whether they might stage a raid on the oasis was a fruitful topic of conversation. Nothing, however, happened. However, they were constantly raiding Mongol encampments, killing the families, and driving off their livestock; this happened several times while we were there.

It was of interest, therefore, that the town magistrate of Tunhuang, Chen Bang-Chi in social meetings with us, decidedly took the part of the Qazaqs, saying that the Mongols were stupid and decadent and should look after themselves better. His attitude may have been affected by the fact that he had (or was said to have) only 500 soldiers to guard the whole city and oasis, but we also formed the impression that the Qazaqs were managing his caravans of wool in crossing the desert to the Japanese for him.

Just as we were leaving, a Chinese general arrived by road, and the Qazaq leaders were given an official dinner by him and the magistrate.

### VIII. Transportation

The truck allocated to me by the RAF, a 2½ ton chevrolet lend-lease 1941 "Master" model, was a very good one as far as body, springs, tyres, etc., are concerned, but not as regards the engine. From the itinerary it will be seen that we had 8 major breakdowns in the course of 4200 km.:-

(1) Cylinder-head gasket between Chinana and Biehyudjen.

This would not have been serious if we had had a spare one, but Sir Eric Teichman had taken the only spares. As we found that in the old gasket, two cylinders, communicated with the exterior and the other two pairs communicated with each other, it is hard to believe that this would not have been found if the engine could have been given a thorough overhaul before we left Chungking.

(2) Bending of conrod and loss of two main bearings at Huadjialing. I attribute this largely to the refusal of Sir Eric's two drivers to help our driver after returning with us and the spare gasket to Biehyudjen. After single-handed assembly, an oil leak developed, and we wrongly took their advice to push on up the mountain to Huadjialing. It appeared later that the crankshaft was also very slightly bent at this time.

(3) Second blowout of cylinder-head gasket at Liangchow. This did not long delay us, as we had a spare.

- (4) On reaching Laochunmiao, the performance of the truck, hardly able to move at all on top gear, was so bad that the Oilfield Machine Shop took it down and inserted springs in the worn piston-rings in the belief that they were the cause. However, it appeared later, at Yumen, that a faulty petrol pump diaphragm was the main reason, and when this was changed, the truck went very much better.
- (5) On leaving Chienfotung, hardly had we gone 2 km. into the desert than no less than 4 main bearings went, although the crankcase was full of oil. This was extremely fortunate in one way, as we had 139 km. before us with no drinkable water, but it necessitated a stay of close on a month at the remote oasis of Chienfotung. The engine was taken to the Oilfield (some 450 km. away), the bearings rebabbitted, and the engine returned. An Oilfield truck was specially sent for both journeys, and the repairs, like those previously made at Laochunmiao, carried out most kindly free of charge by the Kansu Petroleum Administration.
- (6) Between Yumen and Suchow, towards dusk, in very wild country with abundance of wolves, a piston broke. Our driver and mechanic, however, were able to take the engine down and reassemble it without the broken piston, so as to reach Suchow about 11 p.m.

(7) Creeping back to Lanchow on 5 cylinders only, our troubles were increased considerably at Liangchow by the complete failure of the battery, the plates of which turned out, on inspection, to have been badly eaten away. This also could have been discovered if the truck had had an overhaul before leaving Chungking. However, a spare battery was lent us by the Oilfield Depot at Liangchow, and by the aid of it we were able to reach Lanchow, where a "new" one had to be bought.

(8) After nearly another month of repairs at Lanchow at the Shihlidien Oilfield Depot, by whom we were given a true crankshaft from another truck to replace ours, we again set out, but had only accomplished 13 km. south of Lanchow, when two main bearings went again, although they had only recently been rebabbitted, and the crankcase was full of oil. This forced another return to Lanchow, where repairs were carried out by the mechanics of the China Tea Co., a convoy of which happened to be in Lanchow at the time.

There seems to be no full explanation of this succession of calamities. A thorough overhaul in Chungking before leaving (for which I several times expressed a wish) would have saved many weeks, and even months, of my time, and many thousands of dollars in purchase of spare parts on the Chinese market at Lanchow. At the same time there is no doubt that we left

Chungking seriously deficient in spare parts (see below). Such an overhaul, too, would have detected the faulty gasket and the wornout battery; it might also have detected the weak piston, which, after its breakage, we discovered to have been cracked half round the inside.

Subsequently a causal sequence of events may be traced to the uncooperative attitude of Sir Eric Teichman's two drivers. The resulting oil leak bent one of our conrods, burnt out two main bearings, and apparently twisted the crankshaft slightly. To this might be attributed the loss of four main bearings near Chienfotung and the loss of the piston between Yumen and Suchow. But it will hardly explain why two more bearings went after a trued crankshaft had been put in.

I feel it is necessary to say a word about possible collusion on the part of our driver. In my opinion, this is absolutely ruled out because in every case the repairs were done by a different organisation with which he could not have been in contact beforehand, and more particularly in several cases by the Kansu Petroleum Administration which did not accept any payment at all. Moreover, when we bought spare parts we did so at a variety of shops, and we did it ourselves. Lastly our driver was subject to great discomfort, amounting to hardship, in the journeys he had to make to and from the Oilfield across the desert, in severely cold weather, for which, in spite of a special clothes allowance which I had given him, he was not sufficiently warmly clad.

On the contrary, I have nothing but praise for the work of Kuang Wei. Mr Rewi Alley, of CIC, who accompanied me on my journeys northwest of Lanchow, and whose experience of truck transportation in the conditions of blockaded China must be second to none, considered that the truck could not have been handled and attended to better. Moreover, however difficult the situation, Kuang Wei was always cheerful and intensely industrious, working from dawn to dusk on the engine when necessary, and hardly to be persuaded to leave off for meals. I formed as high an opinion of his character, as a low one of the two drivers of Sir Eric Teichman, and I think the latter was doubly fortunate in having no breakdown before Tihwa, as they would have been but a broken reed in any awkward situation.

Northwest of Lanchow, we were very kindly loaned the services of a mechanic, Yu Hsin-Yuing, by the Director of the Kansu Machine works, Dr Hsia An-Shih. We paid him only the daily bonus, not a salary, and he also worked very well and bore all the troubles and discomforts without complaining.

#### IX. Equipment and Support

Looking back on the journey, I have formed the opinion that the expedition was definitely insufficiently equipped. For advice I naturally relied most on Sir Eric Teichman, but I realise now that though familiar with the body of the province of Kansu, and of course with the Gobi itself from

Peiping to Hami via Etsin Gol, he had never previously travelled through the Kansu panhandle or corridor, and therefore none of us realised that northwest of Lanchow the road simply links a succession of oases. It therefore runs through considerable stretches of desert, keeping the Nan Shan (Chilien Shan) Mountains (snow-covered in autumn), which guard the high Tsaidam plateau, to the southwest, and the open desert spaces of Ninghsia to the northeast. Hence there are many stretches of 50 km. without drinkable water, and the longest stretch, between Anhsi and Tunhuang, reaches 140 km. Moreover, the population is naturally extremely sparse, and one may see no one the whole day except the drivers of a couple of camel trains, and half a dozen peasants with their mulecarts. Other trucks on the road are few, especially northwest of the village of Hoshackou, where the branch road to the Oilfield at Laochünmiao leaves the main road.

