The transport of coins in China is a subject that has barely been touched and is wide open for exploration. In an earlier study, I touched upon the transport of coins in a military context in the Han dynasty, more specifically the supply of money to pay troops on the north-western borders (1). This paper leaps forward several centuries and looks, in a more commercial context, at the transport of copper specifically for coinage in the late eighteenth and early nineteenth century. It introduces an anonymous, undated and unpublished manuscript « Tong yun sheng guan jue », which appears to be an insider's guide for officials charged with transporting copper from the mines in Yunnan province, south-western China, up to the mints in Beijing in the north (2). Shortly after presenting my paper at the « Transport of Coins through the Ages » conference I learnt that Professor Hans Ulrich Vogel, University of Tübingen, was the first to discover the manuscript in the Library of the Chinese Academy of Social Sciences, and that he, together with Dr Nanny Kim, University of Heidelberg, are working on a detailed study of the manuscript which shall be published as an article or small monograph. I have not

(1) Documentation evidence of the Han dynasty found at the Juyan sites in Inner Mongolia has provided extensive details of account-keeping. The largest sums of money recorded were for official and military salaries, often paid three months in arrears (i.e. quarterly). A small number of documents, all of which refer to payments in arrears, record that the coins came from the storehouses in the capital city and prefectures. They show that in the first century AD the Han government was prepared to transport coins and textiles over very long distances when local sources were insufficient. The origins of these coins were recorded at every stage of the journey, indicating that their supply was exceptional rather than regular. For further details, see my book Money on the Silk Road, the Evidence from Eastern Central Asia to c. AD 800 (London, 2004), especially chapter 7; and my paper « Official Salaries and Local Wages at Juyan, North-west China, 1st c. BC to 1st c. AD », presented at the Wages and Currency Seminar, organised by Jan Lucassen and Arent Pol in Leiden, 2002 (publication forthcoming).

(2) I am grateful to Professor Su Rongyu of the Chinese Academy of Social Sciences (CASS), for bringing the manuscript to my attention.

seen their work yet and offer my preliminary findings here in anticipation of their more scholarly publication (3).

Background

The currency of China during the eighteenth and early nineteenth centuries consisted of "cash" coins and silver ingots. The "cash" were made of brass and were produced at various state authorised mints in China, the most important of which were the Board of Revenue and Board of Works mints in the capital, Beijing (4). There was no state control over the production and use of silver ingots (5). Nominally, the exchange rate was one thousand "cash" per liang (a weight of 37 g) of silver, although this was subject to variation. In general, coins were used in smaller everyday transactions and silver in larger ones.

Copper was essential for the production of bronze and brass coins. After the establishment of the Qing dynasty in 1644, copper was initially sourced from within China (1644-1665). In 1666 a ban on sea travel was lifted, and thereafter copper was also sourced from overseas, in particular from Japan (5). By 1695 Japanese sources of copper were diminishing and it became imperative to find new sources. The answer lay in Yunnan province, in southwest China.

In the 1670s and 1680s Yunnan had witnessed major uprisings against the Qing dynasty. When the situation was settled in 1682, Yunnan was poor and in need of development. A key question was how to pay the troops that were stationed in the newly settled areas with funds that could be sourced locally. It was suggested, among other measures, that mining should be restored and expanded, and that the mines should pay a percentage of their income to the local government as a mining tax (as had previously been the case). The expansion of mining coincided with the diminishing of copper sources in Japan, thus prompting Chinese central and regional authorities to seek copper from Yunnan, and further stimulating the copper industry there.

In the 1720s there was a move to develop transport routes in Yunnan. The development of the Jinsha River route took six years and aimed at

(3) I am, however, very grateful to Vogel and Kim for their helpful comments on this paper, in advance of their own publication.

(4) For a study of Qing dynasty coins, see D. Hartill, Qing Cash (Royal Numismatic Society Special Publication, 37), London, 2003.


allowing remoter mining areas, such as Dongchuan and Zhaotong, to link up with the major transport routes. The next seventy years saw a further development of copper mining in Yunnan and the establishment of local administrative offices to monitor the quality of the copper and co-ordinate transport. There were three main outlets for Yunnan copper: the Board of Revenue and Board of Works mints in Beijing; the mints in Yunnan; and other provinces and regions.

By 1727 Yunnan was producing about 1,800,000 kg of copper a year, of which two-thirds was surplus to its domestic needs and was available for sale. In the Yongzheng period (1723-35) coins intended for issue in Beijing were minted in Yunnan for a few years, but this practice was soon abandoned. The provinces produced coins in their own mints, and during the Qianlong period (1736-95) most of them adopted a system of dispatching copper procurement officials to Yunnan to buy the required copper there and supervise its transport to the provincial mints.

