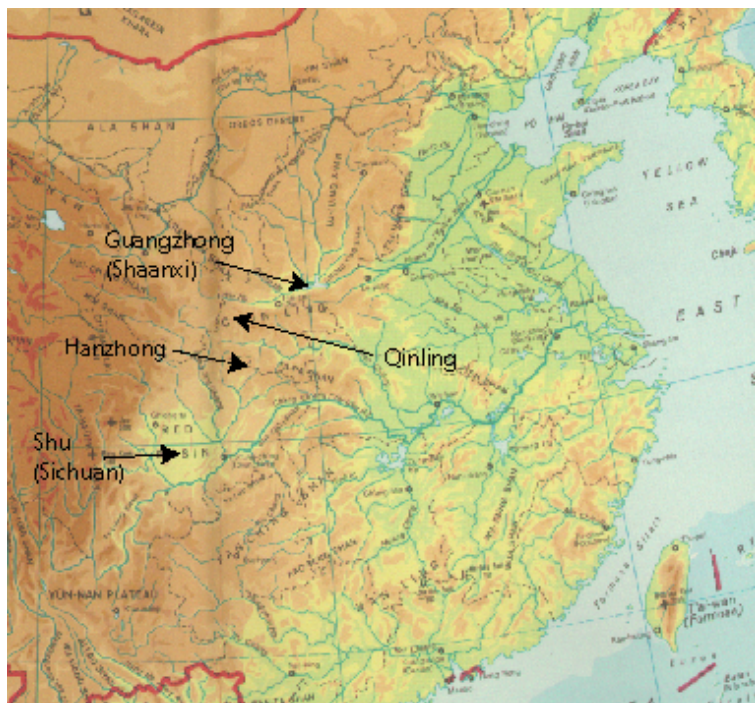


The Baoye Road to Shu – from Guanzhong to Yu Pen



The Plank Roads across the Qinling

China has been the source of great engineering innovation over thousands of years. Any doubt of the depth of these achievements is likely to be due to a lack of awareness that can be quickly dispelled even by just a glance at the contents list of Prof. Joseph Needham's classic set "Science and Civilisation in China". On the travels described here I was told that someone (I did not find out who) had nominated the top three as the Great Wall (which runs across the north of China), the Grand Canal (or Dayun He, which ran from Hangzhou in Zhejiang to Beijing as a transport route and will be revitalized again soon to take water from the south of China to the north) and the Plank roads across the Qinling between present day Shaanxi and Sichuan.



The Roads from Guanzhong to Shu over the Qinling

The plank roads are sometimes simply known as the Shu roads or the roads from Guanzhong to Shu. Shu was the ancient name for the area of Sichuan near Chengdu and the Guanzhong (关中), or "land inside the passes" is a name for the part of Shaanxi along the Wei river valley. The Chinese poet Li Bai travelled on the Shu roads in the Tang period and wrote a famous poem whose title can be translated as "The hard road to Shu".

In the poem the first and last lines say glumly “The road to Shu is hard, as hard as climbing to heaven”. The road was hard because it goes through a major north/south geographic and climatic division of China created by the Qinling mountain range. The Qinling also divides the catchments of China’s two great rivers, the Yellow River in the north and the Yangse River in the south. The highest mountain, Mount Taibai, rises to more than 3000 metres and the mountain range is rugged and is still largely wilderness covered with forest. In ancient times there were great white tigers, snakes, wolves, Pandas and other animals to greet a traveller and the steep gorges created flash floods and landslides to add to the problems. The Han people have crossed the Qinling since before written history but the first recorded Shu road seems to have been one built by the Qin army when they acquired Shu in about 316 BCE¹. Since that time, there are extensive records of the engineering feats of the Qin and Han roadbuilders as a number of roads between the Guanzhong and Shu were constructed. Most people made the journey in two stages, one from Guanzhong to the Han River valley and the second from the Han River valley to Shu. The main present day city of the Han river basin is Hanzhong and its sheltered valley has always been rich and protected so that it was known as “Yu Pen” or the Jade Valley”. It certainly must have seemed so to travellers after crossing the Qinling.

The Qin and Han roadbuilders generally made their way through the river valleys and crossed between catchments by using accessible saddle points between them. The ridges and peaks of the Qinling are sharp and inaccessible so that this was the only way through. In places, however, the rivers cut through steep and narrow gorges which were dangerous and treacherous. The method the Qin and Han engineers developed to get people and animals through the gorges was to build “plank” or “tressle” roads. These were platforms made by cutting holes in the sides of the cliffs, inserting beams and covering them with wooden or stone planks. Over about 1000 years these roads became very extensive and busy and in the river flats and valleys that interspersed the narrow sections there grew up many farming communities as well as inns, hostels and other accommodation for the travellers.

The Gate to the Ye Valley

I first found out about the existence of these roads during a visit to China in 1999 and had since been desperate to see what still remains along at least one of them. In particular, I was keen to visit one called the Baoye road which ran from Meixian in Guanzhong to Hanzhong. Finally, in July 2005 I had my wish. The “road to Shu” that we actually followed started from the Wei river at Yangling, a growing city based around an Agricultural and Forestry University, government research institutes and agricultural industries that is about half an hour drive along a modern tollway from Xi’an. We were heading for Hanzhong, the other side of the Qinling Mountains using the route of the ancient Baoye road. The towering mountains can occasionally be seen from Yangling when the natural and manmade background haze clears.

¹ We will use the recent conventions of BCE or “Before Common Era” in place of the former BC (which stood for “Before Christ”) and CE or (in the) “Common Era” in place of the former AD which stood for the Latin “Anno Domine” or “(in the) “year of our Lord”.