I should go so far as to say that it was little short of folly on our part to make an extended tour in these regions without more equipment than we had, and the details are worth putting on record in view of possible future trips by others in course of duty. We ought to have taken (a) desert equipment (b) much more canned food than we had (c) more spare parts for the truck (d) a servant able to cook (e) a mechanic (f) firearms (g) someone familiar with the Kansu dialect (h) camp equipment.

As regards (a) I refer to field-glasses (of which Mr Alley had only a very poor pair), water-drums, and sand-boards (which we eventually obtained by buying cave-temple doors from the Chienfotung Lamas). Chains we had, but sand-boards are much better. We were stuck many times in the sand besides the night we had to spend outside the Tunhuang oasis.

As regards (b) we had a small sack of cans very kindly supplied by MOI, but in view of the sparseness of the population and the aridity of the country, conditions so widely different from the Szechuan to which we are accustomed, that we should have taken two or three times as much at least. Fortunately, we were able to buy good Russian canned fish.

As regards (c) I list here the spare parts which must be regarded as indispensable for such a 6000 km. tour:

	necessary	carried by us
crankshaft	1	0
conrods	3	0 (2 bought on tour)
pistonheads	2	0 (1 bought on tour)
piston rings, outside	6 sets	0 (6 sets bought on tour)
piston rings, normal	6 sets	0
main bearings	3 sets	0
crankshaft bearings	1 set	0 (1 set bought on tour)
cyl-head gaskets	4	0 (2 bought on tour)
valve space gaskets	6	3
side valve space gaskets	6	0
roll cork	1	1
roll asbestos	1	0
spark plugs	18	3 (10 bought on tour)
fanbelts	2	1
magneto	1	1
carburettor	1	1
battery and acid	1	0 (1 bought on tour)
elec. light bulbs, box	1	0
front light glasses	2	0
crank handle	1	0
clutch plates	3	0
brake linings	6	0 (4 bought on tour)



two months association with our party, and proved invaluable. The former is a Kansu boy himself, and both of them undertook the provisioning of the party at Chienfotung, riding into Tunhuang city, some 15 miles across the desert, on donkeys, every 5 days, and bringing back the supplies. This was a task not entirely without danger, in view of the prevalence of Qazaq bandits in the region and the quantity of wolves on the Kansu deserts at twilight and after, especially as winter draws on. I am anxious to help these two boys as much as possible, and have strongly supported a proposal from CIC that they should proceed to England for further training in textile technology.

As regards (f) the question of firearms was raised when I was in India, but it was regarded as quite unnecessary to have any here. Nevertheless, the north and northwest of China are very different places from the south and southwest. Owing to the low density of population, the wide distances between cities, and the prevalence of animal transport, a distinctly "wild west" atmosphere is unmistakable. The oasis of Chienfotung, for example, was guarded when we were there only by 15 soldiers and a "pai-chang", though some 800 well-armed Qazaqs had their encampments a day's ride away. The Photographic Survey Mission from Central Publicity were armed with rifles, but there were only three of them. Had the Qazaqs attempted a raid on the oasis at night, they would certainly not have sent their full body, and a few shots from the temples might have

made them think that further trouble was not worthwhile. They inspected our truck closely at night on another occasion, when it was stuck in the sand outside Tunhuang Oasis, and when we were sleeping inside it, but seeing the two flags on the front, and probably concluding that it was full of soldiers, they rode away. Moreover, our attitude towards wolves, from which on one occasion we literally had to run when out walking in the desert one evening, would have been somewhat improved if we had possessed as much as one service revolver between us. Then a sporting gun would have been of the greatest value. Near Chienfotung, during the month of our enforced stay there, we saw abundance of partridges and wild argali sheep, the addition of which to our meals would have greatly ameliorated the monotony of our diet.

Finally, as regards (h) we were in constant need of camp equipment. During the breakdown at Biehyudjen, where the truck was stuck some miles from the village, the party had to sleep under and around it in spite of rain, and the same discomforts applied at Baocheng, where campbeds had to be put up in the yard of an inn without shelter though rain came on; and on several other occasions. A tent big enough to hold three should certainly have been carried, and if possible some cooking equipment too. I learnt afterwards that the RAF were disposing of such equipment at Chengtu, and much regretted that some of it could not have been secured for the Scientific Mission.

The only other question arising in this section is that of support. After the breakdown near Chienfotung on Oct. 2nd, and the telegram sent on that day to the Embassy, appealing for funds, no remittance was actually received till we reached Suchow on Nov. 2nd a month later. This seemed a rather long time to me, as I had to borrow from Kuang Wei and Mr Alley in order to keep going, but I found afterwards that my first telegram of Oct. 2nd had been delayed and was not received by the Embassy till the middle of the month. However, the plan of sending a remittance through the Post Office was in any case not a good one, as it caused further delay and it was only through the special kindness of the postmaster at Suchow, Mr Liang I-Long, that I was able to get it there. Otherwise I should have had to have waited another fortnight for it to reach Tunhuang from Suchow by ordinary mail. The better plan would have been to have ascertained from the Kansu Provincial Bank in Chungking whether they had a branch in Tunhuang, as in fact they have. I would suggest, from this experience, that in future remittances should in general be sent through the Bank of the Province in question, an arrangement which I should imagine the Bank of China in Chungking could easily make.

ADDENDUM TO REPORT ON THE NORTHWEST TOUR, AUTUMN, 1943

Lectures delivered:

1. Baillie School, Shuangshihpu      speech: "International Technical Cooperation".
2. Lanchow students, about 2000      "Science in the United Nations War Effort"
3. Kansu Petroleum Administration staff, Laochunmiao  
"Prospects of Science and Technology in China"
4. Kansu Provincial Government officials,  
in presence of Governor Ku Cheng-Lun      "Science and Democracy"
5. Lanchow Rotary Club      "The Development of the Northwest"
6. Northwest Epidemics Prevention Bureau staff  
"New Discoveries in Morphogenetic Hormones"
7.                    - do. -      "The Mechanism of Differentiation"
8. Chinese Industrial Cooperatives,  
NW Federation      "Prospects of Science and Technology in China"
9. Northwest Medical Personnel  
Training Institute      "New Advances in Medical Science"

Extracts from Journal of the NW Tour

N.B. This tour started in the summer of 1943. After many troubles with the 2½-ton Chevrolet truck which we were using, we successfully reached Lanchow, the capital of Kansu province, and the nearest large city to Central Asia. There we worked for some time visiting all scientific, technological and cultural institutions, while Edward Beltz, the American oil geologist, who had come up with us from Chungking, went on northwest to visit the oilfield of the Kansu Petroleum Administration (KPA), a constituent part of the National Resources Commission and so of the Ministry of Economics. Eventually, in September, it was my turn to visit the oilfield, so we set out up the Old Silk Road, leaving Liao Hung-Ying behind to put in a period of work at the Baillie Technical School of the CIC (Chinese Industrial Cooperatives), and taking on Rewi Alley, the New Zealander who has been described as their founder, ~~and~~ mainstay and sparkplug - which is no overstatement.

