Nianhai Shi

A Historical Geography Research of Canals in China

山东人民出版社
国家一级出版社 全国百佳图书出版单位

Springer

A Historical Geography Research of Canals in China

Nianhai Shi

A Historical Geography Research of Canals in China

山东人民出版社
国家一级出版社 全国百佳图书出版单位

Springer

Nianhai Shi
Jinan, China

Translated by Dianying Wang

ISBN 978-981-95-3516-3 ISBN 978-981-95-3517-0 (eBook)
https://doi.org/10.1007/978-981-95-3517-0

Jointly published with Shandong People's Publishing House

Translation from the Chinese language edition: "《中国的运河》" by Nianhai Shi, © Shandong People's Publishing House 2022. Published by Shandong People's Publishing House. All Rights Reserved.

Previously Published by Shandong People's Publishing House

© Shandong People's Publishing House 2025

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.
The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.
The publishers, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publishers nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publishers remain neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd.
The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

If disposing of this product, please recycle the paper.

Preface

This book, *Canals in China*, originated in my early career. Though colleagues in the nascent People's Republic of China suggested a reprint, other commitments prevented me from revising it at the time. However, in recent years, the arguments and information in this text have been referenced within the field, indicating its continued relevance and prompting this revised edition.

As an early work, it required substantial updating. My decades of studying historical geography, which often dealt with canal-related issues, provided a solid foundation for corrections and expansions. Furthermore, the field of canal research has advanced significantly in the intervening years, with new, insightful studies that I've incorporated to address the original work's shortcomings.

Many have asked about my original motivations for writing this book. The origins of this work are closely tied to the relationship between historical geography and diachronic geography.[1] While historical geography has long-standing scholarly roots, it was traditionally known as "diachronic geography," with "historical geography" only gaining widespread recognition in more recent times. However, this shift in terminology reflects more than a simple change of name, instead signifying a fundamental difference in academic approach. Diachronic geography primarily examines the administrative changes of geographical entities. But this raises two critical questions: First, if the focus is mainly on the evolution of administrative structures, how can this approach account for more expansive geographical transformations over historical periods? Second, what is its practical relevance? These questions weighed heavily on my mind during the War of Resistance Against Japan.

When placed under scrutiny, diachronic geography struggles to fully account for many historical changes in geographical phenomena, and cannot adequately explain numerous historical events related to geography. As for practical relevance, while

[1] Translator's Note: The term "diachronic geography" is a translation of the Chinese (沿革地理学), a subfield that has no direct equivalent in the geography discipline within the Anglophone world. The author explains more about their historic relationship in the subsequent sentences. Broadly, diachronic geography focuses on the process through which political and administrative space is transformed over time, such as the gradual evolution of administrative divisions, place names, and trade networks.

not entirely devoid of applications, the usefulness of diachronic geography is rather limited. Since the founding of the People's Republic of China, it has become clear through collective scholarly effort that diachronic geography is merely one component of the broader field of historical geography, dedicated to studying geographical phenomena in historical periods. Geographical landscapes are constantly changing, and these transformations inevitably impact human activity, particularly in production and development. At the same time, human interventions alter and reshape the environment, influencing geographical changes in turn. This process is continuous, reciprocal, and governed by identifiable patterns. The objective of historical geography is to study these transformations, their effects, and the related patterns, so that humanity can better utilize and modify the natural environment. This broader mission cannot be fully achieved within the confines of traditional diachronic geography.

During the War of Resistance Against Japan, these ideas had not yet fully taken shape in my mind and I was only able to explore the following two points:

1. While diachronic geography certainly holds a place within historical geography, research in historical geography should not be confined to this subfield alone. But how could this limitation be overcome? At the time, the discipline's nature and scope had not yet been clearly defined, making it difficult to provide a precise answer. Nevertheless, I had already begun to recognize the importance of studying geographical change and the need to explain the process of this change as well as its causes and consequences. This realization allowed me to move ever-so-slightly beyond the traditional framework of diachronic geography.
2. I gradually came to understand that a discipline like historical geography should not only be broadly useful for society but should also carry more practical applications across multiple fields. If a field of study lacks practical relevance, its long-term survival becomes uncertain. History provides numerous examples of disciplines that have faded into obscurity. While the reasons for their decline vary, failure to remain useful to society is often a significant factor.

