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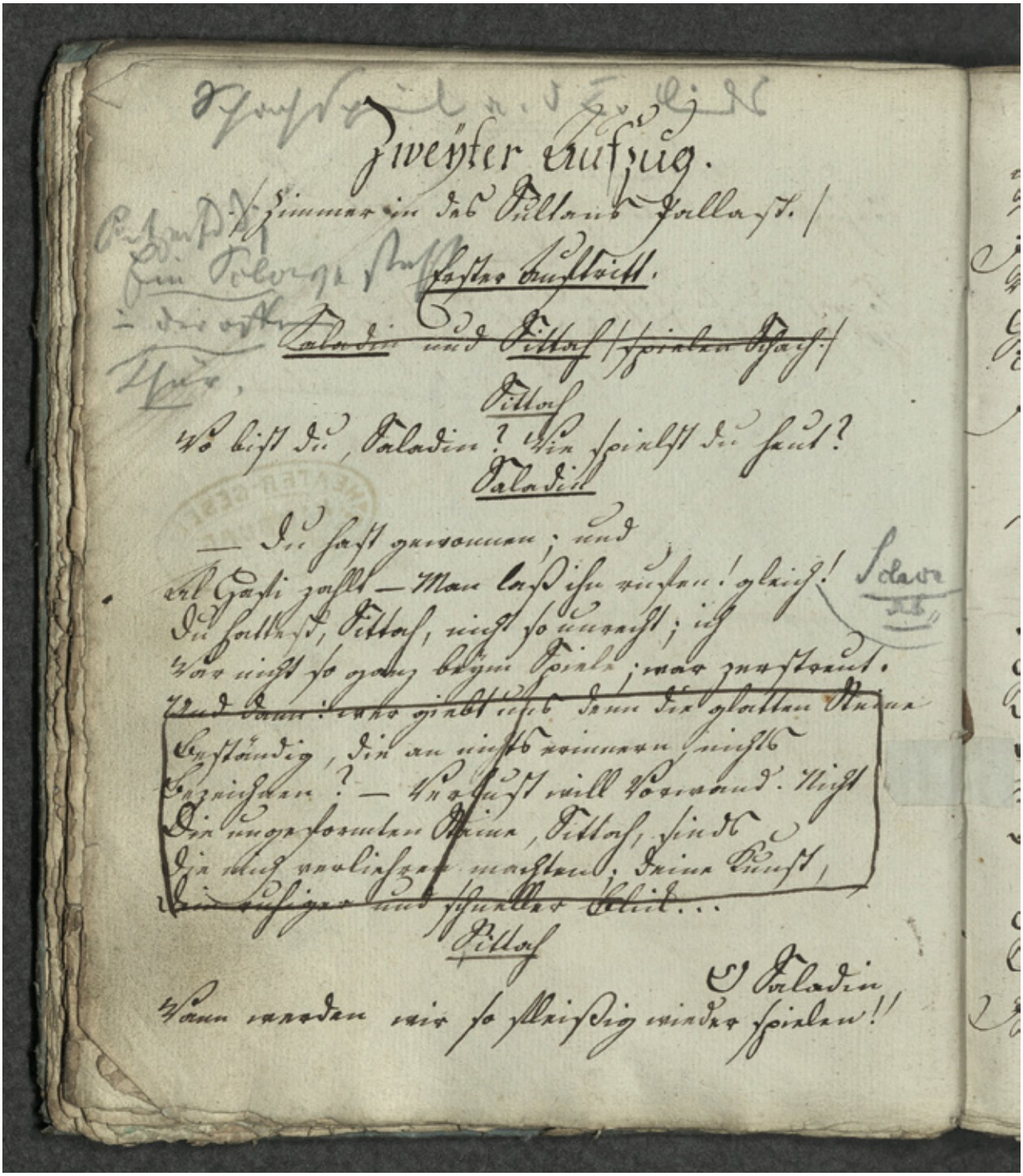

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Hamburg, State and University Library Carl von Ossietzky, Theater-Bibliothek: 1988a, fol. 23^{v}. Different changes in a prompt book of Gotthold Ephraim Lessing's *Nathan der Weise, ein Schauspiel in fünf Aufzügen von Lessing für die Bühne gekürzt v. Schiller* ('Nathan the Wise, a play in five acts by Lessing abridged for the stage by [Friedrich] Schiller'); first performance in Hamburg in the present version: 2 December 1803 (according to the playbill) < https://resolver.sub.uni-hamburg.de/kitodo/HANSh3323>. © Public Domain Mark 1.0. See the contribution by Martin Schäfer and Alexander Weinstock in this volume.

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Article

Mapping the Qing Empire in the Eighteenth Century: Hand-drawn Maps from the 'Qing Atlas Tradition' at the Museum am Rothenbaum in Hamburg

Diana Lange | Hamburg and Berlin

Abstract

The Museum am Rothenbaum – Kulturen und Künste der Welt (MARKK) in Hamburg has an impressive collection of maps from East Asia, including a more than twelve-metre-long scroll with 25 hand-drawn maps of Chinese provinces, border areas and tributary states (referred to as the 'MARKK maps' or 'MARKK scroll' hereafter). Printed eighteenth- and nineteenth-century maps of provincial China in the form of an atlas are not only found in numerous institutions in China itself, but also worldwide (such as the Library of Congress, the British Library and the Bibliothèque nationale de France). Sets of hand-drawn maps are considerably rarer. In fact, I have not been able to find any other comprehensive sets of maps comparable to the maps in Hamburg so far. The MARKK maps' cartometric properties and cartographic conventions suggest that they belong to the atlases made at the Qing court, of which the *Kangxi huang yu quan lan tu* 康熙皇輿全覽圖 ('Maps for a Complete View of the August Empire of the Kangxi Era') published in the early eighteenth century was the first. This paper aims to provide (i) a first detailed description of the map scroll's layout, its materiality and content, (ii) an attempt to classify it among the 'Qing court atlases' and (iii) a discussion of the scroll's date of production and origin.

1. Introduction: the task of mapping territory in early eighteenth-century China

One of the most comprehensive mapping projects in Chinese history was conducted in the early eighteenth century and involved a small number of European missionaries. During the first century and a half of its existence, the Qing dynasty (1644–1911) was remarkably successful in its effort to build and expand its empire – it doubled the amount of territory it controlled, in fact.[1] The Kangxi Emperor (r. 1661–1722) commissioned a group of French Jesuit missionaries to survey and map the extent of his empire in conjunction with Qing officials, using new cartographic techniques based on triangulation. Up till then, Chinese mapmakers had treated the Earth as if it were square (and the heavens round) and made use of a basic plan of it consisting of a rectangular grid, thus ignoring the curvature of the Earth's surface.[2] With the arrival of European missionaries in the late sixteenth century, Jesuits added to the geographical knowledge that the Chinese already possessed at that time. With the help of Chinese converts to Christianity, Matteo Ricci (1552–1610) produced several different versions of a Chinese *mappa mundi*. The *Kun yu wanguo quan tu* 坤輿萬國全圖 ('Complete Map of the Myriad Kingdoms of the World'), which was printed in 1602 by Ricci and his Chinese collaborators Zhang Wentao 張文濤 and Li Zhizao 李之藻, was the earliest known Chinese map of the world made in a European style. It followed the *Typus Orbis Terrarum* produced by the cartographer Abraham Ortelius (1527–1598), which was based on an oval projection. China was put at the centre of the Chinese version of the map.[3] Subsequently, the Qing court patronised scientists and technicians from Europe, and new cartographic techniques, such as the use of longitude and altitude to locate points on the Earth in relation to each other, were adopted for specific purposes.[4] In particular, the Kangxi Emperor – who was well versed in natural sciences – had a strong interest in the new sciences and technologies

[1] Hostetler 2001, 33–35.

[2] Needham 1959, 498.

[3] See Elman 2005, 127–133. For more on the *Kun yu wanguo quan tu* in the Library of Congress (LOC), see <https://lccn.loc.gov/2010585650>.