The “road to Shu” is still not easy, but the reasons are different from those that led Li Bai to write the long and passionate poem about the difficulties he faced. Now the roads are more simply bad and crowded with many types of traffic rather than hard on the legs. But they are still truly “hard” judging by some of the effects on trucks that we saw had run off the road. In the small band that set off to find the Baoye Road (褒斜道) there was Cui Yan, a young post graduate student looking after me since my friend Li Rui from the Northwest Institute of Soil and Water Conservation was called away to a meeting in Beijing, the Head of the Conservation Department from the Hanzhong Museum (Huang Baogui, who was helping us following Li Rui contacting the Museum) and the driver Zhang Xiaohui – not the great Mr Zhang that I had known in previous visits but his son. Young Zhang was also a great driver and had come up through the army as well. It was just as well we had him at the wheel as the driving needed a great deal of skill and experience. We rode in a Pajero 4W drive and needed it despite the road being apparently sealed and the main road to Hanzhong via Taibai City. Armed with various maps, books in Chinese on the history of the ancient Qinling traffic, a GPS, digital cameras and notebooks, we travelled all the way from Yangling to Hanzhong over a long day with an early start and a late end. It was a very full day but no one complained and it was much better than the two weeks it would usually have taken (assuming good weather) when Li Bai made the journey.



Checking the GPS near the beginning of the Baoye Road

Since we were a group of four travelling in search of relics from ancient times, the journey was jokingly compared by one person later to the Chinese novel “The Journey to the West” (西游记, sometimes called in English “The Monkey King”) with me as the monk Tang Sanzang (Tripitaka) and Huang, Cui and driver Zhang variously as Sha

Wujing (Friar Sand), Zhu Bajie (Piggy) and Sun Wukong (Monkey). There were some likenesses – especially in the heroic driving exploits of the driver Zhang. But I was much better treated at Hanzhong and the Zhang Liang Temple than Tripitaka was by the Buddha's Arhats when he arrived at Vulture Peak. It was also really a new adventure and everyone worked hard and stayed cheerful. So it was more truly a company of friends on an adventure to uncover the past rather than the journey of a silly priest with immortal minders like the story in "Journey to the West".

We drove first to Meixian - about 30 minutes from Yangling along a fast and modern tollway. Meixian is itself a town with a long history. Apart from being an end point for the major communication link between the Guanzhong and Shu it played its part in the history that still lives on in the almost daily discussions of Chinese people. For example, a famous historical novel in China is the "San Guo Yan Yi", (三国演义) or in English sometimes called the "Romance of the Three Kingdoms". There are very close associations between the activities in the later stages of the novel and the Shu roads. The novel describes heroic deeds and fierce battles during the period following the fall of the Han dynasty in about 220 CE. At that time, China split into three kingdoms, each of whose king sought to form a new dynasty. In the north (in the Guanzhong and present day Henan) there was Wei. In the south (with capital in present day Nanjing) there was Wu and in the west, with capital at Chengdu in Sichuan there was the kingdom of Shu. The king of Shu, Liu Bei, declared himself the legitimate successor of the Han dynasty as he was of the Liu family – as were all the Han emperors. He declared his hand at Hanzhong and his famous prime minister, Zhuge Liang, spent some years trying to conquer Wei through the passes and along the roads of the Qinling mountains. As our journey continued we were to come across this history at every turn and in any part of China it is always easy to find people discussing the Three Kingdoms. It is part of China's language and culture. We were only at the start of the journey, so it is significant that Meixian also appears at the start of the novel. In the novel, a fierce and brutal general called Dong Zhuo (董卓) lived at Meixian. He massacred many officials of the last Han emperor and had a great time at the palace afterwards. He was about to declare himself and his family the new dynasty, but a clever court official made use of a very pretty girl called Diao Chan (貂蝉) to undo his plans.

There are no signs of Dong Zhuo or Diao Chan at Meixian today. It looked like any other small to medium Chinese town in the Guanzhong. But the company did discuss the issue of where Diao Chan was born (in the north of Shaanxi where it is apparently still a good place to find a wife) and the undoing of Dong Zhuo. Still, there was no time to stay and chit chat. The road from Meixian to the start of the ancient road was very confusing being through villages without any signs and along what seemed like minor access roads full of people, tractors, goats and spread with crops (to dry in the sun) until we got to the Shitou River dam. This major dam marks the entrance to the present day road and is large, impressive and deep. It sends water to Xi'an and will soon also send water to Baoji. The cities are becoming major users with agriculture pushed down the list. But there is still plenty for irrigation at the moment. The dam wall is built across a steep and narrow gorge leading to the ancient road. It was and is still called the "Xiegu Guan" (斜谷关) or the Xie Valley Pass. The Xie Valley Pass was, in ancient times, a major point of defence as

well as the starting point for an attack across the Qinling from the north. Around the modern dam the road was being rebuilt (or possibly built – judging by the state of the track we took) and the road between Meixian and Hanzhong along the Baoye road will soon be a highway. I hope they join it nicely to Meixian and include the signposts.



The wall of the Shitou River Dam at the start of the ancient Baoye Road.

The dam wall was not only our starting point for a journey to Hanzhong. When the Qin army built the road to Shu in 316 BCE they did so further west near to Baoji, the original homeland of the Qin state. Later, with the help of the resources brought in from Shu, the Qin state moved east and defeated the other “warring states” to unify China under the emperor Qin Shihuang. It is Qin Shihuang whose famous stone warriors are a focus for much of the Western tourism to Shaanxi. However, under the iron fist of Qin, China’s roads and communications (as well as the Great Wall) developed rapidly to cover the empire. The Baoye road, along which we were setting out, was possibly built and certainly extensively developed in the Qin period. China’s famous historical text (equivalent to and more accurate than the histories of Herodotus) by Sima Qian, whose brief title (“Shi Ji”) is sometimes translated as “The records of the Grand Historian”, records how the Bao and Ye rivers were to be linked across a narrow neck between their catchments allowing grain to be shipped between Hanzhong and the Wei river. The intention was that the rivers would support water transport but that was never achieved. The rivers were too narrow, rocky and dangerous. But as a result the plank roads were developed, consolidated and extended.