Having completed my work at the oilfield, we turned from geophysics and hydrocarbon chemistry to archaeology, pushing on up the Old Silk Road to visit (as arranged with the historians and archaeologists of Academia Sinica) the famous cave-temples of Chienfotung (the Thousand Buddha Caves) near Tunhuang, on the ~~border~~ border of Sinkiang and Kansu.

The narrative which follows covers the period from Lanchow to the furthest northwest and back to Lanchow.

Journal of the NW Tour

1943

Sat. 18th. Sept. dep. Lanchow. Up at 6 am, packed all on to truck, got the bonnet put on at Mr ~~Hu~~ Liu's. Bkfst. alone with Hung-Ying at her place; thought about Ringstead Mill and John Cornford's poems exchanged.

Picked up Rewi Alley and two boys from Baillie School (CIC), Sun Kuang-Chun and Wang Wen-Sheng, the former from Honan (a cave-dwelling earthquake orphan), the latter from Kansu and knowing the local dialect well. Left about 10 am. Took on petrol at Shihlidien KPA depot (manager Tan Chi-Fei). But engine not going well, no power, feed or ignition wrong somewhere.

19 km. Anningbao. Scene very like California with peach trees and many Chinese date (really "jujube") trees along the remains of the old Great Wall. Picked and ate them during frequent stops owing to engine. Dry burnt land.

Along the Huang Ho valleys, loess denuded showing slanting strata of red conglomerate. Finally Kuang Wei and Leo Yu made all 6 cyls. fire by arranging a spark-gap outside the plugs, very queer.

Got into Hoko about 5 pm, only 48 km. from Lanchow and 68 mi from Yungteng. Control sta. quickly passed through. Supper at tiny inn. Bathe in river lovely at twilight. Lost Rewi's soap. Changed film in dark and ate one of Hung-Ying's mooncakes as had not enjoyed supper much. Slept on tables in the inn, as new bus station thought dangerous in this wild part of the country. Pretty comfortable night under the CIC blankets.

Sun. 19th.

6 am bkfst. coffee, bread and honey, off 7 am, engine now pulling well. Up landscape of lovely pastel-coloured red grey blue green valley and hills, tributary of the Huang Ho. Passed many columns of northbound Szechuanese tommies going to ~~Szechuan~~ Sinkiang probably, and probably never come back. Many young boys of 12 and up with them, probably taken in place of older conscripts. Some men very sick tottering along in small groups behind, trying to keep up. 88 died in one night lately at Shuangshihpu.

At Hongchengtze visited rustic Buddhist priory with 1/2 doz. monks and stage for annual plays at New Year time. Rewi and I welcomed by them kindly.

10 am arr. Yungteng. Loess ending now. Rebel soldiers being taken to Lanchow in bonds. Tibetan women who didn't want to be photographed.

1 pm, km. 134 med E.B. on a KPA truck stuck for a few minutes, southbound. Nice talk - expressed the opinion there are great possibilities in the Kansu oilfield. Only one profile known and that not fully.

More borings wanted. Awful muddle about distilling and cracking apparatus, the former sent when the latter was really wanted.

2 pm stop to fix plugs.

163 km. first sight of very high serrated range on the left, first part of the Nan Shan (Richtofen Range), fine! High grassland like New Zealand or Scotland. Many sheep. Tough little shepherd boys wearing fur cloaks and nothing else. Road always accompanied by remains of the Great Wall and its periodical towers on the right. Thunderstorm over the Chilienshan, part of Nan Shan, very impressive.

Wushakuan (Black Crow Pass) at 179 km. Down to Anyuen village, where met Eaton (CIM man from Liangchow) and had tea with bread and honey while Lao Yu's friend pounced on our mag. and fixed it by retarding the spark.

Reached Kulang about 6 pm at the foot of the valley. Engine now running normally. Decided to go on 60 km. from this inhospitable place, so I drove on through the twilight across the blasted heath. At km. 253 cylinder-head gasket blew out. Hurried conference in view of night, bandits, etc. Decided to push on. Reached Liangchow all right, headlights good, got into a mass of trucks and drivers, put up at a very unpleasant place "sleeping in a public lavatory with cocks crowing under the bed", etc.

Mon. 20th.

dep. Liangchow. At bkfst. "trachoma squad" of Szechuanese soldiers, the blind leading the blind. KW and LY at work on the engine at dawn. Rewi and I and the boys had a look at the town. Out of the peach area now, but apples and walnuts good. Soviet soap plentiful. Shops mostly full of Jap products, though, (textiles, soap, medicines, cosmetics). If CIC had been supported, most of this stuff could have been produced here, instead of sending out the valuable wool of Kansu to the enemy in exchange for it, over the desert. Pathetic sight, more rebel soldiers, tall country girl brought bundle for one of them, not allowed to give it, went off weeping after having been hit by one of the guards with his rifle. Got away 10 $\frac{1}{2}$  am.

Endless trouble with ignition all the morning, losing a lot of time, spirits very low. Passed village with Kuei Ke Lou (God of Literature Tower). 1 pm Kansu-Sinkiang Highway road post, lovely flowers, fillup petrol.

3 $\frac{1}{2}$  pm, 343 km. Yungchang, nothing but walled city and bus station, very inhospitable, next place Shandan, 106 km. on, to go on or not? Yes. Engine doing better. Did the distance in 2.25 hrs. through wild moorland backed by barren hills.

446 km. Shandan, an oasis beside the Great Wall, with low mountains, rugged and beautiful, perhaps containing the cinnabar from which the town gets its

name, rising up outside the walls to the NE, i.e. towards the desert and Ninghsia, away from the high Nan Shan ranges. City Walls. Went in, found loveliest spacious place, beautiful old architecture, huge trees, empty and old-fashioned with sturdy great pailous. Put up and good old-fashioned ~~mm~~ Sanyi Inn (Hotel of the Three Righteousnesses), Rewi and the boys slept on the kang, Hsing-Tsung and me on our campbeds. Ancient furniture roughly lacquered red.

Tues. 21st.

dep. Shandan. Early in the morning walk round the town, very empty, wonderful snow-covered Nan Shan peaks to the SW, Cinnabar mountains to the NE; people poor as wool (main produce) all going away (probably to Japs) and cotton goods coming all the way from Shanghai for the people. Local cooperatives urgently necessary here. Saw merchants' warehouses for the now decayed Sinkiang trade. Saw goatshair sacking fibre being made. Fine Taoist temple pailou and municipal stage for plays, large stupa in the distance.