With these ideas in mind, I sought to put them into practice. At the time, I was living in Beibei, Chongqing, near Professor Gu Jiegang. I shared my thoughts with him, and he expressed both approval and encouragement. This led me to embark on a study of China's canal systems. The title *China's Canals* was personally suggested by Professor Gu, and he also reviewed the completed manuscript and arranged for its publication. Now, as I revise the book for republication, I deeply regret that he is no longer with us. Remembering the days when I had the privilege of following in his footsteps along the banks of the Jialing River, I cannot help but feel overwhelmed with emotion.

Given my objectives at the time, my research on canals could not be limited to tracing the historical evolution of individual waterways. Nevertheless, my approach remained grounded in historical scholarship. While I attempted to analyze the causes, processes, and effects of change, my focus was predominantly on social and human factors, with less attention given to natural influences. Through subsequent years of fieldwork, I have come to realize the need to address this gap. However, this

would require more than minor revisions. More comprehensive reworking is therefore necessary, and some aspects will need to be more fully explored in future studies.

Although historical geography should serve practical purposes, at the time of my initial research, it was difficult to expect immediate real-world applications from a study of canals. The War of Resistance Against Japan had reached a critical stage, and most of the regions historically capable of canal construction had already fallen into enemy hands. Moreover, given the prevailing social conditions, undertaking canal development was virtually impossible. Any practical application of this research would have to wait until the founding of the People's Republic of China. Indeed, it was only after the establishment of New China that the restoration of old canals and the construction of new ones could become a national priority.

Since then, I have had the opportunity to visit historical canal sites and witness the improvements made to the Grand Canal, which has been a source of great inspiration. I have conducted fieldwork in various locations, tracing the ancient course of the He River in Dingtao District and Juye County in Shandong, examining the site of Fangtou in Qi and Xun Counties in Henan where Cao Cao diverted the Qi River into the Bai Canal, exploring the remains of Han and Tang dynasty transport canals in the Guanzhong Plain, and investigating the relics of Sui and Tang canals in counties across Henan and Anhui. In Luoyang, I studied the impressive scale of the Tang Dynasty's Hanjia Granary, and in Kaifeng, I searched for the remnants of the Bian River bridges depicted in Zhang Zeduan's *Along the River During the Qingming Festival*. Outside Tong County, I examined the confluence of the Tonghui and Lu Rivers. Each site provided a vivid testament to the remarkable achievements of the working people of past generations. I have also traveled extensively around Tai Lake, investigated the historic canal attributed to Wu Zixu in Dongba Town, Gaochun, Jiangsu, and traced the course of the Jiangnan Canal to its intersection with the Qiantang River south of Hangzhou. Following the canals near Jiaxing, I reached Suzhou's Fengmen Gate, where I saw an unimpeded flow of boats, their white sails crowding the horizon. Travelling between the Yangzi and Huai rivers, I observed the newly widened canals south of Gaoyou running up and down the river, jade waters stretched out to the horizon. Endless fleets of wooden ships, towed by steamers, moved in seamless succession, resembling dragons crossing the sea before vanishing into the distance. These experiences have strengthened my conviction that only under socialism can canals truly fulfill their potential, reinforcing my determination to revise this book.

Today, as the entire nation works in unison to revitalize China, remarkable progress is being made in modernization, visible in an endless stream of new achievements. The expansion and development of canal systems are an important part of this progress. Just a few days ago, I learned that the widening and dredging of the Gaoyou-to-Lincheng section of the Grand Canal had been completed. For those of us engaged in canal research, such news is truly exhilarating! If this revised edition of my book

can make even a modest contribution to the country's modernization efforts, it would be a source of great personal fulfillment.