[4] Hostetler 2001, 24.

introduced by Europeans.[5] As Laura Hostetler has stated, 'the Kangxi emperor's desire for "a precise map which would unite all parts of his empire in one glance" corresponded roughly with Peter the Great's mapping of Russia, French cartographic projects at home and in the New World, and early British colonial exploits in India'.[6] During his reign, the Jesuits were given an opportunity to demonstrate the benefits of their cartographic techniques. In 1707 they were commissioned to survey and map the region of Tianjin (east of Beijing), followed by the area around Beijing and the Great Wall. Kangxi was satisfied with the results and consequently ordered the rest of the empire to be surveyed by them.[7] The journeys and measurements were undertaken by the missionaries and Qing officials between 1708 and 1717.[8]

A first woodblock print atlas was presented to the Emperor in 1717, followed by a copperplate engraving edition in the same year and a revised version of it in 1719. A revised woodblock edition of the work, which became known as the 'Kangxi atlas', was produced in 1721. The carving and printing of the two woodblock editions took place at the Imperial Workshops (*zao ban chu* 造辦處) in Beijing,[9] namely in the *xiu shu chu* 修書處 ('book compilation department'). None of the maps printed immediately after the land surveys were available for public sale before the twentieth century. The Manchu court restricted access to and local reproduction of these surveys and maps. For the remainder of Kangxi's reign at least, they remained at court for perusal by the Emperor and senior court officials.[10] Later copperplate versions were produced on behalf of succeeding emperors: for Yongzheng (r. 1722–1735) in 1728 and for Qianlong (r. 1735–1796) in 1757 and 1770.[11]

I believe that the hand-drawn maps on the scroll in Hamburg are closely linked to the woodblock edition of the 'Kangxi atlas' produced in Beijing in 1717, entitled *Kangxi huang yu quan lan tu* 康熙皇輿全覽圖,[12] as the composition, the titles and visual organisation and the contents of the maps correspond on several levels. Presumably they were also produced in the Imperial Workshops in Beijing.

2. The layout and materiality of the MARKK scroll

The MARKK scroll is made in the format of traditional Chinese handscrolls known as *shoujuan* 手卷. Including the mounting, it is 60.5 cm high and 1,289.5 cm long (almost 13 metres). The scroll is made of 25 maps put together. They were combined into four parts on the scroll: maps 1–5, maps 6–13, maps 14–19 and maps 20–25 (see the list of maps below). The maps in each part have all been pasted together, lined with very thin paper and then put on a drying board to dry. The maps were reassembled into two big parts on the scroll: (i) maps 1–5 and 6–13 and (ii) maps 14–19 and 20–25. The whole scroll was restored extensively by Camille Schmitt in France in 2020.[13] Before the restoration, it was protected by a cover made of decorative blue patterned silk brocade and bore a small label on which the title was written (see Fig. 1). The colour of the silk had faded and showed evidence of previous repairs. The paper showed signs of wear in some places along with some damage due to cracks and cuts. According to Camille Schmitt, the handscroll had been restored twice in the past: once in China after being badly damaged by insects and then later in Europe. The Chinese mounter did not do a very good job of the remounting, though, using rectangular patches, an unusual cover[14] and stiff paper. The cover was restored in Europe at various points by using patches made of Japanese brocade. In the course of the recent restoration, the stiff lining had to be taken off, the creases in the scroll were smoothed out and the scroll was given a new silk coating. The former light blue strip on the paper border, the former mounting silk and the cover had to be replaced.[15]

[5] Hostetler 2001, 37–41. For an in-depth study on Kangxi's interest in natural sciences in general and in European sciences in particular, see Jami 2012.

[6] Hostetler 2001, 4.

[7] Yee 1994, 180–181.

[8] Cams 2017, 201. For a detailed overview of the exact dates and the people involved, see Fuchs 1943, 9.

[9] The Imperial Workshops (also known as the 'Palace Workshops') were established within the walls of the Forbidden City of Beijing. All kinds of works of art were produced there, such as scroll paintings, silk screens, porcelain, and carvings on ivory, jade and glass.

[10] Cams 2017, 179–181 and Elman 2005, 131.

[11] Cams 2017, 201. This work also provides further information on the history of collaboration between 'East and West' in the mapping of Qing China.

[12] Short title: *Huang yu quan lan tu* 皇輿全覽圖.

[13] See Camille Schmitt's website 'Asian Painting Conservation Studio' <http://www.silkandpaper-restoration.com/index.php/en/>.

[14] The mounting is nearly like a traditional one because it has a *fu ge shui* 副隔水 (a piece of damask silk in front of the painting when the scroll is opened). The *fu ge shui* after the painting is very short, however, which means that the scroll may have been too long for the drying board used by the former mounter, who was then unable to add a very long 'scroll ending'.

[15] See the restoration report by Camille Schmitt. So far, no record has been found that could provide any further information about the restoration of the scroll in Europe.

The scroll is entitled *Tianxia yutu* 天下輿圖 ('Maps of [Everything] under the Heaven'). The term *yu* [*di*] *tu* 輿[地]圖 ('map of the empire') originates from the Han dynasty (202 BCE–220 CE)[16] and continued to be used for numerous maps in later centuries. The well-known *Guang yutu* 廣輿圖 ('Enlargement of the Terrestrial Map') by the Ming cartographer Luo Hongxian 羅洪先 (1504–1564 CE) is the oldest surviving atlas of China to use the word *yutu* in the map's title. The term *tianxia* ('[everything] under the heaven') reflects the Chinese perspective on the empire with the Emperor regarded as the representative of the cosmic order; his power was believed to have been legitimised by a mandate from heaven. The *tianxia* concept was the key to government and self-understanding for over two millennia in the Chinese Empire.[17] China is depicted as the 'central state' on *tianxia* maps, as they are known, and thus represents their focal point. Maps of this kind were produced until the late nineteenth century.[18] Next to the title label, one can see a note in pencil that says 'Landkarte' (German for 'map', lit. 'map of the land') and a little sticker with an inventory note ('640:07') written in red ink. Unlike other Chinese handscrolls, this one does not contain a frontispiece at the beginning, but starts with the first map. At the beginning of the scroll there is a wooden stave on which a cord and a flat fastening pin made of ivory are attached to secure the rolled-up scroll.[19] The scroll does not contain a colophon or provide any information about its maker, place or date of production.

The maps, which are of varying sizes and all face north, are arranged in the following order with the respective titles on the scroll (Table 1).

Fig. 1: Part of the scroll's outer silk cover with the title label and a pencilled note written on paper. Traces of restoration work are clearly visible. This photo was taken before the scroll was restored by Camille Schmitt.

[16] The earliest occurrences are in chapter 58 (one) and chapter 60 (two) of the *Shiji* 史記.

[17] For a detailed discussion of the *tian xia* concept, see Pflug 2019.

[18] See the *Tian xia zong yu tu* 天下總輿圖 made *c.* 1890, for example: <https://www.loc.gov/resource/g7821fm.gct00346/?st=gallery>.

[19] For a detailed description of the individual parts of a Chinese handscroll, see van Gulik 1958, 67–69.

Table 1: List of the maps included in the *Tianxia yutu* scroll.