Truck going well; first barren moprland along the Great Wall, then after a very dry part coming to the Ganchow oasis with irrigated rice cultivation.

arr. Ganchow km. 508 10 $\frac{1}{2}$  am. City large but not very interesting. Skirted the walls and had lunch (good rice) near the posting stage.

Afternoon, passed through the first of the endless Gobi Desert dunes, right-hand hills fade out, snow mountains on the left keep on. Passed Sinkiang troops going south, very well-equipped.

km. 588 arr. Gaotai junction, and fixed rooms at the Military Guesthouse, very like a fort in Arabia or North Africa, with rooms under the walls surrounding a courtyard. The town itself some 20 li off toward the desert, very fertile irrigated oasis, town full of camels and empty barracks. Presence of RC missionaries indicated by lace with religious designs decorating a dispensary window. Gaotai obviously quite prosperous though so isolated. Back at the guesthouse Rewi used Blewitt's canvas bath for the first time.

Wed. 22nd.

dep. Gaotai junction, 600 km. post 8 $\frac{1}{2}$  am, just desert scrub. Occasional camel trains, peasants with horse-carts, etc. but little traffic. Sandstorm (hei feng or huang feng) bad at first, later clearing, and visibility improving, with rainclouds above. 700 km. post 11 $\frac{1}{2}$  am. Sky clearing over Suchow, arr. about 1 pm.

Dealt first with petrol at KPA depot W of city, then in to Military Hostel - a romantically northern city, everything sand-colour outside, drum-tower very fine in centre of city. Lunch at the hostel unexpectedly good (spoons from Leningrad). To bank. Pleasant welcome at KPA office, OK, will telephone road guards we are coming tomorrow. Superintendent Chang Chun-Ta. Shops full of Russian rather than Jap stuff at this place.

Spent some time reading the inscriptions on the drum-tower :-

At the top : This sound reaches both Chinese and barbarians.

Facing N : This way goes straight to the northern sands.

Facing E : This way goes straight to the mountains of China.

Facing S : Looking towards the Chilienshan

Facing W : Towards the reconstruction of Iwu (i.e. the Kansu part of extra-mural Sinkiang

Thurs. 23rd.

Festive dinner at the "Great Wall Restaurant".  
dep. Suchow. Awoke to blue sky and huge snow mountains in the distance, but temp. cold. Took on Wu Tso-Rjeng the painter, also going to the oilfield, French and Belgian trained, very charming.

By now generally decided that the piston-rings are the main trouble, hence continual oiling up of plugs. Can we get it fixed at the oilfield ?

Suchow 736 km., 109 km. to the oilfield.

About 765 km. came to Djiayukuan, the old Ming dyn. Gate between China and the West on the Old Silk Road, which we have been following since Lanchow. Motor road now goes through a gap in the Wall about 1 li to the E but we diverged to take photographs. Wall stops at a deep canyon some km. to the east; this is the "Tibetan end" corresponding to the "sea end" at Shanhaikuan. In and around the deserted fort, all the installations still there. Temple of Kuan Ti, ~~mmh~~ (God of War), with new statues and paint, put up by the KPA (1). Pottery kilns, guardrooms, stage for New Year plays, and above all the last gate in the outer wall through which many sad exiles must have passed.

About 812 km. the road branches off to the left to the site of the oilfield. A romantic place, utterly empty, the ~~cam~~ sweep of the Gobi behind and the snow-covered peak of Yaomoshan ahead. Then across miles of scrub desert and dry river-beds towards the mountains, fine snowfields visible. Occasionally derricks and puffs of steam visible from the foothills. Just like something out of a novel.

Arr. KPA Oilfield 2½ pm. Warm welcome by Sun Yu-Chi and Shao I-Chou. Many friends here, such as Wong Wen-Po the geophysicist and Bien Mei-Nien, geologist. Rest, repair truck, start work tomorrow. Name of the place Laochunmiao, because the country people had (of course) put up a little temple to Lao-tze, the interpreter of the Order of Nature, on account of the natural oil seepages.

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Mon. 27th.

dep. Laochunmiao. Had to put Ford springs in to hold the piston-rings tight; hope it will work in this Chev engine. Ready by 11½, off by noon to Yumen.

Turned left at the junction with the main road. At first engine went fine, but at km.839 suddenly stopped as if no fuel. Trouble in feed-pipe or carburettor. Stuck there from 1½ to 5½ pm, traffic little, few if any trucks, and only one camel-train. At last decided to turn off to a little fortified village Chuchinbao - there showed the Generalissimo's pass - people very kind. At twilight KW and LY discovered the cause of the trouble, a short-circuit between the jiggety magneto and the feed-pump. Slept in clean empty barracks, but very cold.

Tues. 28th.

dep. Chuchinbao. Took on an officer, 4 soldiers and a civilian. Trouble again, ignition, carburettor, heaven only knows what. Sat for hours on the desert. Spirits very low. Terrific mirages. Bones of camels. The Nan Shan snows always in the background. Got to Yumen 1 pm. km.884. Most beautiful guesthouse, old temple with poplar and tamarisk trees and good beds.

In the afternoon KW and LY wrestled with the engine aided by mechanics of a Tea Company convoy which overtook us. Put in new feed-pump diaphragm. The little town not interesting except for lovely ancient trees contrasting with the desert around.

Wed. 29th.

dep. Yumen. Tso-Rjeng left early with the tea trucks. 9.20 am 900 km. post. Over the steppe desert, can see 3 km. posts at once along the straight road. Unexpected good surface and unexpected improvement in the engine, could do 60 km/hr. hardly touching accelerator. Never knew KW drive so fast, everyone pleased. 11½ am, 1000 km. post. Stony desert.

Anhsi crossroads 11.45 am; arr. Anhsi noon exactly. A bigger city wall than Yumen, but largely empty space inside, with camels grazing. Picked up Tso-Rjeng on the way into the city. Collected coloured stones for seals on the desert. Mirages (djia shui - false waters) extraordinary. Moslem bread rolls for lunch.

Off 1½ pm. Road to Tunhuang hard to find, and very bad when found, but had tracks of army trucks to follow. First across very sandy desert scrub, then along alluvial fans of a long range of Nan Shan foothills for 50 km. (very bumpy), then across gravel desert, then steppe for another 50 (100 km. between fresh water!). Saw many requisitioned coolies constructing new good road, starting from middle, prob. good stone source, and working in each direction. Ties up with surveyors working at W gate of Anhsi. This work is the first stage of reviving the age-old Road North of the Nan Shan, from Anhsi to Kashgar, as opposed to the alternative alone used in modern times, the Road South of the Tien Shan, from Anhsi through Hami to Tihua (Urumchi). Saw many bounding wild antelopes or deer, several Mongol families at their encampments, camels in herds. ~~Ming~~ N.B. the old name for Anhsi was Guachow, the City of Melons; the old name for Tunhuang was Shachow, the City of the Sands.