Chinese New Year's Eve, 1985 Nianhai Shi
Jinan, China

Contents

About the Author

Nianhai Shi (1912–2001) was a pioneering founder of modern historical geography in China. He held key academic positions at Shaanxi Normal University, Northwest University, and Lanzhou University, where he served as Vice President and Director of the Institutes of Historical Geography and Tang Dynasty Studies. Shi contributed significantly to the study of China's territorial evolution and canals, co-authoring *A History of the Evolution of China's Territory* with Gu Jiegang. His major works include *China's Canals* and *Outline of Chinese Historical Geography*. He was also President of the Shaanxi Historical Society and the Chinese Society of Ancient Capitals.

List of Figures

Chapter 1
The Utilization of Natural Waterways in Ancient Times

The Advantages of Waterway Transportation

Waterborne transport has long been more economical and less labor-intensive than land transport, a principle that holds as true today as it did in antiquity. Even the simplest watercraft, so long as it can navigate the current, allows for efficient travel along waterways and can reach various destinations along their banks. While land transport is not constrained by the course of rivers and offers greater flexibility in route selection, it also presents significant challenges. Outside of the flat plains, mountainous and hilly terrain poses natural obstacles that hinder movement. Even on level ground, the force required to push or pull a cart carrying a given load is substantially greater than that needed to propel a boat of the same capacity. As a result, wherever both land and water routes were available, people often favored water transport. Even if a water route was more circuitous, it remained the more efficient and practical option.

This fundamental advantage of waterways was well understood in ancient times. Early human activity was closely tied to rivers, and settlements were commonly established along their banks. In contrast, mountainous regions often acted as barriers to expansion. The preference for riverside settlements stemmed from multiple factors: alluvial soils in river valleys were fertile and well-suited for agriculture, rivers provided abundant fish and aquatic resources for early fishing and hunting societies, and, most importantly, waterways facilitated transportation and communication. Archaeological discoveries in China over the past few decades further confirm this pattern. The majority of Neolithic cultural sites have been found near rivers. Notable examples include sites along the Wei River, Luo River, and the lower reaches of the Fen and Su Rivers, all tributaries of the Yellow River. The region east of the present-day Longshan area in Gansu, spanning both banks of the lower Wei River, has long functioned as a vital east–west transportation corridor, a route later followed by the Longhai (Lanzhou-Lianyungang) Railway. East of Xi'an, this corridor runs along the Wei River's south bank, while west of Xi'an, it shifts to the north bank.

© Shandong People's Publishing House 2025

N. Shi, *A Historical Geography Research of Canals in China*,
https://doi.org/10.1007/978-981-95-3517-0_1

Interestingly, the distribution of newly discovered Neolithic cultural sites closely corresponds to this shift in the corridor's alignment along the Wei River.

Transportation in the Three Dynasties

Though scattered across the entire country, known Neolithic sites are notably concentrated in the Yellow River basin—particularly along the middle reaches of the Yellow River. Even during the Xia, Shang, and Zhou dynasties, the range of early Han cultural activity remained largely confined to the Yellow River basin. More precisely, the "Yellow River Basin" here refers to the specific section of the river below the Longmen Gate, as well as the Wei and Ji tributaries, with no connection to the upper reaches of the Yellow River above Longmen. This distinction arose because the lower Yellow River (below Longmen) was navigable by boats, while the upper reaches were not yet utilized for transportation during that era.

The capitals of the Xia, Shang, and Zhou dynasties were frequently relocated. The exact reasons for each relocation varied, ranging from political motives, to economic considerations, or sudden disasters. Without delving into the exact causes, the chosen locations of their capitals alone substantiate the claims made above. The Xia people originally inhabited the Central Plains region. Why did their migrations consistently remain along both banks of the Yellow River? The Shang people, said to have originated in the east, similarly moved within proximity of the Yellow River. According to traditional accounts, Shang relocations were driven by Yellow River flooding. Yet if such disasters compelled the Shang to abandon their homeland, why did they persistently cling to the Yellow River basin rather than seek new territories? The Zhou people unquestionably emerged from the west. Their migratory trajectory further demonstrates the role of waterways in transportation. Initially settling between the Jing and Wei rivers, the Zhou migrated eastward along the Wei River, eventually clashing with and conquering the Shang. Why did they move eastward instead of westward? The reason is straightforward: the navigability of the Jing and Wei rivers increased toward the east. While some historical narratives attribute Zhou migration to pressure from western Rong tribes, this explanation alone is insufficient. Although the Rong harassed the Zhou, their threat was arguably less formidable than that of the Shang. If the Zhou could subdue the Shang, why would they be powerless against the Rong? Clearly, traditional interpretations warrant further scrutiny. Of course, by the late Western Zhou period, as Zhou power waned, they did in fact under Rong domination, but this is a separate matter altogether.