No.	Transcription	Chinese title	Translation
1	*Zhili quan tu*	直隸全圖	complete map of Zhili
2	*Shanxi quan tu*	山西全圖	complete map of Shanxi
3	*Shandong quan tu*	山東全圖	complete map of Shandong
4	*Henan quan tu*	河南全圖	complete map of Henan
5	*Shaanxi quan tu*	陝西全圖	complete map of Shaanxi
6	*Jiangnan quan tu*	江南全圖	complete map of Jiangnan
7	*Zhejiang quan tu*	浙江全圖	complete map of Zhejiang
8	*Jiangxi quan tu*	江西全圖	complete map of Jiangxi
9	*Huguang quan tu*	湖廣全圖	complete map of Huguang
10	*Sichuan quan tu*	四川全圖	complete map of Sichuan
11	*Fujian quan tu*	福建全圖	complete map of Fujian
12	*Guangdong quan tu*	廣東全圖	complete map of Guangdong
13	*Guangxi quan tu*	廣西全圖	complete map of Guangxi
14	*Guizhou quan tu*	貴州全	complete map of Guizhou
15	*Yunnan quan tu*	雲南全圖	complete map of Yunnan
16	headwaters of the River Jinsha, River Lancang and River Heishui	金沙江, 瀾滄江, 黑水河	no title is provided
17	*Hami tu*	哈密圖	map of Hami
18	*Wusulijiang tu*	烏蘇里江圖	map of the River Ussuri
19	*Shengjing quan tu*	盛京全圖	complete map of Shengjing
20	*Rehe tu*	熱河圖	map of Rehe
21	*Hetao tu*	河套圖	map of Hetao
22	headwaters of the River Wengjin and the Xing'an Ling or Khingan Range	甕金河, 興安嶺	no title is provided
23	*Heyuan tu*	河源圖	map of the Yellow River source
24	*Chaoxian tu*	朝鮮圖	map of the Korean peninsula
25	*Heilongjiang zhong tu*	黑龍江中圖	map of the central part of the River Amur

The 1717 'Kangxi atlas' consisted of 28 maps of varying sizes, depicting the Qing Empire including Manchuria, Mongolia, covering the areas from the mouth of the Heilongjiang (or River Amur) in the east to the district of Hami in the west (in the east of Xinjiang Province today) and from Hainan Island in the south to Lake Baikal in the north.[20] Each of the maps is shown on a separate sheet. The MARKK scroll includes the maps of the same areas as the 1717 'Kangxi atlas', but with three exceptions.[21] The three maps that are not included are the *Heilongjiang yuan tu* 黑龍江源圖 and *Heilongjiang kou tu* 黑龍江口圖 (the source of the River Amur and the Lower Amur) and the headwaters of the River Yalong 雅礱江 in what is now southern Qinghai Province (no title is provided for this map).[22] Compared to the first edition of the woodblock atlas, the revised edition first printed around 1721 and consisting of 32 maps is practically identical apart from the sheets covering Tibet and the north-eastern part of present-day Xinjiang. All the other maps remain unchanged.[23] Neither the 1717 'Kangxi atlas' nor the MARKK map set contains any maps of Tibet.[24]

As in the 'Kangxi atlas', the areas beyond the indicated provincial borders remain blank on the MARKK maps of the fifteen Chinese key provinces; they only contain the titles of the maps and names of bordering regions. The names of places, rivers and other topographic elements were written exclusively in Chinese by a well-trained hand using carbon-black ink.[25] This is also true of the respective map titles, which are enclosed by a rectangular frame drawn in purple ink (made from carmine pigment).[26] All the maps appear to have been drawn by one and the same hand and labelled in the same handwriting. However, it is unclear whether the same person did the drawing and writing. East Asian maps were largely coloured using the same colour system for long periods of time. In general, it can be said that the sea (or at least the coastal area) and rivers were usually coloured in blue or green, while the land was left uncoloured; only topographic elements such as mountains were coloured in. This colour system[27] can be observed on numerous Chinese maps of the provinces and was also employed on the MARKK maps. Mountains and mountain ranges were drawn in blue ink or paint (made from azurite pigment). While the rivers are shown as green lines (made from copper green, probably from malachite), lakes and the maritime coastlines are coloured in a different green tone (made from an unidentified organic material). The only exception here is the Yellow River, which is represented in yellow (made from a mixture of a still unidentified organic material and cinnabar). The representation of these topographical elements and the use of respective colours (the colour scheme)[28] for them are similar to the visual organisation of many Chinese manuscript maps from the eighteenth and nineteenth century. The use of colour and the handwritten labels certainly make the information on the manuscript maps easier for the eye to absorb. The relationship of coast to river to mountain is expressed by fluid colour, which is absent in the printed maps. The calligraphic strokes used to limn the mountains along with the scroll format clearly embed these maps in the tradition of landscape painting.[29]

Administrative information on East Asian maps was presented by using geometric labels, the additional use of colours playing different roles in the different regions.[30]

[20] Also see Li 1996, 160–161 and Yee 1994, 181.

[21] To compare the MARKK maps and the 1717 'Kangxi atlas', I used the woodblock prints reproduced from the 1721 edition by Walter Fuchs in 1941, now kept in the Library of Congress, and his books on the 'Jesuit maps'. See Fuchs 1943, LOC Digital ID: <http://hdl.loc.gov/loc.gmd/g7820m.gct00265>.

[22] It is unclear why maps of these areas were not included in the scroll, as surveys of these regions were carried out in the same period as the ones for the areas shown on the MARKK maps. See Fuchs 1943, 9.

[23] See Fuchs 1943, 15 and Cams 2017, 180–181. For a complete list of the maps, see Fuchs 1943, 2.

[24] A small team of mapmakers – not including European missionaries – went to Tibet in 1717 and returned to Beijing the same year (see Cams 2017, 101 and Fuchs 1943, 13). The maps based on the data collected during this survey were not included in the 1717 atlas, but in later editions.

[25] Later versions of the Yongzheng and Qianlong atlases were also labelled in Manchu.

[26] The investigation of all the colourants on the maps was conducted and interpreted by Peter Zietlow, University of Hamburg. For a detailed discussion of the measurement results see Lange and Hahn 2023, 59–62.

[27] In the context of cartography, a colour system can be described as the way in which a map is painted, i.e. which of its parts have been coloured and why this choice has been made, see Lange 2022, 119.

[28] In the context of maps, a colour scheme refers to the choice of specific colours for the different elements of the map, see Lange 2022, 119–121.

[29] For a detailed discussion of the use of colours on Chinese maps see Lange and Hahn 2023, 14–20.

[30] See Lange 2022 for a detailed discussion of the use of symbols on East Asian maps.