Towards 6½ pm, after entering Tunhuang oasis, or



Fri. 1st. Oct. at Chienfotung. Up early and took many photographs from the desert side across the dry river-bed, with the sun from the E. After breakfast of gawkwei and fruit, inspected many cave-temples with Lo Chi-Mei, head of the photographic department of Central Press Agency, who with his charming wife is staying here for a whole year and doing a photographic survey of the frescoes. Met old Yi the Lama, who has been here for 50 years, and knew Wang Tao-Se who sold the books to Aurel Stein, remembers Stein too, and Sven Hedin ("came in a motor-truck and went away the following day"), and the three old ladies (Cable & French), Pellicot too, and the Harvard group. Worked on caves all day. Weather changed at midday to mild dust haze. Lunch and tea with the Los.

Sat. 2nd. dep. Chienfotung (as we thought). For the first couple of km. over the desert the truck went quite well, but then a menacing noise developed. All we could find wrong was a broken oilpipe to the valve rocker shaft, but on restarting it was obviously far worse than that. Sat in the sand all day. Finally decided main bearings gone from 1, 2, 3, and 5 cyls.

Walked back, therefore, to the oasis, carrying as much as we could each. Wrote telegram to Embassy asking for a salvage truck (might as well have asked for the moon), and to KPA at Laochunmiao, and to Hung-Ying at Lanchow. Despatched Hsing-Tsung and Wen-Sheng, with two officials (furious) who had come out hoping for a ride on our truck, with two donkeys and the ~~palace~~ bobby to buy provisions. Reoccupied our room. Got the truck clattering back on its bad bearings to the oasis by front gate of the Library Temple. Arranged to use ~~the~~ one of the kitchens in Yi Lama's temple.

Sun. 3rd. Sent of Kuang-Chun, Kuang Wei and Lao Yu to Tun-huang by the short caravan route for firewood. Felt very isolated. Talked with Rewi and cleaned the typewriter. Lunch with the Los, in afternoon wrote to Ambassador while Rewi and Hsing-Tsung looked at caves. Decided that Hsing-Tsung should return to Lanchow and by air to Chungking as soon as possible to carry on the work of the office, while the rest of us stayed by the truck.

~~Mon. 4th.~~

Mon. 4th. Finished all letters for Hsing-Tsung to take to Chungking, he off with Wen-Sheng just before 2 pm on donkeys. Worked on caves with Lo, Wu, and Rewi. Kuang Wei's party back about 5 pm with provisions, Moslem bread rolls, thick vinous honey from the apothecary's, a good lot of melons and pears, ~~matches~~ and red candles with bamboo wicks, cigarettes and

~~xxxxxxxxxxxx~~

Hsing-Tsung plans to catch the Oct. 6th. bus from Tunhuang to Suchow, KPA truck thence to Lanchow, and CNAC plane on to Chungking - some 2400 km. - and start off by donkey! Lovely afternoon - walk along top of the cave escarpment with Lo and Wu.

Tues. 5th.

Photographed caves before breakfast, though sunlight not so strong as usual. Photographs without artificial light are possible because in so many cases the front wall of the cave has fallen away.

Boys back at 5 pm. Mending and sewing. A ~~Chinese~~ Party man came in an ox-cart to look round; sent off a 2nd. telegram to the Embassy by him.

Wed. 6th.

Photographed bust of Tang woman donor before breakfast, then spent morning washing clothes and bathing, in hot sun, near the dam which conducts the perennial water from the snow mountains into the oasis. Not a soul to be seen all day apart from ourselves. Early tea and then at the caves again with Rewi. Lo family, their assistant photographer Ku, and painter Wu to dinner.

Thurs. 7th.

Caves with Rewi 8-11. Flutter as KPA truck said to be coming; instead it was Magistrate Chen's Taitai with a shoulder of mutton for us. We conducted her round the caves with much gratitude. Telegram from Sun Yu-Chi saying that salvage truck started from oilfield yesterday; expect tomorrow or Saturday. Wu Tso-Rjeng ill, "Hongkong foot" becoming a generalised infection; doctored by us, first APC and quinine, then sulphadiazine. Bought flour from Yi Lama.

Every night a breeze springs up, tinkling the windbells on the big temple facade, a strange ~~xxxxxxxxxxxx~~ sound when one wakes up at night, never, never to be forgotten. Moonlight these nights. Every morning bright sun and so all day.

~~xxxxxxxxxxxx~~ Mem. on fruit.

Lobo like huge radishes when uncooked, turnipy when cooked. Melons, green or orange inside, very sweet. Pears, texture like hard apple, but delicious peary taste, often lemon-shaped. Sand-dates, little replicas of the bigger tsao, taste like puff crackers. Best of all, the Kansu quince, tieh-dze, from Yi Lama's orchard, apple-shaped, pear texture, but as sweet as a European pear, and of strong quince taste.

Fri. 8th.

Caves with Rewi, 8-10 $\frac{1}{2}$ . Read Lattimore, "Inner Asian Frontiers". Wu better. Went with Yi Lama and Rewi to burn incense and yellow paper at Wang Tao-Se's stupa tomb across the

dry river-bed. No audible prayers.

3 pm KPA truck turned up. Mechanics tore down the engine. Kuang Wei and Lao Yu to go with it to the oilfield. Away about 6.

Sat. 9th. 10 $\frac{1}{2}$  Wan-Sheng and Kuang-Chun off to town for provisions. Found my razor-blades all gone, shall have to buy Soviet ones in Suchow. Caves with Rewi, Irish Stew for lunch, went over about 4 $\frac{1}{2}$  to photograph the Tang abbot in his tomb across the river, with the help of the evening sun. Supper with Los.

Sun. 10th. Walked with Rewi to the Five Han Beacons; couldn't get over the top of the San Wei Shan at that point, so went down to river valley and poked about the Han fort and the 4 abbatial stupa tombs. Saw horsemen, possibly Qazaqs, in the distance. Back by river valley. Boys back to oasis by 3.

As it was the Double Tenth, the Los invited us to a standup cold supper outside the caves, from 4 pm onwards, with chocolate cake. Yi and his two very aged assistant Lamas came in their red and russet robes, with beads and strange hats. They don't ordinarily wear them for fear of incurring a raid by Moslems.

Mon. 11th. Sky overcast for the first time, colder. With Rewi and the two boys to the Han fort, then climbed hill to where we had seen the Qazaqs riding. Extreme rugged and barren scenery everywhere, but no view of the Nan Shan owing to poor visibility. Sat and meditated in the fort on past times while the others ~~thought~~ what they believed to be Tang and Sung relics from the rubbish-heaps outside the walls.

unearthed

Towards evening, went out with Rewi for a walk in the desert towards the San Wei Shan, visiting ruined stupas. R's conversation a never-ending source of interest and entertainment. But he spied a couple of wolves, so there were probably more behind, and we accordingly ran rapidly back to near the oasis. Freshly-gnawed bones are frequently seen about the dry river-bed.

The main food-chain is presumably flies - lizards - marmots - foxes - wolves, and also scrub - argali sheep or deer - wolves.

Tues. 12th. Got down to article for Nature on the NW, and did it by teatime.