The Qin Dynasty was relatively short lived. Qin Shihuang ruled as harsh “legalist” tyrant and eventually, when the successors to Qin Shihuang proved somewhat less fearsome, the previous Chinese states rebelled and a coalition of generals overthrew the Qin. The top general, the hero Xiang Yu, declared himself the “Grand Hegemon” and after sacking the Qin capital at Xianyang (near present day Xi’an) retired to his home base in the former kingdom of Chu (near present day Anhui). His main rival, Liu Bang, was effectively “banished” by making him king of the far away states of Shu, Ba and Han. Under the guidance of his advisor, Zhang Liang, Liu Bang set out to take his army along the Baoye road to his new capital at Hanzhong – just as we were about to do. But we set out without an army and in relative comfort.

Along the Rocky River, or Xie River– or maybe the Ye River?

We got through the road building and general chaos that seemed to go with it without damage or too much extra delay and moved on to the famous road. Relics and remnants of the ancient road and its infrastructure at the Guanzhong end of the route that also survived the building of the dam apparently exist but are hard to reach so we did not stop we made our way alongside the Shitou River as it climbed past productive and pleasant farming areas into the Qinling ranges.



The Rocky River at the northern end of the Baoye Road

The river is appropriately called the “Shitou” (石头 or “Rocky”) river as its river bed consists of a stony and rocky valley. Large white stones fill the river and are used for building houses, rock walls and roads. The Shitou River had originally been called the

Xie River. However, there is some uncertainty as to whether it should be pronounced “Xie” or “Ye”. At least, I was uncertain and had as one of the items on my “to do in China” list to try and resolve the issue for my own benefit if not in any wider sense. The Chinese character “Xie” (斜) as used in the name for the Xie Valley Pass means “slanting” or “diagonal” and was definitely the character used for the name of what is now the Shitou river in ancient times. However, after getting interested in the subject of Plank Roads in 1999 and going in search of them in Western literature, I noticed that all of the famous scholars referred to what you may think would be the “Baoxie” road as the “Baoye” road. They included Joseph Needham, Moss Roberts (translator of a wonderful edition of the Three Kingdoms), Burton Watson (translator of many books including the histories of Sima Qian) and the Australian Chinese Middle Ages historian Rafe de Crespigny.

The issue seems to have arisen from a later commentary (by one Wei Zhao, 韦昭) added to Sima Qian’s “Records of the Grand Historian” in the section where he described the Qin efforts to link the Bao river and what is now the Shitou river. The commentary says that the name of the river is (was) written “xie” but pronounced “ye” (斜, 谷名, 音邪). Obviously, calling the road the “Baoye” road in English is a reference to this commentary. One question that interested me was “what do the present day Chinese call it”? The answer does not alter the value of using ancient pronunciations when translating ancient texts but it may be important when you need to communicate with people on the ground. In fact, I never heard anyone pronounce “xie” as “ye” while I was in China. I took along a photocopy of the relevant section from Sima Qian and showed it to the Chinese experts I met to see what they would say. The usual reaction was to glance at it, grunt as if to say “oh, yes, that commentary” and smile politely – but still continue to use “xie” and not “ye” in everyday discussions. So, if the following pages are inconsistent please bear with me. I think to paraphrase Confucius when he was discussing how one should treat the departed: “to act as if the pronunciation ‘Ye’ is wrong would be disrespectful, but to pretend it is the correct (modern) usage would not be logical” so somehow we must try and balance respect and logic – no matter how hard that sometimes seems to be.

Across the divide into the Bao River valley

The day we set out from Yangling was very hazy and the visibility poor throughout the Wei river valley. However, when we got to the mountains, the day cleared and it was not so hot or humid. The road from the dam at the Xie Valley Pass followed the beautiful Shitou River and its surrounding farms and orchards up to its headwaters near Taochuan. The road then crosses the Wulipo saddle and descends into the upper reaches of the Bao River valley. At Wulipo (五里坡 or “two and one half kilometre hill”) we had ascended to 1400 metres (1km above Yangling and about 6° cooler) to move out of the Yellow River basin into the Yangse river basin. We were, at that point, very close to the upper reaches of both of these great river systems. The Wei and Yellow rivers grew on the north and north-east side and the Han, Jialing and (eventually) Yangse river grew to the south and south-east.

Through the beautiful Bao River valley, the ancient road has been replaced by a modern road. The engineering involved in the new road is also impressive with many tunnels driven through the mountains to replace the ancient plank roads. Every now and then we came to sites where there was clear evidence of the ancient road although during the road building there was little or no conservation of the historical parts. There were more important things to worry about at the time the new road was built and life was not easy. The past had to serve the future or be left for another day.