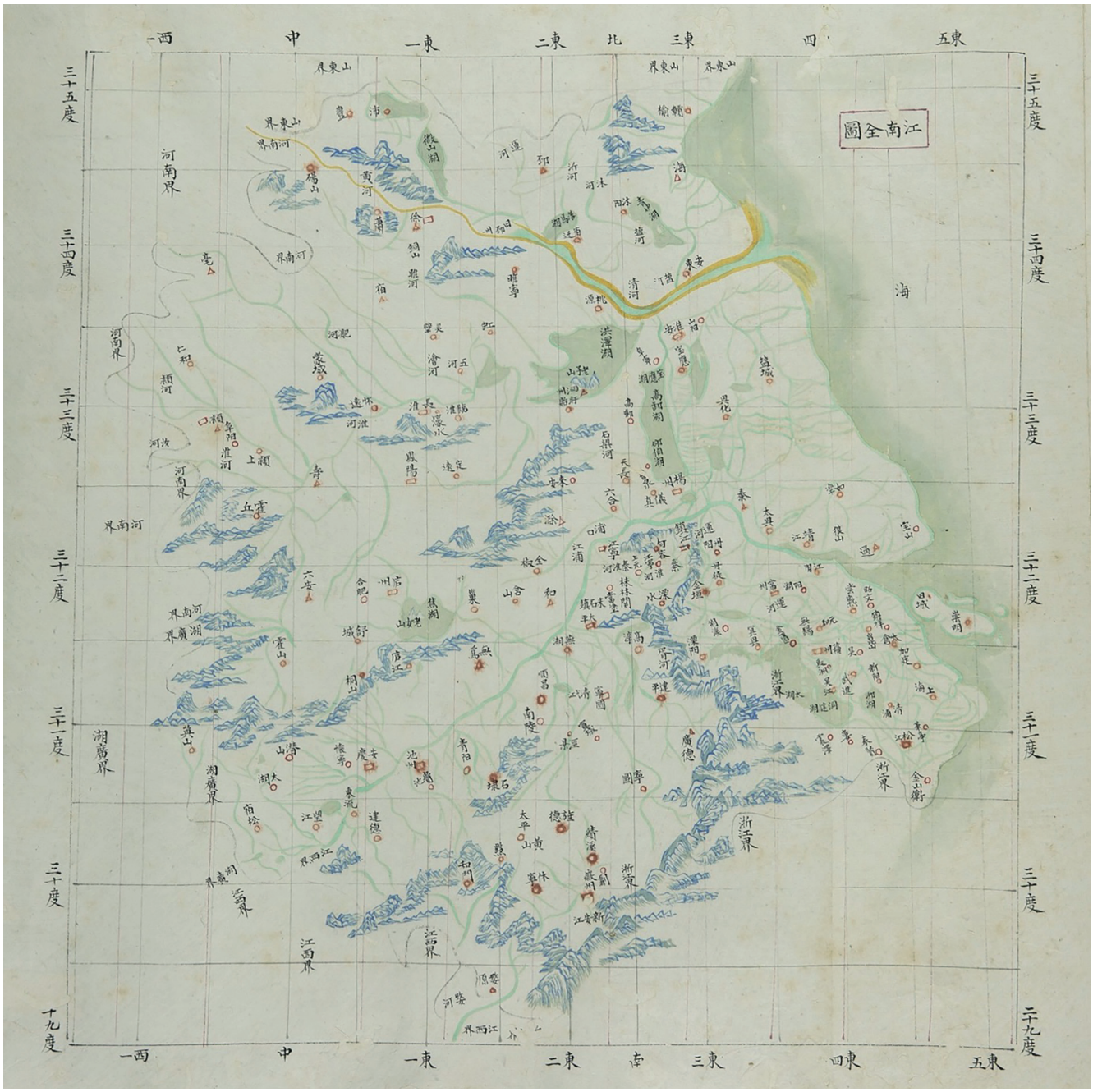


Fig. 2: Representation of Jiangnan Province on the MARKK scroll showing the mouth of the Yellow River in the north.

On Chinese maps, place names were coded using specific coloured and uncoloured shapes to provide information about the size and type of local government and other important features.[31] On the MARKK maps, different symbols drawn in red ink (made from cinnabar pigments) were used to mark the different status of places.[32] They almost match those in the 'Kangxi atlas' (Table 2).

[31] A 'code' refers to any system of signs or symbols that conveys meaning. More precisely, a code is a system of replacing the words in a message with other words or symbols, so that nobody can understand it unless they know the system. For maps, the colour code defines the range of colours selected to convey specific information about the places and features represented on the map (see Lange 2022, 121–122).The tradition of using different colours in map production was established relatively early in East Asia. Three of the oldest existing Chinese maps that were drawn in different colours were found in a tomb from the second century BCE at Mawangdui in Hunan Province in the 1970s. These maps were drawn on silk using vegetable colours. One of the charts is a military map (*Zhujun tu* 駐軍圖) where black lines represent the trends of mountain ranges, green/light brown lines stand for rivers, red dotted lines for roads, red triangles for castles, red lines for boundaries and black circles for villages. Black circles framed in red represent stationed troops and bases for ordnance and rear supplies (see Chang 1979, 12; Cao Wanru et al. 1990, 18 and Yee 1994, 41).

[32] They are mainly based on the map legend introduced by the Ming cartographer Luo Hongxian 羅洪先 (1504–1564) in his *Guang yutu* 廣輿圖 ('Enlarged Terrestrial Atlas') in the sixteenth century, the earliest known use of a map legend on a Chinese map (see Yee 1994, 51).

Table 2: List of the symbols used on the maps in the *Tianxia yutu* scroll.

Place/region	**MARKK maps**	**'Kangxi atlas'[33]**
prefecture (*fu* 府)	red square, only name provided, 府 not included	large square, name plus 府
subprefecture (*zhou* 州)	red triangle, only name provided, 州 not included	small square, name plus 州
district (*xian* 縣)	red circle, only name provided, 縣 not included	small square, name plus 縣 (in a simplified form)
territory (*tu* 土)[34]	red square, name plus 土	large square, name plus 土 and 府
military camp (*ying* 营)	red dot, name plus 营	small circle, name plus 营
garrison（*zhen* 鎮）	red dot, name plus 鎮	small circle, name plus 鎮
subdivision of a district (*si* 司)	(red dot), name plus 司	small circle, name plus 司
town/city (*cheng* 城)	red dot, name plus 城	small circle, name plus 城
government post (*ma zhan* 馬占)[35]	red dot, name plus 馬占	dot, name plus 馬占
horse relay station (*ri* 馹)[36]	cross, name plus 馹	cross, name plus 馹
guard unit (*wei* 衞)	no sign, name plus 衞	no sign, name plus 衞
frontier pass/customs house (*guan* 関)	no sign, name plus 関	no sign, name plus 関
wall gate (*kou* 口)	no sign, name plus 口	no sign, name plus 口
gateway (*men* 門)	no sign, name plus 門	no sign, name plus 門

[33] See Fuchs 1943, 15 and Cams 2017, 180–181.

[34] The term *tu* 土 is only used on the maps of Yunnan, Sichuan and Guizhou Province, all of which are located in the border area between China and the former Tibetan province of Kham. *Tu* refers to the territories that had been ruled for centuries by autonomous local chieftains (*tusi* 土司) in south-west China. They were given their title and seal by the Chinese central government and thus were instrumentalised for indirect rule over these territories; amongst other things, they were responsible for delivering taxes and providing auxiliary troops in case of war. For further information, see Theobald 2016.

[35] This must be a version of 驛站 (*yizhan*). 馬占 is only used on the map of Heilongjiang; 馹 is found on the maps of Rehe, Hetao and Hami.

[36] Fuchs translated 馹 as 'Poststation' ('post station'); he also stated that 馹 is a version of *yi* 驛 (Fuchs 1943, 90 and 94). This statement was confirmed by the historian Max Oidtman (email correspondence on 11 May 2020).

For the majority of Chinese maps, no additional legends for the symbols were provided by the mapmakers, which is also the case for the MARKK maps. There are two possible explanations of this: either the symbols were widely known at the time of the maps' production and thus did not need to be explained in a legend or the mapmakers may have chosen to omit them, in order to make the information available only to a select group of people who were trained to use and interpret these symbols.

Traditional Chinese characters can be found throughout the MARKK maps as well as a selection of simplified characters, such as *yun* 云 (雲), *yang* 阳 (陽), *yin* 阴 (陰), *tai* 台 (臺), ying 营 (管), *luo* 罗 (羅) and *ling* 灵 (靈). In contrast, none of the printed 'Kangxi atlas' maps contain any simplified characters.

Although the 'Kangxi atlas' contains black-and-white woodblock prints and the MARKK maps are hand-drawn and hand-coloured, at first glance the two sets of maps correspond on several levels. If one places the corresponding maps in the two sets on top of one another, the outlines of the depicted areas nearly match up completely. This is true of most of the river courses as well. There are also slight differences. In areas lacking natural boundaries such as large rivers or mountain regions, for instance, dotted lines delineate provincial borders in the 'Kangxi atlas', while solid lines serve this purpose on the MARKK maps. While the Great Wall is represented in a pictographic style and only the names of the wall gates are provided in the 'Kangxi atlas', the Great Wall is shown as a dotted line on the MARKK maps. The so-called Willow Palisade separating the Manchu areas from the northern and western border areas is shown as a line of little parallel strokes with gateways on both sets of maps.