Wed. 13th. Walked with Rewi and the boys to stupa tombs below the San Wei Shan, found clay models of phallic temples scattered about on the sand. Climbed up to a pailou erected by Wang Tao-Se, with the words: 你 "Ni lai-liao ma!" - "So you've come here!". Down to a dry valley leading into the hills, but had not time to reach Kuan Yin Ching temple and well before turning back. Cooked mantou at night.

- Telegram came from the Embassy - an MOI convoy is coming up, and might pick us up.
- Thurs. 14th. Boys to Tunhuang city for provisions again. A truck arrived at lunchtime, but no connection with us, except a telegram saying the convoy is still south of Kuangyuen.
- Did KPA oilfield report all day. Wrote to General Yu Ta-Wei. After tea, walked with Rewi in the caves, and sketched some lovely subjects. Supper unfortunate, sand in mushroom stew insufficiently washed, made us ill in the night, also kettle handle came off; query: no incense offered to kitchen god owing to Lamas being away, or perhaps my having poked out the ~~my~~ glass eye from one of Wang Tao-Se's Taoist monstrosities by accident?
- Fri. 15th. No appetite for bkfst. Rewi typed while I mended the kettle, darned, sewed, read. Boys back 2½ pm. Visited Wu Tso-Rjeng in one of the caves where he was painting. Unaccustomed voices from the grove below. Our eyes met, and we said softly as if with one voice: "qui est-ce c'est ~~qui~~ cet audacieux qui vient troubler notre paix eternelle?" Telegram from London. London has not yet signified approval for visit back on consultations. London suggests "doing the southeastern universities first, if necessary curtailing northwestern tour". But here we sit, with no engine.
- Sat. 16th. Weather cloudy and unpleasantly cold. Wrote all day wrapped in pidze (un-dressed sheepskin fur) and rugs.
- Sun. 17th. Night icy cold. Sunlight in the morning, thank the Lord. Made up Tang tiles under the doorstep of our room, repaired window-paper and plugged the space over the door, also plugged the skylight. Typed, darned, and mended. Supper by good brushwood fire in the Lama's kitchen as yesterday.
- Mon. 18th. Sun but light fleecy clouds. Wrote to Dorothy all morning. Telegram arrived from Hsing-Tsung at Lanchow, who cannot get plane passage.
- Tues. 19th. Cold but sun hot. Boys off for provisions. While examining cave series C Rewi thought he heard a truck on the Tunhuang road, but a false hope. Exceptionally fine log fire in the evening.
- Wed. 20th. ½" ice on the streams, but sun hot. Yi Lama, who last night insisted in helping me carry big water bucket with a carrying pole, this morning gave ~~him~~ welcome load of carpenters' chips from his new building. Washed and culled Gobi sealstones. Rewi and I had a hot bath each in Blewett's bath in Yi Lama's kitchen.
- Many anxieties, return of engine, telegram saying Sian and Tienshui roads both closed, may be the winter-rebellion, or Red Army movements.
- A desert illusion - By teatime at 4½ very worried because the boys had not returned. Went a long way over

the desert to meet them, made little fires of argols to keep off wolves, and were just giving up when 2 horsemen appeared on the horizon cantering with lances. Qazaqs! So beat a quick retreat. But strangely, they did not increase their speed. Later, it turned out to be the boys after all, having made whips against wolves, which they had seen (also 20 Qazaqs armed with iron-shod staves, who did not however molest them). Happy reunion at supper. Also our food had been exhausted. Boys had been delayed at the Bank.

After supper found that 2 Mongols had arrived and were cooking their supper at a fire in the grove under the stars. Said houses were dirty, and didn't care to sleep in them, though wind was icy cold. Incredibly charming faces, we doctored the eye of one of them against inflammation. Wore only thick sheepskins with red ornaments. Bare necks with silver amulets. Must be tough. Armed with rifles against the Qazaqs.

Thurs. 21st.

Windy and poor sun. Sat most of the day in the Lama's kitchen with a good log fire, while the boys had a bath and basked by it. Wrote to Dorothy and read Lattimore.

In evening to the caves with Rewi. Mongols back again to fetch eye medicine for their mother. Stayed to supper. Sang songs and showed dances afterwards. Eldest one's name Lobsun-Jaartsan, could write Tibetan, that being now the language of the Kokonor Banner to which they belong.

We insisted that the boys should no longer sleep in the truck on account of the cold, so they yielded at last, and slept on the kang with Rewi.

Fri. 22nd.

Got up late. Rewi typed all day, I mended and read. Caves after tea. Log fire.

Sat. 23rd.

Rewi typed, I finished Lattimore's book. Both days fine. At a quarter to four, when I was teaching the boys Fieldtown jigs in an effort to keep warm, Kuang Wei turned up on horseback from Tunhuang. Engine in the city, coming out by ox-cart. Great jubilation. But money running very low.

Sun. 24th.

In to town, KW to get the engine out, the boys to get provisions. Rewi and I checked the best course down the river-bed carefully, no getting stuck in the sand this time if we can help it.

We sat on the escarpment hoping to see the cart coming, but nothing came except the local Colonel on a horse for an inspection of the 15 soldiers in the Taoist temple. On the rock ridges rows and rows of partridges sat and watched us. Never again, no matter what persuasion, will I come to a place like this without a gun. We man could do with a few of them for our supper.

Mon. 25th.

On getting up, the old Tao-Se, Wang Tao-Se's successor, brought us a basket of delicious quinces

in gratitude for sulphadrugs applied to his sores. At 10 or so a truck arrived (we expected it was our Engine) but it was C.T. Wang, former Ambassador to the USA, with an entourage, to see the caves. The Los took him round and they left after lunch. At 4 the boys, Kuang Wei and Lao Yu turned up, riding on donkeys, very de-i-yangyang, but the Engine on a cart from the city not till 6½, plus two mechanics from the oilfield.

Tues. 26th. At work all day reassembling the engine. I copied some of Lattimore's maps. Treated a couple of soldiers very ill with what we think is typhus. No army medical service, after all, within 500 km.

Wed. 27th. A nightmare day. Packed up all set to go, then combined efforts of all of us couldn't start the engine. We pushed and pushed, and the 15 soldiers pushed and pushed, all round the parade-ground (Rewi; to soldiers' time pushing \$ 150). At one point a fire, which consumed half the Chinese flag on the off wing. Eventually, at dusk, KW got it going; bearings had been too tight, now too loose, and must be progressively tightened.

Thurs. 28th. dep. Chienfotung. Packed up again, said goodbye to the Los and Yi Lama, and left around noon with Wu Tso-Rjeng on board and the oilfield mechanics. During the morning the sergeant brought us the ~~top~~ worst typhus case again; we gave some sulphadrag tablets, but there was nothing much we could do, very pathetic. The sergeant wanted to give us back the money we had paid them yesterday, and ~~he~~ took a lot of preventing. Trouble with sparkplugs crossing the desert, and down the river-bed, but that once over, all went well. Got to Tunhuang Hostel 3½ pm.