Across the saddle into the Bao River Valley

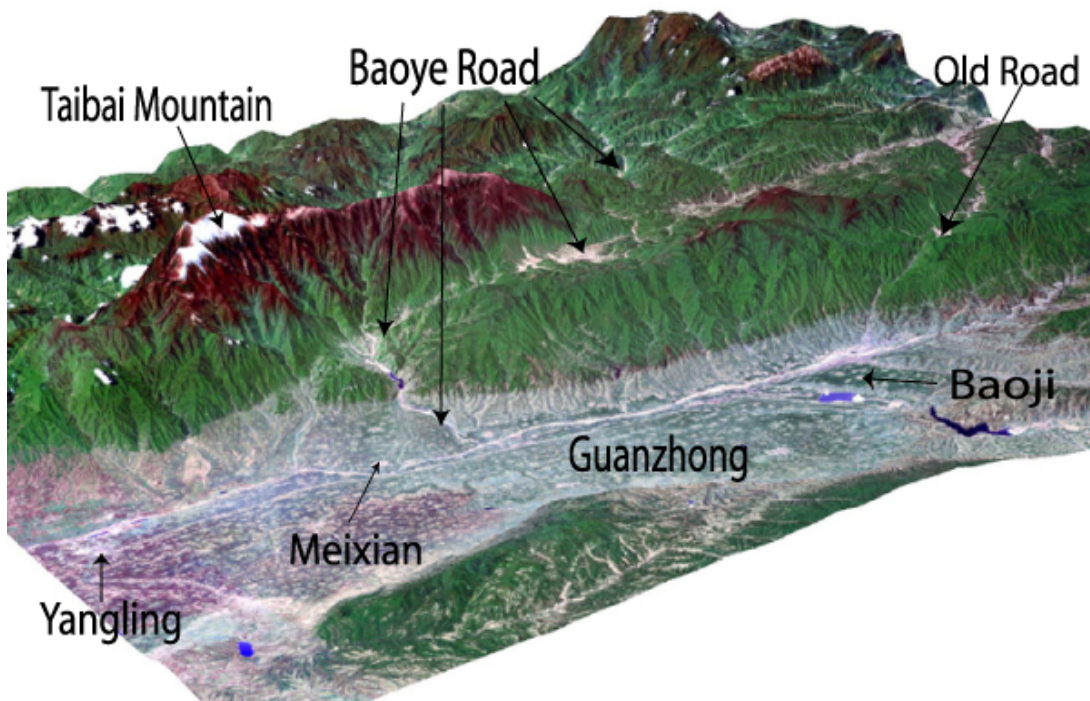
The Bao River Valley through the Qinling is a very beautiful and scenic area. When we travelled through, it was green, fertile and certainly still part of old China. In Chinese, we drove through “Shan qing shui xiu” (山清水秀) or “green mountains and beautiful rivers”. From the saddle at Wulipo to Taibai city was largely an open and gently sloping valley which was home to Chinese athletes practising altitude training and a large military base. There were also signs of extensive water management and deep tunnels had been cut to take snow melt from the Bao river valley for use in Xi’an and the Guanzhong. It seems that Xi’an is taking water from the Wei river and also from the Yangse river – even before the Three Gorges and associated developments have been completed!

This part of the original journey must have been relatively pleasant. Huang told us how a Qing period official called Wang Shixing had travelled this way and had written a book about the Shu roads and the Qinling. It is an important current source of information about the roads and shows how the traffic was still significant and sometimes heavy 2000

years after the roads were first constructed. Wang noted that it took more than two weeks of travel to go from the Guanzhong to Hanzhong. Apparently, the great Prime Minister of Shu in the Three Kingdoms period (Zhuge Liang) took his army from Hanzhong to Meixian in just two weeks – but he is regarded as being very clever.

At this time we also discussed the various reasons for my visit and for our use of the GPS and about the document I was bringing with me to help explain how I felt some remote sensing, GIS and GPS technology (together sometimes called “3S”) could help make similar visits by other people more interesting and also maybe solve some remaining questions about the roads and their construction in ancient times. I had managed to find a set of composite images at roughly “Landsat” scale (having a resolution element of about 40 metres on the ground and location accuracy of about 100 metres) and some digital elevation data to combine with it to provide information about the topography. The image data had come from “Globe Xplorer” and the digital elevation information from the Shuttle Radar Terrain Mission (SRTM) archive. They were, at this stage, only intended as demonstrations of the opportunities since much more refined elevation data and much more detailed space images can be acquired when they are needed. It only needs some support and sponsorship to pay for them.

I remember being amazed when I saw that the track of the Baoye Road was as clear in the digital terrain data as it was in the image data. When the data are combined and presented in three dimensions, the whole area suddenly becomes interlinked and part of a larger picture.



Simulated view of the Qinling from “above” the Wei River Valley

The interplay between geography and history is close and strong as is the interaction between history and climate. Perhaps if the climate and geography are known, the “rules” by which people selected routes for the ancient roads can also be applied to digital maps to find potential roads or help resolve still remaining questions about where some of the tracks went or where some of the armies and travellers passed as recorded in the ancient literature and history. But even if there is no issue of location, it is possible to use digital technology to put all of the history into a common and accurate geographic framework. This has benefits for historians and the tourist industry alike.

As we went, we took accurate GPS readings of our locations. Later, these can be combined with the information system that is gradually being assembled to cover the area from Tianshui to Tongguan along the Wei River and from the Wei River to Sichuan and the region served by the Roads to Shu. However, these activities are simply the mechanics of my profession of many years and what was more important during the visit was how they could support and add value to people’s interests in Chinese history, literature and culture. To be on a journey in which history, literature and geography all came together was enough to make the visit worthwhile for me. I think in the future it will also be sufficient for other people as well. There was certainly no sense of hardship or “duty” among the others helping me on the road to Hanzhong. Everyone present was a very willing “volunteer” and every Chinese person present felt deeply about the role that this road had played in China’s history and its culture and in what China is today.

Relics of the Plank Road

After Taibai city we came to the main area where the Plank Road structures were needed. At this point, the Bao river valley passed through tall mountains with high relief and followed a narrow and winding way through them. The river channel either passed through steep and narrow gorges or through small to medium sized river flats where there have been farmers growing almost anything for some thousands of years. It seemed idyllic in July but the living may not, however, be so easy in mid-winter when this area is deep in snow and communication with the outside world less easy – apart from the satellite television which was everywhere. As discussed previously, the first travellers kept to the river valleys as much as possible because the mountains were steep and the vegetation thick. Great white tigers and pandas roamed the hills along with snakes, wolves and many nasty animals. The valleys were safer but they were deep, the rivers ran fast and where they passed through the steep and narrow gorges something was needed for people, animals and armies to pass through as well.