The migration patterns of the Xia, Shang, and Zhou dynasties, along with those of their neighboring tribes (whether hostile or allied) were largely confined to the Yellow River basin. The frequent conflicts and military campaigns that took place among these groups remained limited to this compact region. While more distant states existed as part of distinct regions with distinct transportation systems, interactions with these distant polities were sparse due to geographical barriers that naturally resulted in less frequent exchanges.

Enfeoffed States of the Zhou Dynasty

Among the Three Dynasties, the Zhou's territorial expansion surpassed that of the Xia and Shang. The paths taken by the Zhou expansion also followed the waterways. Originating from the west, where the terrain was higher, the Zhou expanded eastward, southeastward, and northeastward along rivers. Advancing eastward via the Yellow River, they conquered the Shang. After the fall of the Shang, the Zhou promptly established a number of feudal states governed by their own royal clans (a process referred to as "enfeoffment"). At that time, the Yellow River flowed into the Bohai Sea through what is now Hebei Province. Following its course, the Zhou founded the State of Yan. To the east of the Central Plains, the Ji River provided access to the sea, enabling the Zhou to expand eastward along its banks, where the States of Qi, Lu, and several smaller polities were established. Southeastward lay the Ying and Ru rivers, near which the Zhou established prominent states such as Chen, Cai, and Xu.

Luoyi (modern-day Luoyang) served as a convergence point for these three major water systems. The Duke of Zhou's transformation of Luoyi into the eastern capital of the Zhou dynasty was therefore a strategic move. The Han River stretching south became a thoroughfare for the Zhou expansion, leading to the establishment of down-river states further east along the Han. Additionally, in the eastern stretches of the Yellow River, the Fen and Su rivers facilitated Zhou expansion upstream, resulting in the founding of the States of Huo and Jin. Altogether, these waterways formed the transportation network of the era. By controlling this system, the Zhou consolidated their power and maintained stable rule. Later, during the Rebellion of the Three Guards and revolts of the Huaiyi tribes, the Zhou were able to swiftly suppress these uprisings, offering a testament to the strategic advantages afforded by their mastery of waterway logistics.

Utilization of Waterways in the Spring and Autumn Period

Military conflicts among states became increasingly frequent during the Spring and Autumn period, yet the large-scale utilization of waterways remained limited. When the Zhou first enfeoffed states, they were initially concerned that newly-conquered territories in the former Shang territories to the east would be unstable and they therefore established a series of important feudal domains in the Central Plains, all while overlooking the southern state of Chu, then dismissed as "uncivilized barbarians." Unexpectedly, Chu later emerged as a major threat to the Zhou court. Had the Zhou capital not been moved eastward, military campaigns against a strengthened Chu could have nonetheless been launched via the Han River. However, after the relocation, this direct water route to Chu lost its strategic value. The states of Qi and Jin, as hegemons of the Central Plains, championed the slogan "Honor the King and Expel the Barbarians." Beyond confronting northern Rong tribes, their primary

target was Chu. The prolonged rivalry between Chu and the Central Plains states unfolded along a north–south axis, intersecting perpendicular to the predominantly eastward-flowing river systems of the time.

Throughout the Spring and Autumn period, Qi and Jin engaged in numerous battles with Chu for supremacy, all of which were fought with chariots rather than naval forces. In the north, where Qi and Jin alternated as hegemons, smaller states aligned with the dominant power without major issues. Conflicts between Qi and Jin themselves also occurred. Jin, situated to the west, and Qi to the east, were divided by the Yellow River, which flowed diagonally from southwest to northeast. Neither state actively exploited this waterway. In contrast, the state of Qin developed robust waterborne communication with Jin. Jin was based in Jiang (south of modern Yicheng, Shanxi) near the Fen River, and Qin in Yong (south of modern Fengxiang, Shaanxi) close to the Wei River, allowing the two to be linked via each waterway's respective connection to the Yellow River. The historic "Qin-Jin Naval Engagement" of 647 BCE took place along this waterway. Prior to the conflict, Qin transported grain to famine-stricken Jin via the same route, exemplifying this connectivity.[1] However, due to the route's circuitous nature, subsequent military conflicts between Qin and Jin primarily followed the Su River south of the Fen River.[2] Nonetheless, the main military conflicts continued to rely on chariot warfare rather than naval forces.