During the past month much progress had been made with the new road, which now reaches along the edge and into the oasis.

Fri. 29th. Stayed at the Hostel, near the Magistrate's yamen. Ekfst. nice with yutiao but draughty. Old postmaster very courteous - interesting to see in the telegraph office of this remote oasis a group of intelligent young men with a bicycle-type radio transmitter, all the apparatus Chinese-made. All Central Asia oases now linked by radio. Visited drumtower, then to magistrate's for tea, sugar and sunflower-seeds. Shachow (the City of the Sands) is a Tang name, Tunhuang (Bright Beacon) is the older Han name.

Magistrate Chen's attitude to the Qazags interesting. News having just come in that last night they had attacked the Mongols, killed some, and stolen their cattle, sheep, and camels, he opined that they should look after themselves better. Is it the Qazags that carry the wool over to the Jap-held areas? Bought spirit-money.

At 1 pm ponies were brought, and we all went a beautiful ride through the oasis autumn colours in

in bright sunshine to Yuehyachuan (Crescent Moon Lake) and the singing sands. It is just where the ~~an~~ desiccating oasis verges on the huge sandhills to the south, which for centuries have surrounded the lake without filling it. Temple Lamaist-Taoist, like Chienfotung in atmosphere, very nice. Water crystal-clear, said to be a special fish in it. The boys energetically slid down the sandhills and I had a try too but there was no impressive noise. It is said to give a noise like thunder when the wind blows over it.

Tea on the terrace, and being asked by the guardian ~~monk~~ Taoist to write an inscription on the wall, produced something from Aristotle in Greek.

On returning to the yamen, found 2 Qazaqs waiting to be sketched by Ma Wu Tso-Rjeng. Wild Turkish-looking ~~bearded~~ bearded men, with glinting green eyes and white bronzed skin.

As we were on our way into the city, bumping up and down along the wildly rutted track, Rewi, who was riding on the running-board of the cab, ~~a~~ stuck his head inside and said ~~with a~~ "Now we're going to taste Big City Life"

As this was going on, a noise announced procession of the City God going his annual rounds. Boys lying down to be walked over by the uniformly-dressed bearers of the celestial magistrate's statue. Plenty of crackers and other fireworks. Took some pictures, and looked in to the celestial magistrate's temple (Cheng wang miao) where were two halls showing all the tortures of ~~hell~~ all the hells represented by models about 3ft. high. Outside, opp., a play was going on. Bought very nice hot meat pies.

Mem: near the temple of Crescent Moon Lake, ancient kilns still used. Grasses burnt for fuel, unfortunately, which should rather have been left to keep off the encroaching sand. Picked up a beautiful chrysanthemum-patterned tile, quite probably Tang.

The Qazaqs (Masar, as the Chinese call them), a tribe allied to ~~the~~ cossacks of Soviet Kazakstan, were turned out of Sinkiang during one of the civil wars, after failing to choose the winning side. There are said to be 800 rifles of them within 1 days' ride of Chienfotung. Rumours of danegeld paid ~~by~~ to them by magistrates. Doubtful if any of the Chinese cities in the Kansu ~~pan-~~handle ~~has~~ has sufficient garrison to withstand an attack by the Qazaqs in force, but they are ignorant and not easily organised among themselves. As we were leaving, Magistrate Chen and a newly arrived General gave their leaders a dinner. As there were not more than 500 soldiers in Tunhuang, it was perhaps the best thing to do.

Sat. 30th.

dep. Tunhuang Tried to get some gourds in which to carry some water with us over the desert, but none would hold. Noticed that one little antique shop was still selling old manuscripts in non-Chinese writing purporting to come from ~~Umuu~~ Chienfotung or thereabouts. Bought melons and left at noon.

Reached Chienfotung fork temple 12 $\frac{1}{2}$ , end of oasis at 1 (greetings with a group of Mongols), road-builders' bao at 2. In sight of Guachowkou ruins, and stopped for tea at 4, turn into Anhsi oasis at 5, so far all well. Then a nightmare passage across the blasted heath at sunset, stuck in the sand once, over several crazy bridges, hard to find the way into the city, but eventually did it across a newly constructed airfield. Put up at the Air Force Hostel and shared the General's Bedroom with Raq Rewi and Kuang-Chun.

Sun. 31st.

dep. Anhsi (Guachow). On to the main road, 10.10 am 1000 km. post, 11.30 950 km. ran out of gasoline, refilled. 1 pm 900 km. Severe headwind and plugs in poor form. Reached Yumen 2 $\frac{1}{2}$  pm. The old temple guesthouse as lovely as before, but the tamarisks now leafless.

Mon. 1st. Nov.

dep. Yumen (Jade Gate). KW found a new noise in the engine, so not off till 10 $\frac{1}{2}$ . Took the opportunity of photographing a convoy of Honan refugees being transported in trucks to Sinkiang.

Reached the Oilfield fork and its village Hoshackou (Burnt Valley) at 1 $\frac{1}{2}$  pm. Our oilfield mechanics caught a truck for the field almost ~~mmmm~~ at once, taking with them their bales of cotton and baskets of pears. Two colonels, taken on at Yumen, also caught another truck for Suchow. New rattle developing in our engine.

~~mmmmmm~~ Not far from here, at a place where an embankment crosses a valley, the embankment has been completely washed away, the torrent having cut ~~the~~ clean through leaving almost vertical sides some 30-40 ft. high. This place, like so many others along all Chinese roads, is avoided by a Bientao or temporary diversion road. But a truck, coming along in the dark and not seeing the notice, or perhaps the notice having fallen down or blown away, must have turned a complete somersault and come to rest upside down. It was like that when we came up, it is still there.

At 2 $\frac{1}{2}$ , about 60 km. north of Suchow, the rattle got rapidly worse and changed to a grinding noise. On examination, ~~it~~ turned out to be, believe it or not, a broken piston in no. 5 cyl. Desolate place, snow-capped Nan Shan to the SW, foothills to the NE, no water for miles. Presently a truck going NW took a message to Shao at the oilfield, and later, at dusk, a truck took Wu Tso-Rjeng, Wang Wen-Sheng and me into Suchow past the Gate in the Wall to get help. Found Cheng Chun-Ta in his office and telephoned for help. Telegraphed to Lanchow to get an MOI truck to come up, but afterwards learnt that in spite of Embassy instructions to help us, they had ~~me~~ left

they had left Lanchow only the day before for the south without waiting.

At 11 pm, when Tso-Rjeng and I were sleeping in the Military Hostel, Rewi and the others burst in, Kuang Wei having removed the broken piston mm successively, and done the 60 km. into town at 40 mph on 5 cylinders only! They had worked with guttering red candles in a freezing wind, cooked on a fire, eaten Soviet canned fish, and themselves provided water for the radiator, all to the accompaniment of howling of wolves.

Tues. 2nd.

Up at 7 am to KPA office to countermand relief truck. KW worked on the engine the rest of the day. Weather biting cold in spite of the sunshine. The water thrown out on to the road surface by the shop people freezes in a few minutes.