The answer that the Qin and Han roadbuilders came up with was to build plank or tressle roads on the steep sides of the cliffs. The structures had to be high enough to survive the flash floods and low enough to be practical for construction and maintenance. We found out later at the Hanzhong Museum from its Director (Feng Suiping) that there were basically four styles of plank road. One was a tall trestle style with two parallel sets of holes in the cliff for wooden beams of which the only current example I know of is a reconstruction in Sichuan. A picture of this site has been used at the start of this document but it was not part of the journey. Along the Bao River the main form of

construction was to cut a single row of deep rectangular holes into the cliff into which wooden or stone beams were placed and then the road was built on the beams. Sometimes the road itself was stone and sometimes the road was also cut back into the cliff to help protect the travellers and secure the route.



Stone Plank relics at Wangjia Leng

The first site we visited was at Wangjialeng (the King family corner) where there is a building and a manager for the site – although no one was home when we called even though the washing was hanging on the line. This site involved an interesting climb up a hill that would make some people go green or red or both. The number of people making the climb must still (thankfully) be quite small, otherwise the slope would be a mess and maybe there would have been some accidents as well. The people from Hanzhong or others with a similar interest will need to preserve the history and relics first and only then develop them for tourism if it is to be a major stop on a historical road. The plank road that remains at this site is not wooden but stone.

Along the Baoye Road there are many places where the square holes in the cliff face for the beams remain and other areas where the materials were all stone and have therefore also survived. However, vegetation has grown over many of the other sites and changes in the river bed and movements of rock and rubble have changed the setting as well. It would be a significant effort to move along the two sides of the valley using GPS and surveying technology to map the locations of the existing relics – but it really should be done before further exploitation gets under way.



Holes for the beams show the route of the Plank road



Stone based Plank Road still being used

Another type of plank road was well illustrated at the next site we visited near Houzi Ling or “Monkey Mountain”. In this type, the road was built entirely of stone with stone beams and flat stones overlaid and built into a made road. Otherwise, we noticed many places where there were holes in the cliff, but after all this time and the extensive modern engineering; there were few remains as extensive as the two main sites we visited.

We employed ourselves by taking GPS readings of the sites, making notes, taking digital photographs and discussing history and the great doings that have occurred along the way since the Qin period and maybe before. There is so much history here that the idea of a historical road with displays and sites to visit is possible and no doubt tempting. It will happen soon – so conservation and preservation is imperative since there is still too little preservation and management taking place at the remaining sites of the ancient road.

The road to the Stone Gate

We joined the main Shaanxi to Sichuan road just south of Liuba where the old Plank Road had joined the “Lian Yun” (连云) or “Cloud Linked” road. Prof. Joseph Needham, in Volume 4 of “Science and Civilisation in China” proposes that in the period following the Qin acquisition of Shu (316 BCE) the main road to Shu was the “Old Road” from present day Baoji through the narrow Dasuan Pass and to present day Fengxian. From here, the old road moved along the Jialing River to Sichuan through the Yangping Pass. It therefore by-passed Hanzhong.

With the growth of the Baoye Road, there was a need to link the previous roads. The Lian Yun road linked Fengxian and Liuba and passed close by Zibai Mountain where there is now a temple dedicated to the early Han advisor of Liu Bang named Zhang Liang. Certainly, at the time when Liu Bang moved out of Hanzhong to start on his conquest of China, the Baoye Road and the Old Road were linked because the Han army used the link road to attack Chencang – or present day Baoji. It also appears that there were two sections called “Lian Yun”. The second was further south near to the Hanzhong end of the Baoye Road at a narrow pass at the beginning of the Hanzhong plain. The narrow pass was called the “Stone Gate” (石门) and that was where we headed.

As we drove south, the Bao river got bigger and ran faster until it reached the entrance to the Hanzhong plain where it is now stored in a large man-made lake by the Stone Gate dam. Along the way we found that Bao river fish are truly large and good to eat. A sign along the way says “Yi yu liang chi” (一鱼两吃) or “one fish two dishes”. This makes no reference to political systems but to efficient use of one big fish. Actually, there are usually more than two dishes (as many as eight) made from one (big) fish at the many fish restaurants dotted along the main road. Here, as in Hanzhong, the food is a compromise between Sichuan and Shaanxi meaning that in Sichuan all food is hot, in Shaanxi it is “suan de” - (酸的 or vinegar) but spicy and in the Hanzhong area they eat both. That is, both hot and spicy.

The Bao River dam forms the other end of the ancient road that we started along at the Shitou River dam. The fact that the two ends are major dams is no accident. They were

originally steep and narrow gateways to large and steep catchment areas. The Stone Gate was an ancient engineering achievement of tunnelling through the rock to form a narrow but effective passage to Hanzhong. The old Stone Gate is now deep below the dam which is a great modern engineering achievement. It was built in the 60's the Russians had left China in its poorest and worst condition – probably ever – and the dam became a symbol of self reliance and Chinese ability to succeed.



Stone Gate Dam Wall. Work continues.

The old Stone Gate had been a point of defence and also a place where travellers of all kinds had to converge to move out onto the Hanzhong Plain. A narrow passage was cut through the rock to help the traffic but it was always a narrow neck to the road. At the Stone Gate dam there is a very well presented reconstruction of the original Plank Roads. At this point there were originally two roads – one near the river and one well up on the mountain side. The mountain track was the southern section of the “cloud link” way and led to Baocheng, a walled city that defended the entrance to the Han River plain. Around the stone gate area were also located many examples of stone carvings and calligraphy dating from ancient to relatively recent times. When repairs to the dam got too close to them in 1971 they were conserved and moved to the Hanzhong museum. That was to be our next stop – following a good rest overnight.