As in the 'Kangxi atlas', the latitudes and meridians are shown on all the MARKK maps – drawn in black. The particular coordinates have been written in the margins. The meridian running through Beijing was adopted as the prime meridian (*bei zhong* 北中), just as it was in the 'Kangxi atlas'. The grid lines of the square grid system[37] used by Chinese mapmakers as an aid for plotting distances and directions were added on all but two of the MARKK maps – in contrast to the 'Kangxi atlas'. They were drawn in a dark purple colour (made from carmine pigment).[38] The drawing of the 'historical' and 'modern' lines in red and black ink seems to correspond with the Chinese tradition of marking the historical chronology of the constellations on star maps in different colours. When Chinese astrologers started depicting the sky in the fourth century BCE, they first used different colours to distinguish the constellations of three different schools of astrology: Shi Shen's school 石申 (red), Gan De's 甘德 (black) and Wu Xian's 巫咸 (white rings).[39] The combination of black and red to distinguish contemporary and historical place names was used in cartography by Jia Dan 贾躭 (730–805 CE), for instance. When producing the *Jingu yu ditu* 今古輿地圖,[40] the earliest historical atlas printed in red and black in 1638 by Wu Guofu 吳國輔, black ink was used for contemporary (Ming dynasty) place names and red ink for ancient prefectures and counties.[41] Red and black were also used on later maps during the Qing dynasty to distinguish between different grid systems. For example, on the nineteenth-century *Huangchao yi tong yu di quan tu* 皇朝壹统輿地全圖 ('Complete Map of the Unified Qing Empire'), the Chinese square grid was coloured in black and the system of longitude and latitude in red.[42]

The only MARKK maps that do not show the Chinese grid lines are those of the north-eastern border areas between the so-called Manchu homelands and the Russian Empire: the map of the River Ussuri and the headwaters of the River Wengjin 甕金河 and the Xing'an Ling 興安嶺 or Khingan Range. The latter map is the only one that differs from the maps shown in the 'Kangxi atlas'. The map in the 'Kangxi atlas' entitled *Selengehe tu* 色楞厄河圖 ('River Selenga map') shows the area north of the Khingan Range: the River Selenga and its source rivers and tributaries along with Lake Baikal. The MARKK map (without a title) only shows the Khingan Range and the headwaters of the River Wengjin in the south-east.

A closer look at the charts shows that the MARKK maps show less information than the 'Kangxi atlas'. They contain fewer names for different places, fewer rivers and less topographical information such as river courses. Unlike the 'Kangxi atlas' maps, they only contain the names of the main administrative divisions such as prefectures, subprefectures and counties.

[37] The square grids on the Chinese maps served as a scaling device, not as a coordinate system.

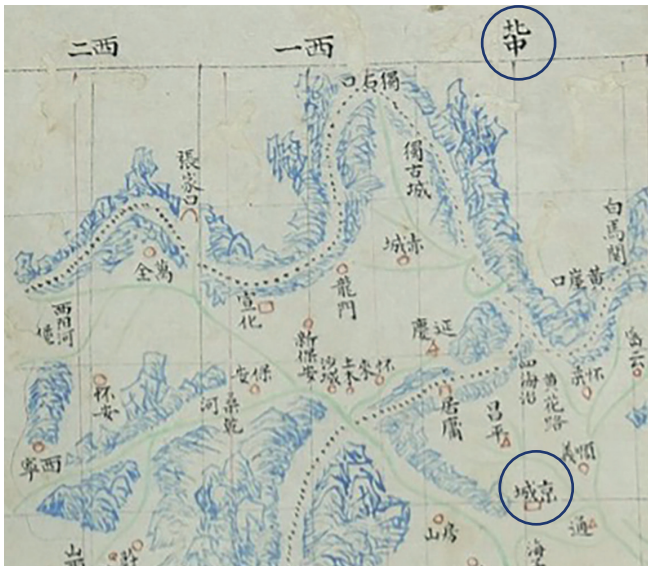
[38] The same colour was used for the frame around the maps' titles.

[39] See Stephenson 1994, 530 and 532.

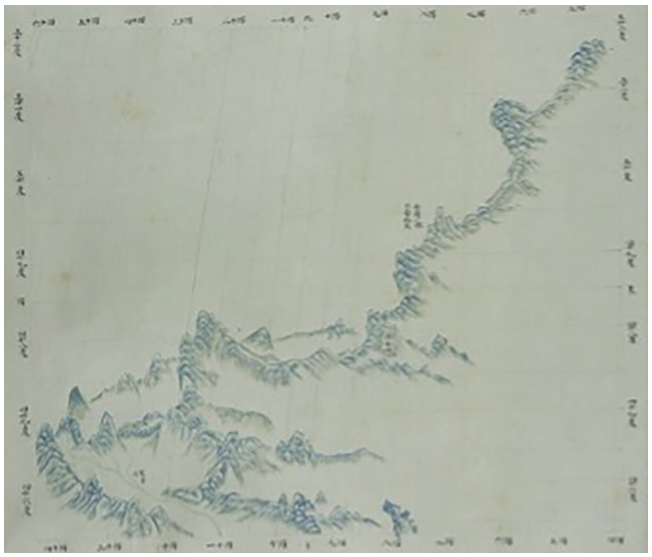
[40] Library of Congress Catalog <https://lccn.loc.gov/2002530058>.

[41] Cao Wanru et al. 1994, 29 (appendix).

[42] Daniel Crouch Rare Books, *Huangchao yitong yudi quantu* 皇朝壹统輿地全圖 [Complete Map of the Unified Qing Empire], Inv. no. 14998 <https://www.crouchrarebooks.com/maps/longitude-and-latitude-on-a-map-of-the-qing-empire>.



Figs 3 and 4: The northern part of Zhili Province showing the Great Wall and the prime meridian running through Beijing on the MARKK map and in the 'Kangxi atlas'.



Figs 5 and 6: The MARKK map showing the headwaters of the River Wengjin and the Khingan Range and 'Kangxi atlas' map of Selenga showing the area north of the Khingan Range with the River Selenga and Lake Baikal.

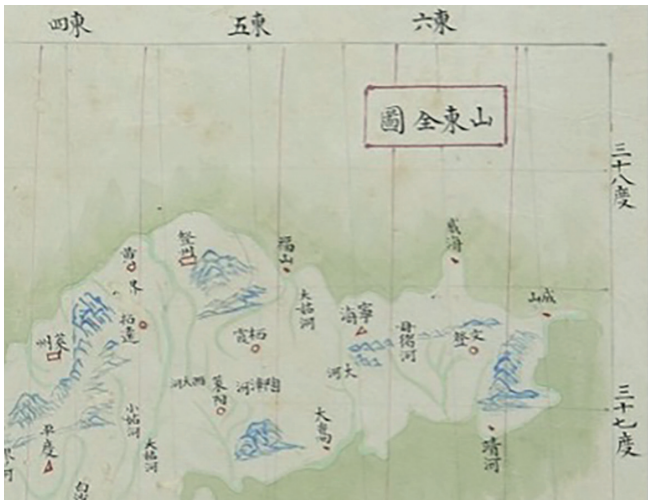


Fig. 7: Detail of Shandong Province on the MARKK map.

Fig. 8: Detail of Shandong Province in the 'Kangxi atlas' showing much more information.

Only one map shows significant details not included in the 'Kangxi atlas': a group of rocks and islands south-east of Hainan on the map of Guangdong. East of Hainan it says 七洲洋 (*qi zhou yang*, 'Ocean of Seven Islands') on the MARKK map. A number of islands are depicted that look like sharp rocks. The long, flat structure shown east of these rocks is described as 萬里長沙 (*wanli chang sha*, 'ten-thousand-mile-long sand'), which refers to shoals or an archipelago – today's Xisha Qundao 西沙群島 or Paracel Islands, called 'Changsha' in early Chinese sources.[43] (The Paracel Islands are now internationally disputed.[44]) The names of the different groups of islands changed over time. The islands are depicted in the same shape on other maps such as on the *Yu di quan tu* 輿地全圖 ('Complete Map of the Earth'), dated between 1798 and 1800,[45] but based on the original map made by Huang Zongxi 黃宗羲 in 1673.[46] The sharp rocks are shown in a similar way on the *Guangdong sheng ditu* 廣東省地圖 ('Map of Guangdong Province'), dated 1739.[47] The shoals and rocks south-east of Hainan are also represented on the maps showing the routes of the fleet admiral and mariner Zheng He 鄭和 (1371–1435) in the military book *Wubei zhi* 武備志 ('Treatise on Military Defence'), compiled in 1621 by Mao Yuanyi 茅元儀 (1594–1640).[48] Since the *wanli chang sha* 萬里長沙 is depicted in quite a number of Chinese maps, it seems logical that the author of the map wanted to add these. What is much more interesting, though, is why they are missing in the 'Kangxi atlas'.