In 1736 the Beijing mints were sourcing roughly half their copper in Yunnan and half from overseas sources. By 1737 this had risen to 100% Yunnan copper, most of which came from the Tangdan and Lulu mines.
There were basically two main routes for transporting copper out of Yunnan: the Xundian route and the Dongchuan route. The Xundian route was mainly used for transporting copper from mines throughout Yunnan, including Western and Central Yunnan. Taking this route from Ludian to Luzhou, one would cover more than 600 km by land and over 450 km by water. The Dongchuan route was the more convenient route for taking copper out of Yunnan: from Dongchuan to Luzhou, one would cover more than 600 km by land and over 700 km by water. Both of the routes converged at Luzhou on the Yangzi River.

The route from Luzhou to Beijing followed the Yangzi through the major river ports of Chongqing, Hankou and Yizheng, before transferring to the Grand Canal (Yunhe Canal) which would lead to Tianjin, Tongzhou and Datongqiao. The entire water route covered over 4,000 km. From Datongqiao there was a short overland journey to Beijing (7).

(7) This section relies heavily on Yan Zhongping, *Qing dai Yunnan longzheng kao* [Copper Administration in Yunnan during the Qing Dynasty] (Zhonghua shuju), Beijing, 1957.
The insider's guide: « Tong yun sheng guan jue »

The « Tong yun sheng guan jue » provides a very detailed account of the journey from Luzhou to Beijing, written by someone who knew the route well, for someone who was probably new to the task. My findings are summarised below in terms of the route, boats and crew, contracts and documentation, security, gifts, ritual sacrifices and expenses. Further details will be presented in Kim and Vogel's study of the manuscript.

The route

The outward journey from Luzhou to Beijing took eleven months: Luzhou to Hankou (four months), Hankou to Tongzhou (five months), Tongzhou to Datongqiao [Beijing] (two months). The return journey from Beijing to Luzhou took just three months. The guide specifies how many days would be spent in each place (for example, Luzhou 35-40 days; Chongqing 25 days; Hankou 40 days, Yizheng 20 days). A maximum of three extra days could be allowed at port owing to bad weather, but any delays longer than three days were to be reported.

Boats and crew

The guide recommends hiring existing boats (not making new ones), and if possible hiring a crew that was familiar with those boats and with the route. Of course, it was important to check the capacity and strength of the boats. In general, the boats would travel in groups of twelve. At certain stages of the journey, it would be necessary to hire new boats. Boats of different capacity would be hired at different locations, for example, boats hired at Hankou would have double the capacity of those hired at Luzhou. The guide also recommended avoiding local guide-boats and their dishonest owners wherever possible.

The guide gives details of the crew, individual job descriptions and standard rates of pay. Indeed, throughout the manuscript the author stresses the need to pay the crew: not only the agreed rates, but also bonuses for good work along the way. At the same time, it was important that strict rules were agreed with the crew. For example, they were allowed to bring clothes, wooden implements and food, including their own rice, which they would cook for themselves. There were also instructions regarding other personal belongings of the crew. A banner with the boat rules would be fastened up for all to see, banning drinking, fighting and other misdemeanours. Any violation would be punished. A register was kept of all crew members, detailing the name, age, date of birth and facial description of each man. All crew members were issued with identification plaques, which would be checked frequently and collected in after the completion of the journey. There would be a bonus for returned identification plaques, and a fine for lost ones.
Contracts and documentation

It was essential that proper records were made and kept. The guide recommends that when selecting boats and negotiating the price, the official should draw up an all-inclusive contract covering the journey from Chongqing to Hankou. At Hankou he would then have the option of extending the contract for the next part of the journey. This would have the advantage of motivating the crew to perform well. The guide also recommends that the company leasing out the boat should be responsible for its maintenance, and the official should be responsible for ritual sacrifices along the way. It also recommends setting a fixed price, paying a deposit, and then paying in instalments along the journey. Similarly, it was important to ensure that the costs of the crew were included in the price. The official would be responsible for his own personal expenses (8).

The guide instructs the official to have a special seal-stamp made for the journey (a commission that would involve paying for the stamp, the calligrapher, the carver and, finally, its delivery). It also recommends hiring staff from local magistracies and prefectures along the way to do whatever documentation was necessary. These were on orders to provide support for the shipments which passed through their territories. They would, of course, demand a fee, but would take care of all the paperwork efficiently.

The paperwork included keeping accounts; passing through customs and toll gates; reporting to various military and civil offices; receipts following payments to the crew to locally hired boat-pullers, security personnel and others; as well as receipts for overnight accommodation and storage, supplies and repairs.