Reconstruction of the Plank Road at the Stone Gate Dam

At the Hanzhong Museum

The visit to the Hanzhong museum was a centerpiece to the journey. The museum is located in the palace of the first Han king, Liu Bang, and the building was also “home” to the Shu Han emperor Liu Bei when he was in Hanzhong. It was in Hanzhong in about 230 CE that Liu Bei symbolically laid claim to the Han Dynastic line that Liu Bang had started 400 years earlier.

The Museum has a wonderful collection of relics and provides extensive information for both scholars and the public. We were met by the Director Feng Suiping and Ms Yu Rui, a colleague of Huang Baogui. I certainly wish to return in the future as the time was too short to take it all in. I think the people at the Museum may also be keen to follow up with “3S” as the talk and the copies of the talk, as well as the display of image processing on my laptop, made it a really a great learning experience for all of us. The Museum staff can see the potential that the technology has and are keen to see it reach its potential in Hanzhong. After a tour of the plank road displays, the talks continued inside and we were joined by the retired Director Guo Rongzhang who gave us a talk on some aspects of San Guo (Three Kingdoms) history. He was prompted to do so by errors in the maps I had copied for the presentation. He is very keen to use remote sensing to help sort out remaining questions about the San Guo period and the routes by which armies and people moved between Wei (Shaanxi) and Shu (Sichuan).



Courtyard at Hanzhong Museum

It was very good to have taken copies of my talk in both Chinese and English. Spoken English gets too little practice away from the major cities. Chinese people will often construct very good sentences in English but find it hard to follow when you answer due to this lack of practice with everyday conversation. So the extra work on the presentation to make it truly bi-lingual was worth it. Everyone immediately knew what was going on and what the objectives were and it made the communication much more clear. Developing and presenting such a document also provides everyone with much-needed added practice!

Along the old plank road there were many famous stones bearing calligraphy and inscriptions recording appreciation for someone or something or recording the building or repair of some of its sections. Some of the best of these have been preserved in Hanzhong Museum. One is an inscription said to have been made by or recorded a statement made by Zhang Liang that simply said “Yu Pen” (玉盆) or literally “jade basin”. It was at the museum and it was wonderful to see it.

A poem by the Song dynasty poet Wen Tong said:

Early in the morning at Hua village;
First observe “Yu Pen” at Shimen.
Remember Zhang Liang burning the Plank road;
Be still and experience the past.

People say that “Yu Pen” refers to the Hanzhong basin as a rich and precious area. It seems to be true. Hanzhong region was always rich and productive and has a very good climate. However, Hanzhong city is still poorer than the coastal cities despite the obvious and growing modernisation. It is also still distinctly Chinese as well. That is not such a bad thing for Hanzhong to stay and to leave McDonalds, KFC and Starbucks to Shanghai and the others. If that happens then Yu Pen it will remain – a pleasant and productive valley with fields of rice, bananas and bamboo among the hills and with buffalo grazing along the side of the Yangse River’s longest tributary, the Han River.

The people at the Museum are keen to preserve the history and its relics and also see tourism and education develop hand in hand with conservation and preservation. They can feel the importance of the history to China as well as the growing interest in their special areas of history among people in China and Chinese people overseas. I think there will soon be great interest among many other people from the west as well. Their hospitality and efforts are as well remembered as the discussions about history, geography and adventures.



Cui Yan, Huang Baogui, DLBJ, Guo Rongzhang, Feng Suiping & Ms Yu Rui.

In the afternoon, following the visit to the museum at Hantai, we visited the tomb (武侯墓) and temple (武侯寺) of the Martial Lord, Zhuge Liang. Zhuge Liang lived during the “Three Kingdoms” period and is a very large and famous person in Chinese literature and history. He was a very clever advisor to the Shu Han emperor Liu Bei and tried to bring about the restoration of the Han Dynasty (in which all emperors were members of the Liu

family) through Liu Bei's line. But he failed after many attempts to repeat what the first Han emperor (Liu Bang) had done – to use Hanzhong and Sichuan as their base for unifying (i.e. conquering) China. Much of the story of Zhuge Liang's northern campaigns involved armies moving back and forth through the Qinling and along the plank roads to engage in battle or secure food and supplies. So Zhuge Liang and Liu Bei are central figures in the journey as is their matched pair at the beginning of the Han Dynasty (about 400 years earlier in 203 BCE), Zhang Liang and Liu Bang. Zhuge Liang kept appearing and re-appearing during my visit to China, such as when we later visited the Wuzhang Yuan which is closer to Baoji. But his tomb and associated Temple are definitely at home in Hanzhong at the base of Dingjun Mountain surrounded by the eight Bagua symbols with his mound in a flattened pyramid (or "Fudou") form.



Zhugue Liang's grave surrounded by the eight Bagua symbols.

One possibility for the lack of success for Zhuge Liang was that Liu Bei was too "nice". The first Han emperor, Liu Bang was generously portrayed in the Han history of the "Records of the Grand Historian". The account was written by Sima Qian during the Han emperor Wudi's reign. Having been rather painfully punished already, (to the extent that he would later have no more descendents) no doubt the record was deliberately favourable to the Han ancestor compared with the great Chinese hero Xiang Yu. Xiang Yu was the leader of the coalition that overthrew the Qin. Liu Bang and his army were considered more as "bandits" than material for a future dynasty. In the end, however, Liu Bang defeated Xiang Yu and became the Emperor Gao Zu of a new dynasty – the Han dynasty. This led to the famous Chinese saying along the lines that "the winner is the

king and the loser is the bandit”. The Chinese people also feel that the winner is usually not only a bandit but also a bastard. Cui explained to me another Chinese saying which in English is that “Liu Bang is a bastard; Xiang Yu is a hero”. Xiang Yu was eventually cornered and cut his throat with his own sword to avoid capture. He offered his head to a previous comrade (who had defected to the winning side) because it had a high price on it – and did the job for him. He was a brave and true Chinese hero.