The above statements on the visual organisation of the MARKK show these maps are closely linked to the 1717 'Kangxi atlas'. There are two possible explanations for this: the mapmaker, who had in-depth knowledge of traditional Chinese cartography, may have used the 'Kangxi atlas' as a basis for the maps. On one hand, the MARKK maps have a mathematical foundation and make consistent use of signs, while on the other – and in contrast to the 'Kangxi atlas' – they show 'aesthetic' elements and a use of colours that can be found on many Chinese manuscript maps clearly influenced by traditional landscape painting. The Chinese did not just 'copy' earlier maps blindly, but produced maps in a hybrid style. That could also have been the case here.

The other possible explanation is that the MARKK maps are contemporary with (or perhaps even pre-date) the printed 1717 'Kangxi atlas'. This may be the reason why maps that are included in the 'Kangxi atlas' are missing on the MARKK scroll or why certain maps do not show the Chinese grid lines or differ considerably from the maps in the 'Kangxi atlas', like the map of the Xing'an Ling 興安嶺 or Khingan Range. Is it possible that it was made before the measurements for the *Selengehe tu* 色楞厄河圖 ('River Selenga map') in the 'Kangxi atlas' were completed? The dating of the scroll will be discussed in the next section.

3. Dating the scroll

As Chinese historian Li Xiaocong has stated: 'for pre-1900 Chinese maps, what is most difficult to determine is the date of their production and the administrative situation of their depiction. Most maps in the Ming and Qing dynasties are without a mapping date or the name of the drawer or engraver. Many maps, including government maps, have also lost their title or have a postscript on a label stuck on the cover or verso of the map. Its date is, therefore, to be determined only by the contents of the map, […]'.[49] He suggests examining the following criteria in the maps to this end: their administrative divisions, the language used, the historical geography and the (library or museum) acquisition date.[50] However, one should bear in mind here that Chinese mapmaking focused on copying earlier maps for a long time without changing any of the details, which makes accurate dating using these parameters very difficult.

According to museum inventory documents, the MARKK scroll was purchased from a German company called J.F.G. Umlauff, Naturalienhandlung & Museum[51] in 1906. Thus, the scroll was produced before that date. Concerning its origin, the inventory reveals it was 'aus dem Kaiserlichen Palast, Peking' ('from the Imperial Palace, Beijing'). Although no provenance research has been undertaken yet, it can be speculated that the map scroll was one of the objects that were looted and sold in Beijing during the Boxer Rebellion in 1900.

[43] See Talmon and Jia 2014, 178.

[44] For further information on the history of the Paracel Islands and the dispute, see Chemillier-Gendreau 2000, Shen 1998 and Talmon and Jia 2014.

[45] The map can be viewed online: Library of Congress, <https://www.loc.gov/item/gm71002353/>.

[46] See Lin and Zhang 2013, 85.

[47] See Xie and Chen 2018, 207. The map is kept at the Bibliothèque nationale de France. See <https://gallica.bnf.fr/ark:/12148/btv1b72001244>.

[48] For the map, see Library of Congress, <https://lccn.loc.gov/2004633695>.

[49] Li 2004, 29.

[50] Li 2004, 29–31. Also see Li 1996, 18–20 and 70–74.

[51] The company specialised in importing and selling natural produce and 'curiosities' from overseas and was founded in 1868 in Hamburg. See Lange 2006 for a comprehensive study on the Umlauff Company and family.

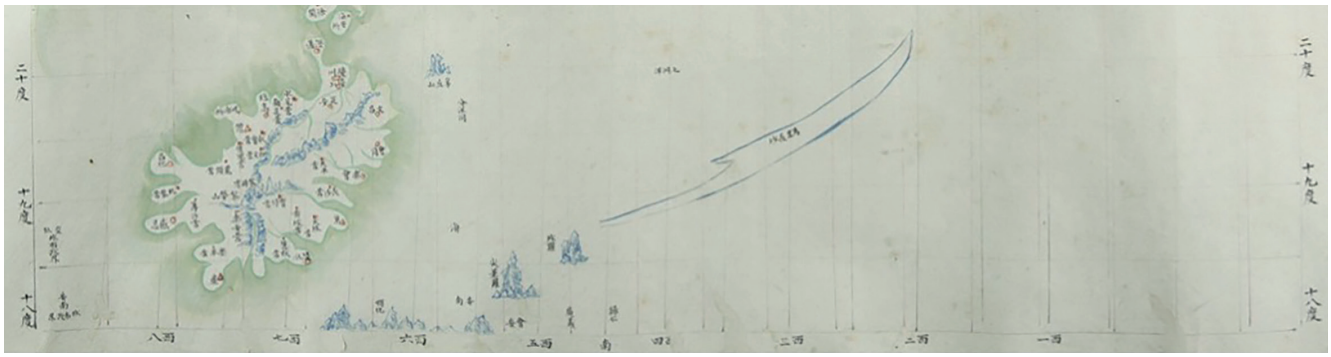


Fig. 9: Detail from the maps of Guangdong Province in the MARKK scroll.

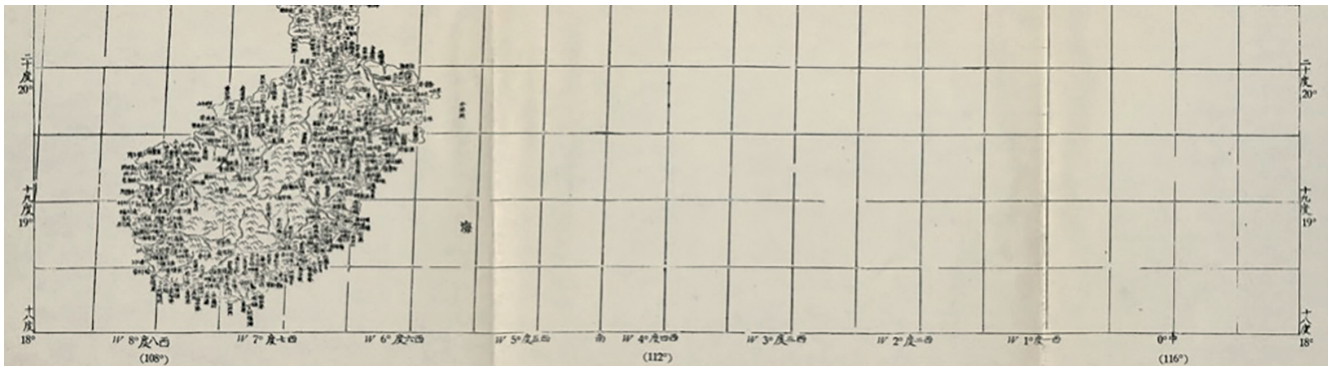


Fig. 10: Corresponding detail from the maps of Guangdong Province in the 'Kangxi atlas'.