Security

Security of the cargo was of paramount importance. The guide gives instructions for packing and unpacking the loads, and stresses that the original packaging must always be used in order to guard against theft and swapping of goods. It also insists that official weights and measures should be used at all times. There should be secure storage of the load on board the boats, and the loads must be sealed against theft. However, the crew must be able to open and move the load quickly in case of emergency. There was always a danger of damage to the boat from weather and river conditions, as well as from sabotage, and the crew

(8) I am grateful to Vogel and Kim for their comments that these are standard shipping contracts, and that the existence of the contracts shows that the state representative c. 1800 had become a market player. They are also investigating if, and in which respects, the contracts between transport official and shipping broker were different from those between ordinary merchant and broker.
would have to work swiftly in the fast flowing waters. Similarly, when mooring the boats at night, it was good practice to moor them in groups, so as to be able to call up help, and to pay local armed security personnel to patrol the moorings. In terms of sabotage, the chief threats were from local guide-boats and divers. Local guide-boats were known to lead boats on to the rocks; and local divers had a reputation of being unscrupulous treasure-seekers.

**Local products for gifts**

In addition to the advice about when and where to buy certain supplies for the boat (including barrels, bamboo mats, balances, baskets, red cloth for banners, locks, lanterns, candles or lamp-oil, arms, cooking utensils, rope and food stocks), the guide also recommends which local products to buy to take along as gifts. Before leaving Yunnan, one should buy such things as Yunnan copperware (including copper basins, hand-warmers, and spittoons), the famous Pu'er tea, the famous Yongchang gaming pieces, boxes of cigarettes and soap, hooks for mosquito nets, small spoons, bone chopsticks and as much jade (bracelets, cigarette holders, cap decorations) as possible. The guide also suggests buying silk in Luzhou; ceramics and rice wine in Wuhu; silk, silk hats and silk bags in Nanjing. All these would make excellent gifts for officials and others along the way.

**Ritual sacrifices**

A very interesting aspect of the guide concerns the many references to ritual sacrifices. The guide notes that in earlier times it had been important to stage ritual performances at temples, to engage local performing troupes, and invite the crew, labourers and local officials to the ritual and to a banquet. However, it comments that this is an expensive practice and of little use, and that it is usually sufficient to buy meat and make the sacrifice at the riverside near the boat. If your intention is genuine, says the guide, then this action should offer sufficient protection.

In most cases, the practice was to select an auspicious day, to arrange the ritual performance in a particular temple (one would expect to pay the monks for this service); to invite the crew to the ritual performance and to a banquet; to present gifts; and to make a meat sacrifice at the riverside (afterwards the meat would be given to local officials or managers). There might also be incense, firecrackers and wine. The meat sacrifices usually included a combination of sheep and pig, or three pig-heads. Sacrifices of chickens were made on the boats.

At the end of the guide there is a list of the names of different winds in different places. All of these seem to have Daoist names and to be associated with Daoist mythology. It is likely therefore that the temples named on the route were also Daoist.
Expenses en route

Before setting out on the journey, the official would go to the Treasury in Yunnan to collect his first payment. This included 820 liang of silver as an advance payment; 2,040 liang of silver to pay for water and labour costs; 960 liang of silver to pay for packing costs; and 120 liang of silver for port fees. He would pack the silver into wooden boxes, each holding 1,000 liang of silver, which were then sealed. Further payments would be collected at Hankou (1,740 liang of silver) and at Dantu xian (Anhui province: 2,700 liang of silver).

It may be interesting to summarise the last part of the journey, as a taster to the more detailed account of the entire journey. At this stage, the official has left Tongzhou on his way to Datongqiao (and thence Beijing) and it is a testing time. The guide says he will need three men to watch each boat, and he will need to send someone ahead to Beijing to announce their arrival. It is essential to co-ordinate the timing of the arrival of the copper in Datongqiao. The guide warns that between Tongzhou and Datongqiao there will be many people offering to do the documentation, but that most of them are cheats and should be avoided. At Datongqiao the official will need six or seven people to watch each boat, and will have to pay for labourers, candles and lanterns. He will have to keep checking that the packaging is secure and intact, and insist that the crew are alert through the night. He will have to move loads into buildings and guard them. One day ahead of delivering the copper, he should send someone with the documents and money to find Mr Chen, an officer who will designate a storehouse. The storehouses are filthy, so he should find Mr Sun, and give him 1,500 cash to clean and prepare the storehouses. The storage facilities are dreadful: they are by the roadside, they are not secure, they have matting rather than solid walls or doors, and thieves there work fast. The official is advised to pay the local security guards, and watch the load day and night. The official should give presents or money to the local inspectors, who will help arrange carts. He will need to pay for the passes at Datongqiao, to hire local packers (who will expect food daily and a banquet upon completion, as well as payment), and to arrange the loading of 30-40 carts to carry the load to Beijing. He will need to write down the number of carts and their loads on a red list, ask two men to take the list to Beijing and get passes (without passes, he will have to stay, and pay for, an extra night), then report to the Board of Revenue and the Board of Works, and report all the costs. In Beijing, once the copper had been handed over to the Board of Revenue and Board of Works, the official would sort out his accounts, put in claims for expenses, thank everyone and relax. The safe completion of the journey and the paperwork would indeed be a cause for celebration.