We also found that near Zhuge Liang’s tomb we got no GPS signal. It may have been the Fengshui perhaps or disapproval of the invasive modern technology by the Martial Lord. The mountains and local geography are also a possible explanation but what else is Fengshui but geography?

After another long and interesting day we went back to our hotel (safely after 6:00pm since the Hotel did not have power between 8:00am and 6:00pm) and were later treated to Hanzhong hospitality and more relaxed discussions with Director Feng. It was a good day and it finished on a good note. Early next day I slipped out to check the morning activity. The markets were going strong selling the famous Hanzhong tea (including Dingjun Tea) and the parks were going strong with masses of people exercising in the morning as a light rain fell.



Morning Taijiquan in Hanzhong

The park near the hotel also had Taiji groups as well as a large lotus pond, a group of ladies singing and another of old men playing the Erhu and other Chinese instruments. But the young people were also out and exercising – and even among the Taiji groups, in

contrast to Beijing. Everyone seemed to be up and about except us. We were resting for the day to come.

The Temple of Zhang Liang

The plan was to drive north again past the junction of the Baoye Road and the main Baoji to Chengdu road and to visit the Zhang Liang Temple on the way to Baoji. Director Feng knew his opposite number at the Temple and phoned ahead to introduce us and tell them of the image processing and other neat stuff that we were bringing. Huang also came with us and planned to come back from the Temple by bus after our visit. Since it was summer holiday time his wife (an English teacher) and son also came along. After we had managed to get past the ubiquitous roadwork we were on our way north with the masses of blue trucks that ply the main road between present day Wei (Shaanxi) and Shu (Sichuan). The way back along the Bao River was very pleasant – except for the wall-to-wall trucks, roadwork, animals, people on bikes and the remains of the accidents we passed. It is not as bad as it was the last time I came this way and the blue trucks look more modern now but it is still not an easy road to travel.



Modern Blue Truck and cyclist on the Baoji to Sichuan Road – near the turn-off to the Baoye Road.

My previous visit nearby had also been to the Zhang Liang Temple. It was in 1999 and Li Rui, Yang Qinke (a scientist and colleague from Yangling) and I, with our driver Zhang's father at the wheel braved the overloaded coal trucks and drove from Baoji to the temple. It was a great visit and at the time I bought a small book from which I later laboriously

translated some sections. The sections were about the Baoye Road, of which it had a rough map, plus accounts of the activities of Zhang Liang, the beginning of the Han and many other things. It was the start of the interest that led me to the present adventure after pursuing it as a spare time interest for five years. I took the book back so that it could revisit its “home” but the times have changed and there are now even better books to bring back. I hope it still felt welcome. It was interesting for me to make the comparisons – maybe for the book as well.

From Hanzhong to the Zhang Liang Temple (or Zhang Liang Miao, 张良庙) was quite a long way and as we drove, the Bao River ran alongside until we reached the turn off to the Baoye Road and the modern road to Taibai and Meixian. We finally met the people from the Zhang Liang Temple at a restaurant just past the turn off. There was the Manager of the Temple, Yan Xiaohong and his offsider. They were keen to see the images and data so that, since lunch (a huge Bao River fish cooked in three ways) was going to take a while to cook I was asked – and managed - to show it all (powerpoint and image processing) on the table without external power and using a menu as a mousepad. The result was very good and it went down very well – almost as well as the fish.



Ready for the Demo while the lunch is being cooked. Yan Xiaohong is opposite.

Zhang Liang was (as previously described) a prime minister during the time of the first Han emperor (maybe also bandit and bastard as well) named Liu Bang. Liu Bang had the dynasty name of Gao Zu. Zhang Liang knew the Qinling mountains very well and spent time there cultivating the Dao, meditating and not eating food made from the five grains. He was formative in the hero Xiang Yu granting Liu Bang the kingdoms of Shu, Ba and

Hanzhong after the empire of Qin Shihuang was divided up by the victors. Zhang Liang took Liu Bang along the Baoye road to Hanzhong and then advised him to burn the Plank Road to show his rival Xiang Yu that he had no intention to come back and try to unify/conquer China. He suggested Liu Bang rest and recuperate in Hanzhong, build his army and get ready to take over China when he was strong again.

Later, acting on the advice of one of his generals called Han Xin, Liu Bang had people apparently start work to repair the plank road and attract the attention of Xiang Yu's garrisons. But he also sent an army to the old Chencang (Baoji) road past the present day Zhang Liang Temple and secretly attacked what is now Baoji from the old road. The saying "openly repair the plank road; secretly march on Chencang" is a famous saying in China indicating successful deception. It was the start of his successful campaign and the eventual establishment of the Han dynasty. It seems that Zhuge Liang was trying the same thing 400 years later but without the same success. As it would turn out, we did not get to see the old Chencang road down the mountain from Fengxian to Baoji at this time. That was to be for another day, another way and another story.

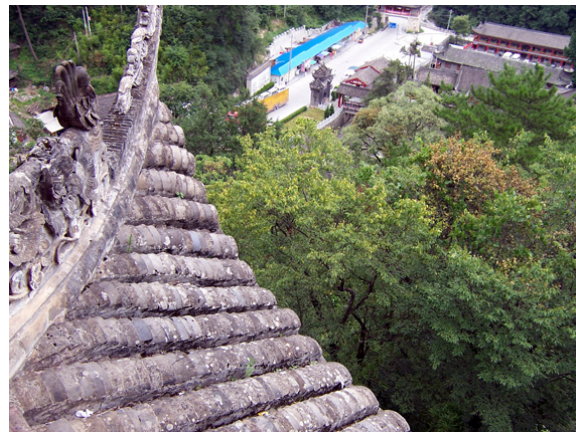
Eventually, after the presentation had ended, the fish was cooked and we had another great fish meal from the Bao River. Then it was away to the Zhang Liang Temple and many changes were immediately apparent. The Temple has been adopted by many overseas Chinese as well as the growing number of Chinese people touring China. Zhang Liang was an original Taoist who used to reduce his food intake, give up the five grains, meditate in a cave and do breathing exercises as part of his practice. In this way he became an immortal. When offered high positions and great rewards by Liu Bang he rejected them in favour of life as a hermit. So he is highly regarded for his lack of regard for worldly rewards and recognition. Zhuge Liang, despite his great mind and brilliant strategies, remains a Martial Lord and is not an immortal. This may help explain why the Zhuge Liang Temple is the most successful historical point on the road at this time. It is a matter of status.