The maps' composition and their content – the historical geography, the administrative division and administrative terms – suggest that they were made before 1723. Thus, they could possibly be one of the earliest hand-drawn drafts of the 'Kangxi atlas', which was woodblock-printed later.[52] The administrative division into the three south-western border provinces of Yunnan, Sichuan and Guizhou on these maps and the renaming of a prefecture in that area is a strong indication that the MARKK maps were produced before 1728. During the Yongzheng era, the territory of Sichuan was enlarged dramatically due to the expansion to Tibet, but several prefectures in the south-western part of the province were lost to Guizhou and Yunnan at the same time.[53] In this context, autonomous local chieftains or *tusi* 土司 were gradually subjugated to establish full control over the area by Han or Manchu officials.[54] The three prefectures of Wumeng 烏蒙府, Zhenxiong 鎮雄府 and Dongchuan 東川府 were located in the south-western corner of Sichuan Province until the 1720s. In 1726, Dongchuan was transferred to Yunnan, followed by Wumeng and Zhenxiong shortly after. In the ninth year of Yongzheng's reign (1731), Wumeng was renamed Zhaotong 昭通.[55] In 1728, five counties and a subprefecture including Zunyi 遵義, Tongzi 桐梓 and Huairen 懷仁 in south-eastern Sichuan were transferred to Guizhou Province.[56]

The MARKK maps clearly show the administrative division of Sichuan in the pre-Yongzheng era: the prefectures of Wumeng, Zhenxiong and Dongchuan are included in Sichuan's south-western corner. All three places names are marked by red squares. In addition, Wumeng and Zhenxiong are represented as *tu* 土 (territories ruled by autonomous local chieftains). The counties of Zunyi, Tongzi and Huairen are shown on its south-eastern corner and are marked by red circles. Wumeng is still called 'Wumeng' on the MARKK map and in the 'Yongzheng atlas' (1728)[57]. The administrative changes had not been incorporated into the

[52] The Library of Congress keeps a set of fifteen maps of the key Chinese provinces entitled *Huang yu quan lan fen sheng tu* 皇輿全覽分省圖. They are exact hand-drawn coloured copies of the 'Kangxi atlas' woodblock prints. According to the library catalogue entry, they were made between 1721 and 1722. See <http://hdl.loc.gov/loc.gmd/g7821fm.gct00232>.

[53] Dai 2009, 92 and 98.

[54] Huang 2008, 3–4.

[55] Zhou 2013, 563. Also see Shi 2005 (xia), 1882.

[56] Dai 2009, 104–106.

[57] See <https://qingmaps.org/maps/yongzheng-1728>.

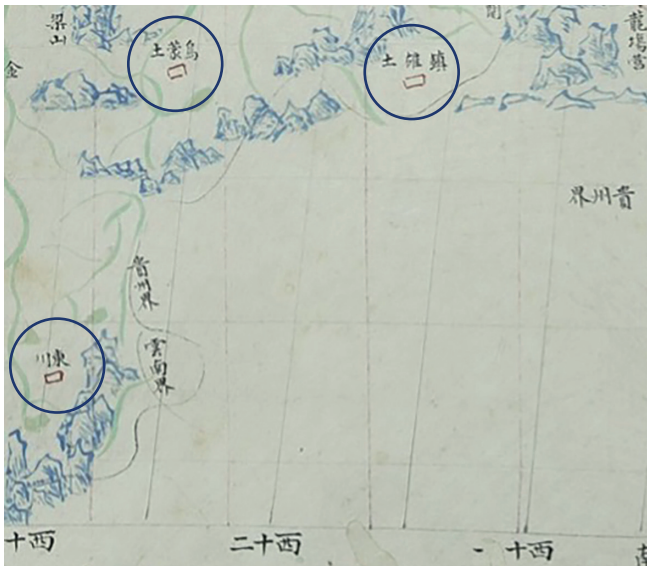


Fig. 11 : Wumeng 烏蒙土, Zhenxiong 鎮雄土 and Dongchuan 東川 on the MARKK maps, all places still located in Sichuan Province.

Fig. 12: Zunyi 遵義, Tongzi 桐梓 and Huairen 懷仁 on the MARKK maps, all places still located in Sichuan Province.

Fig. 13: Wumeng shown as 烏蒙土 on the MARKK map of Sichuan.

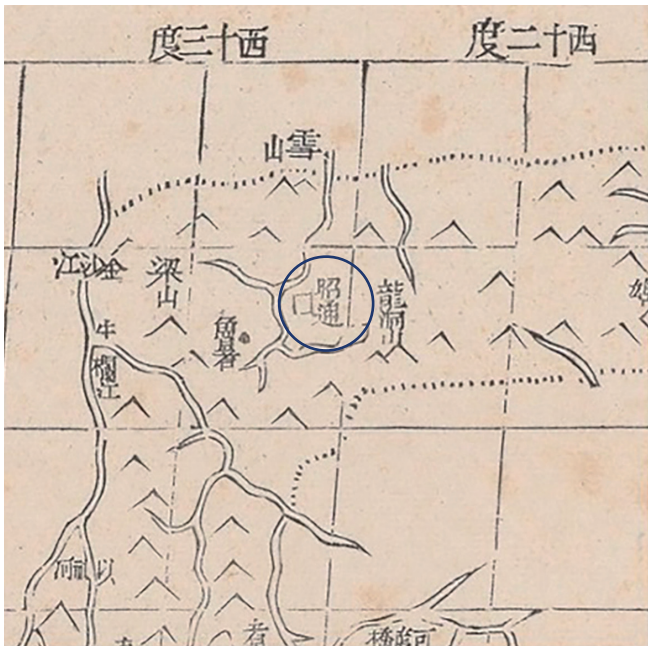


Fig. 14 (right): Wumeng renamed as Zhaotong 昭通 on a map of Yunnan in Zhang Zongjing's atlas (1808).

'Yongzheng atlas' yet, whereas they were implemented in later maps such as the Qianlong atlas (1770)[58] and the atlas entitled *Zhili gesheng yu di quan tu* 直隸各省輿地全圖, made by Zhang Zongjing 張宗京 and published in 1808,[59] which includes the renaming of Wumeng in Zhaotong. The place was not marked as *tu* territory any longer in either case.

One indication that the maps could have been produced before 1723 is the use of specific taboo characters. In China, a naming taboo existed that prevented people from speaking or writing the personal names of dynasty founders and their successors. The most rigorous enforcement of this practice was during the Qing dynasty. As a consequence, the respective characters had to be avoided. There were different ways to avoid a taboo character, such as leaving it blank, leaving out the last stroke of the character or substituting an alternative character, usually a synonym or a character for a word that sounded similar to the one being avoided. The commonest method was to change the character. As time went by, the categories of people whose names were taboo increased and the scope of the imperial name taboo was enlarged by extending it to include names with a similar pronunciation. The name taboo also concerned geographical names including taboo characters.[60] When Emperor Yongzheng 雍正 succeeded the throne in 1722, his given name, Yinzhen 胤禛, was tabooed. Not only the character *zhen* 禛 was tabooed, but other characters with a similar pronunciation were as well, such as 真.[61] Geographical names that included *zhen* 真 were renamed and 真 was replaced by *zheng* 正 (Table 3).

The 'old names' including the *zhen* 真 that was tabooed in 1723 were used for all four place names on the MARKK maps, so it is likely that the maps were made before this date.

Examinations of numerous maps of the respective places that were published after 1723 have shown that the *zhen* 真 was replaced by *zheng* 正 on all those maps.[62] The oldest maps showing the new place names, 正陽县, 正定县, 正寧县 and 正安州, date from 1728 and can be found in the Yongzheng-era atlas printed from woodblocks in 1727/28.[63]

Table 3: Overview of the places including the character *zhen* 真 in the *Tianxia yu scroll*, their new names and dates of replacement.

Old name	New name	Date of name replacement
Zhen'an Subprefecture 真安州 now Guizhou Province	Zheng'an Prefecture 正安州	second year of Yongzheng's reign (1724)
Zhending County 真定县 formerly Zhili Province (now Hebei)	Zhengding Xian 正定县.	first year of Yongzheng's reign (1723)
Zhenyang County 真陽县 now Henan Province	Zhengyang Xian 正陽县	first year of Yongzheng's reign (1723)
Zhenning 真寧县 now Gansu Province	Zhengning Xian 正寧县	before Qianlong's reign (1735)[64]

[58] See <https://qingmaps.org/maps/Qianlong-1770> .

[59] See BNF Gallica <https://gallica.bnf.fr/ark:/12148/btv1b53103898v/f52.item>.

[60] For a brief overview on these name taboos, see Wilkinson 2018, 290–293. A comprehensive study on the topic is in Adamek 2015.

[61] Wang 2009, 397–398.