Wed. 3rd.

Find at the KPA office that their stores contain none of the spares we need. But Shao telegraphs for us to other depots, Ganchow for general help, Liangchow for a tow over Wushaling if necessary, and Lanchow for repairs.

Saw the Wine Spring (from which the city derives its other name, Chiuchuan) where General Pan Chao in Han times shared out wine with his victorious army. Also visited a large Sleeping Buddha of Tang time. Mem. one of the figures behind represented like an insect coming out of a chrysalis (theological second birth); Cf. one of the paintings at Chienfotung which shows a demon guardian of Tang date with arms coming out of each eye (like heteromorphosis in crustacea).

Thurs. 4th.

Wu Tso-Rjeng left early for the oilfield to make a big oil painting for the coming Industrial Exhibition in Chungking. Bought Yumen jade seals and cups, also a tow-rope. Photographed the most ancient method of paper-making, two men swinging a cloth bag full of pulp between them in a roadside stream. Visited the Hohsi Middle School (supported by the British Indemnity Foundation) quite good buildings, and boys of every sort (Chinese, Mongol, Tibetan, etc.) but no science teaching, as we had heard there was.

Qazaq women as well as men in to market - just like Europeans to look at, but strange in their great fur coats and pointed coalheaver hats.

Fri. 5th.

dep. Suchow. Limped along all day, but got to Gaotai Junction by teatime. Tea of brick-tea, gawkwei toasted black, and honey, also bread loaves ~~thickly~~ containing many "dates" (jujubes, tsao) and "sand-dates" (sha-tsao).

These military guesthouses, first set up for the Russian aid convoys coming over the Old Silk Road in the warly days of the Sino-Japanese war, were long restricted to men, but now are open to women too. So Liao Hung-Ying could have come after all. Soviet flags and portraits of Lenin still in evidence, though it is many years since any Russian convoys came through. ~~Ingand~~ Lavatory inscriptions in Russian.

Sat. 6th. dep. Gaotai. Limped on pretty well, arriving at Ganchow (508 km) by 11½ am. N.B. Between 530 and 525 km. are the ruins of the old capital of the Blackwater Kingdom (Hei Shui Kuo), said to date from the Han time. Piles of baked bricks alongside the road, and the road entirely paved with them over this distance.

Left Ganchow after a good lunch, 1 pm. At 480 km. you pick up the ~~an~~ Wall coming in from the left over the Ninghsia foothills. About 470 km. noticed the Chinese flag and pole had rattled themselves off and lost. Arrived Shandan about 4 pm and put up in the same inn. Then found top leaf of the back spring broken - worked from 4½ till 9, at last got it done. Heart in mouth several times; a stripped thread, ~~maniamona~~ too much hammering of castings, and crumbling bricks. Then, in the night, I on my campbed, the others all on the kang, it went and caught fire, burning mats, filling the room with smoke, and all Wang Wan-Sheng's clothes, wooden seal, ~~maniamona~~ given him by his parents, etc. etc. Refitted him in the morning with other people's spares. And he shall have a new seal from one of the Yumen stones.

Sun. 7th dep. Shandan. Very cold indeed. Bkfst. hot potatoes, hardboiled eggs, coffee, black toasted gawkwei and honey. Off 9 am.

For ~~man~~ 20 km. after leaving the town, magnificent panorama of the Chilienshan, covered with snow, to the SW, and snow too on the foothills near us. Must be 50 miles of it. Yet no wind and sun hot. According to Rewi, this country is like that near Otaga, New Zealand, and would ~~man~~ support millions of sheep, if the oases would grow the winter feed, roots or ensilage. Wall keeps close along to the NE. Grade uphill; much plug trouble. Performance terrible. ~~at~~ 400 km. post just after noon. 390 km. top of the pass. Better going down; arr. Yungchang 343 km. 3½ pm. Some difficulty in finding a Place, but eventually put up at the KPA truck depot in an elongated hall used as an emergency drivers' dormitory, where two drivers were already in bed atm the far end amusing themselves by a contest in long-distance spitting. Bought camelhair socks and gloves.

Mon. 8th. dep. Yungchang. Very cold, snowy sky. Looked in at the beautiful Confucian temple (wen miao) now unfortunately very much out of repair, before leaving at 9 am. Arrived Liangchow at noon. Saw KPA depot and arranged for tow, starting at 5 am tomorrow. To Hostel, very clean and attractive. When we got in m our room, the boys skipped around, patting the beds, and shouting "Piaoliang-de-hang". Tried to get a camelhair jumper, but all too small.

Locally notable - the very red cheeks of the country people in the Yungchang upper valley - in the evening light, the "baos", groups of ~~man~~ fortified farms, are just like the best modern architecture.

Tues. 9th. dep. Liangchow. Bitterly cold, up at 4 am. but truck wouldn't start ... discovered the battery was quite run

down: plates eaten through. Went to KPA depot and knocked them up (sleepy porter couldn't make out what language we were speaking until Rewi surprised him by ~~mmfihm~~ an oration in his own Shanghai slang). Got a truck from Mr Tang to provide a strong spark so we could start. Lent a spare battery too. Eventually off about 9½ plus spare battery and its driver returning to Lanchow.

Jolting along the road hour after hour fell into a half-dream, a minute and elaborate remembrance of my father's library. Truck going a bit better, perhaps on account of a blanket tied in front. Arr. Longkoubao 194 km. 1 pm. Beautiful snow mountains all around, high hills, clear streams, cold. Up to the top of Wushaling pass (180 km) accompanied by KPA truck which didn't have to help us after all. Rewi and I got breathless on account of the altitude when running beside the truck.

NW

Han forts with five beacon-towers each (not understood on the way up) stand on each side of Wushaling. A camel train, with CIC blanket bales, was met at the top, and on the other side a column of very weak unarmed Szechuanese troops going NW. The Wall runs over this pass.

Arr. Yungteng at dusk, 5½ pm, and put up at a Moslem inn. At dinner next door, a big row between the cooks and the son of the ~~mmmm~~ proprietor, with abundance of Persian swearwords in the Kansu dialect. Thought they would set the place on fire or start throwing the knives about, but no.

Wed. 10th.

dep. Yungteng. Up at 6½, off at 8½, after buying local rapeseed oil to put in the engine, our supply of proper oil having run out. Nice balconies in the towers of the fortified farmhouses. Han beacons as far down as Hoko. Soldiers building blockhouses for many km. around Hongchuntze. Arr. Hoko at noon. Lunch. Arr. Shihlidien about 3, very disappointed to find that the new head, Li Yung-Fang, had not received any telegram from Dr Shao authorising repairs to truck and issue of spare parts; agreed, however, to do repairs if we bought the latter.

So into town (Lanchow) and party dispersed at the Yellow River Bridge about 4, I to the Hoyts at the Borden Hospital, Rewi to the CIC Baillie School with the boys, Kuang Wei off to for a good bath at the bathhouse and to see Hsing-Tsung, still not left for Chungking.