The temple also now has a group of resident Daoists, whose master joined us when a question arose as to the reason for the former heaven (Fuxi) Bagua being used at the Temple. He told me the Daoism at the temple was the same as that in Wudang and Beijing but that the temple is not a centre for Wushu. The temple has also seen a great deal of change to the facilities (all improvements) and now has a team of young guides who really like their work and pass on their enthusiasm to the visitors. It is a deserved success. Zhang Liang seemed also to have similar powers to Zhuge Liang. The GPS gave no readings in the temple area. We have had to rely on the readings taken down the road at Liuba.

The following pictures show the gate to the temple in 1999 and 2005: The whole town area and street has been redeveloped and cleaned up. The temple area is neat and well maintained. They are doing a good job and are seeing the benefits. Equally interesting is the view from the "top" of the "Stairs to the Clouds":



Entrance to the Zhang Liang Temple in 1999 and 2005



View from the "Top" in 1999 and 2005

But the time we could spend at the Temple was necessarily limited and the road back to Yangling was still unpredictable. I think it would be wonderful to go back again. The temple is nestled at the foot of the famous Zibai Mountain with its high alpine grass top, the attached hotel is good and the Daoists practice Bagua Taijiquan in the morning. Zhang Liang is certainly a key person in the Plank Road history and the roads to the west of the temple as far as Tianshui are still to be done. Where better to camp along the way?

Back along the Baoye Road

As we went to the car, driver Zhang told us that the road to Baoji was blocked by an accident and we would have to go back along the same road we came. It was no problem to me as that was what I had come to see and we had missed a few important GPS points. However, The Huang family were expecting to take the bus from Baoji to get back to Hanzhong. We took them to the turnoff to the Baoye Road so that they would also have buses from Taibai as an option. They did not seem perturbed by any of this and it was amazing to see them happily get off in what seemed the middle of nowhere to get their bus to Hanzhong. The Chinese have worked out it is no good getting upset or anxious. The only person who suffers is the person who does.

So, it was a straight run back for us through to Taibai and past the holes in the cliffs, the stone planks and along the beautiful valley of the Bao River. We got a few more GPS points to fill in the route but basically had to push steadily along to get back to Yangling at a reasonable hour. There was an interesting traffic jam at the Shitou Dam but otherwise it was a good trip along the back road.

The traffic jam at the dam was what I think could be called “Type 3 road work” in China. I think Type 1 is the sudden appearance of road hazards consisting of odd piles of stones on the road that are too regular to have fallen from a cliff or a truck. Type 2 is when there are also people all over the road digging at parts of it. There are never any signs or warnings. Type 3 is total road closure while people, trucks and animals still try to pass by the road work creating total confusion until the repairs are finished.



Traffic Jam at the Shitou Dam

But among the examples of road work we had experienced, the final wait at Shitou River Dam was quite respectable and the people waiting in an extraordinary range of vehicles were remarkably patient and friendly. After the traffic started to move again we wound around the new concrete pylons of this modern day “Plank Road” and returned to the Wei River plain. After that, we finally found Meixian (after being lost again) and as the sun disappeared into the haze we headed for Yangling and a rest.



Late Evening at Meixian – near the entrance to the Xi'an Tollway

Conclusions

From the visit seem to have emerged many reasons to visit again. But it will not be immediately. I now have more information and material than I can cope with and a much better appreciation of what has to be done. I have met many people who are very interested in how “3S” (Remote Sensing, GIS and GPS) can help resolve remaining questions from the ancient times and act as a base for managing preservation, conservation and protection of the relics. There is a lot to get on with and complete before I can take in any more.

Also, there is the tourism. The Baoye Dao is a back road at present but will not be so for long. Perhaps one day it will also be a major “history road” with road side stops and displays. But before that happens the roads need to get better, the facilities need to be better and the relics need to be identified, preserved, conserved and protected. The roads from Chengdu to Baoji or Meixian can support a lot of Chinese and overseas tourism but the groups involved need to work quickly to protect the heritage and work together to exploit the benefits of tourism while avoiding its dangers. I am sure all of the people I met know this and are working to make the west of China a place of pilgrimage for many Chinese and a place of great interest and adventure to many western people. If “3S” can help it will be a great thing to have contributed a small part to the effort.

A reading list for interested people

Some of the books that provided me with information are listed below in case interested readers would like to travel the roads in these works for themselves. There are others now that have been brought back from China – but these will start you on the way. Have a safe journey (一路平安).

Needham, J., Wang, L. & Lu G.D. (1971). *Science and Civilisation in China. Volume 4. Physics and Physical Technology, Part III, Civil Engineering and Nautics.* Cambridge University Press.

de Crespigny, R. (1984). *Northern Frontier – The politics and Strategy of the Later Han Empire.* Faculty of Asian studies, Australian National University, 1984.

Luo, G. (1360?). *Three Kingdoms.* Translated by Moss Roberts. Foreign Languages Press, Beijing, 1994. (罗贯中, 三国演义)

Sima Qian (120 BCE). *Records of the Grand Historian.* Translated by Burton Watson, Columbia University Press, 1961, (司马迁, 史记)

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Yangling, Shaanxi, July 2005