[62] See Zhang Zongjing 1808, Li Zhaoluo 1832 and Cheng Zuqing 1857, for instance.

[63] See QingMaps <https://qingmaps.org/maps/Yongzheng-1728>. Also see Cams 2017, 197–198.

[64] See Zhou 2013, 116, 244, 385 and 599; Hua, Buell and Unschuld 2017, 376–377; Shi 2005 (*shang*), 544–545; Chen 1958, 81–82.

Fig. 15: Zhen'an Subprefecture 真安州 on the MARKK map.

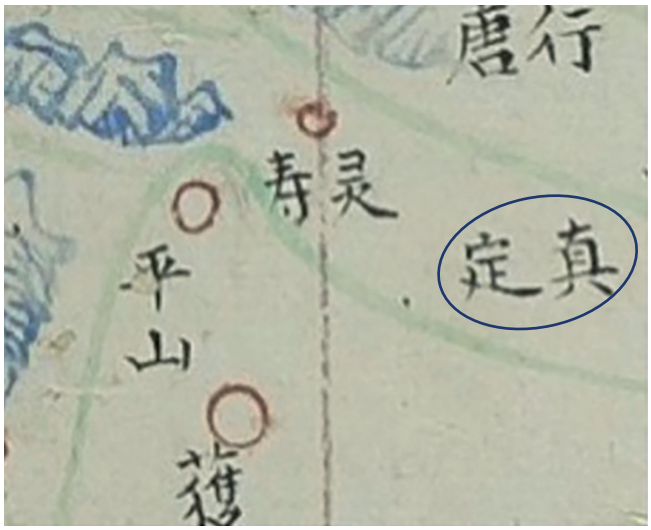


Fig. 16: Zhending County 真定县 on the MARKK map.

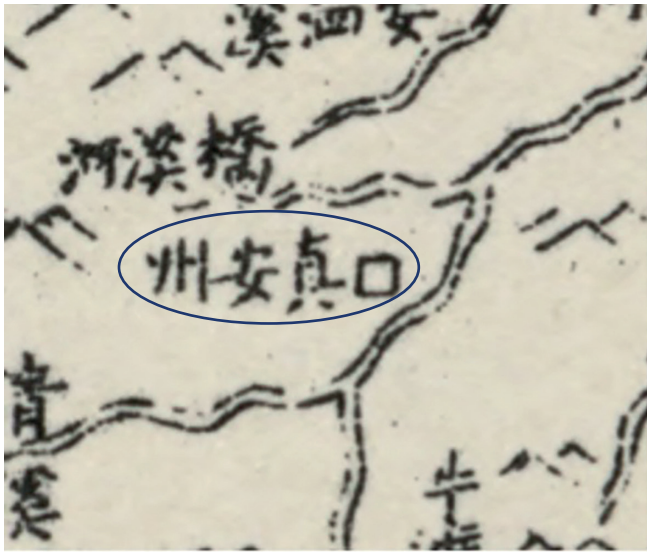


Fig. 17: Zhen'an Subprefecture 真安州 in the 'Kangxi atlas' – still including the *zhen* 真.

Fig. 18: In the 1728 'Yongzheng atlas', Zhen'an was already written with 正.

Although the use of specific taboo characters and the administrative division suggest a date of production before 1723, it cannot be ruled out that the maps were made later. According to the Sinologist Piotr Adamek, who undertook extensive research on the naming taboo in China, the tabooing practice was enforced very strictly during the reigns of Emperor Yongzheng and Emperor Qianlong. The use of taboo characters in the Imperial Workshops was therefore very unlikely during this period, which lasted until the end of the eighteenth century. Since the naming taboo was not as strict in the nineteenth century, the maps may have been made then.[65]

[65] Email correspondence on 5 February 2020; also see Adamek 2015.

4. Concluding discussion

The aim of this paper was to provide an initial description of the MARKK maps and discuss their classification among the 'Qing court atlases' as well as their dating and origin. Currently, the date when the maps were produced is still a matter of discussion; no definitive statement can be made on this issue at the moment. Unfortunately, the scroll's materiality does not give us any hints about its production date – neither an analysis of the colourants has brought this to light nor an examination of the textile materials used for the scroll's production. The wear of the material – such as the faded silk brocade – only suggests that the scroll was used extensively over a long period. Since it probably originated in the Imperial Palace in Beijing and the maps are clearly connected to the 'Qing court atlases',

we can assume that they were also produced in the Imperial Workshops, probably by one of the court artists, who did not usually sign their works – indeed, as Jan Stuart has put it, 'anonymity was a fate that befell many of the court painters working quietly and loyally in the service of the ruler'.[66] We can only speculate about the purpose the maps and scroll served. The maps are closely linked to the ones in the 1717 'Kangxi atlas' and focus on specific key information. The person(s) who produced the scroll must have selected the 25 maps and the information shown on them for a specific reason. We do not know which maps the 'original' version of this set of maps contained and are therefore unable to say if any of the maps were dropped at some point. The maps in the scroll reflect the administrative divisions and terms of the time before 1723 and do not cover the whole Qing Empire. Thus, one might think they would become outdated at some point and no longer be suitable for administrative use.[67] On the other hand, many maps that were copied and reprinted in China were reproduced accurately and hardly altered at all over a considerable period of time. Long after the production of the 'Qing court atlases', numerous maps were made in the 'traditional' Chinese style, namely using the Chinese grid system (or no grid system at all) instead of latitudes and meridians.[68] This is particularly true of manuscript maps that were produced and circulated in China alongside printed maps until the early twentieth century.

Woodblock printing was a difficult and costly undertaking. Pieces of wood intended for block carving were required to be a specific size and quality. Besides the price of the wood itself, various other cost factors had to be calculated as well: cutting, transport, carving, damage, wastage and the storage of the finished products. Printed editions of maps sometimes ended up as or were even specifically produced as sources for hand copies. They were sold to professional copyists, amongst other things.[69] Unfortunately, the scroll's title, *Tianxia yutu* 天下輿圖 ('Maps of [Everything] under the Heaven'), does not hint at its date of production either. The title clearly differs from the official title of the 'Kangxi atlas', *Kangxi huang yu quan lan tu* 康熙皇輿全覽圖 ('Maps for a Complete View of the August Empire of the Kangxi Era'). Did the person(s) who produced the scroll want to distinguish the maps on it from the 'Qing court atlases', and in particular from the 'Kangxi atlas'? Or did they wish to follow the cartographic tradition of the *yu* [*di*] *tu* 輿[地]圖 maps and emphasise the *tianxia* concept? The title chosen only shows that the mapmaker was familiar with the naming concepts for maps of the Chinese Empire. As already indicated above, the MARKK maps could be contemporary with, or perhaps pre-date, the printed 'Kangxi atlas' itself because maps are included in the latter that are missing on the MARKK scroll and certain maps do not contain Chinese grid lines or differ considerably from the maps in the 'Kangxi atlas'. In his comprehensive publication on the history of the 'Kangxi atlas', Walter Fuchs mentioned several manuscript drafts for the later woodblock that was printed and copperplate engraving atlases.[70] Could the MARKK maps possibly be a set of drafts for the 1717 'Kangxi atlas' that were fixed to a scroll later? Unfortunately, the evidence currently available does not permit us to draw any firm conclusions about the date, purpose or use of the scroll and maps. Only further research will tell.

Acknowledgements

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[66] Stuart 2014, 15.

[67] I doubt they were used outside the capital. They were possibly produced for a member of the imperial staff or the imperial family for reference or educational purposes within the Imperial Palace.

[68] See the *Tianxia zong yutu* 天下總輿圖 for example, made *c.* 1890 and showing the administrative system of the Jiaqing period (1801–1820): Library of Congress <http://hdl.loc.gov/loc.gmd/g7821fm.gct00346>.

[69] Ledyard 1994, 318 and 323.

[70] Fuchs 1943, 39.

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Fig. 18: Qing Maps, Manchu Foundation <https://qingmaps.org/maps/Yongzheng-1728> (last accessed on 20 November 2023).

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