Despite prolonged conflicts between the northern states of Qi and Jin and southern Chu, the latter never suffered complete defeat. In the late Spring and Autumn period, however, the rise of Wu to Chu's east was accompanied by relentless attacks that exhausted Chu's defenses, culminating in Wu's capture of the Chu capital Ying.[3] Both Chu and Wu, situated in marsh-rich regions along the Yangtze and Huai River basins, demonstrated strategic use of natural waterways. However, the Yangtze's navigational value remained limited, possibly due to the vast and treacherous Jiujiang section. Consequently, military engagements between Chu and Wu primarily followed the Huai River.[4] During this period, chariot warfare dominated

[1] *Zuo commentary*, 13th year of Duke Xi.

[2] *Zuo commentary*, 24th year of Duke Xi: "(The Earl of Qin gave asylum to Chong'er), crossed the Yellow River, besieged Linghu, and took Jiuchu… and entered Quwo." According to Du Yu's commentary: "The Sang Spring is located west of Xie County, Hedong Commandery; southeast of Xie County lies Jiucheng." Linghu is located west of present-day Linyi County. All these places are near the Su River. Therefore, when the Earl of Qin took in Chong'er, he entered through the Su valley. Again, in the 12th year of Duke Wen, "The Earl of Qin attacked Jin and took Jima; the people of Jin resisted." This campaign corresponds to the one mentioned in the 13th year of Duke Cheng, during which Prime Minister Lü severed ties with Qin, stating: "(They) entered our Hequ, attacked our Su, captured our royal officials, and destroyed our horses at Jima; hence the Battle of Hequ." This battle likely also took place near the Su River. The 24th year of Duke Xi corresponds to 636 BCE, and the 12th year of Duke Wen corresponds to 615 BCE.

[3] The event of Wu's invasion of Ying is recorded in *Zuo Commentary (Zuo Zhuan)*, 4th year of Dinggong (506 BCE).

[4] The numerous military campaigns between the states of Wu and Chu are recorded in *Records of the Grand Historian* (*Shiji*), vol. 31, "Hereditary House of Wu Taibo," and vol. 40, "Hereditary House of Chu." The theaters of war between the two states were all situated in the Huai River basin.

as the benchmark of military strength. However, Wu initially lacked chariot expertise. Jin therefore sent instructors to Wu, highlighting their proficiency in waterborne logistics.[5]

The Transportation Network in the *Yu Gong*

By the early Warring States period, all navigable waterways within China had already been extensively utilized. Consequently, efforts were made to link these major waterways together to form a comprehensive transportation network. The scale and structure of this ancient network can still be partially reconstructed today. The extant text of the *Tribute of Yu* (*Yu Gong*), a chapter of the *Book of Documents* (*Shang Shu*), preserves an outline of this system and records various related matters. Although the *Yu Gong* is attributed to the legendary sage-king Yu the Great, it was in fact written by an anonymous scholar in the early Warring States period.[6] The pseudonymous attribution to Yu was a deliberate rhetorical strategy. The Warring States period was a time of intense political fragmentation, with numerous contending states locked in endless warfare, leaving the people in a state of perpetual unrest. The author, yearning for national unification, envisioned the use of the country's extensive water transportation system as a means to unify the realm. He even went so far as to plan a national transportation infrastructure to serve a unified empire. Since such ambitions were impractical under the conditions of his time, he chose to express his aspirations under the name of Yu the Great.

In his vision of a unified China, the country would be divided into nine administrative regions (or "provinces"), with the capital located in the southwestern part of Jizhou, not far from the Yellow River. From this central hub, the tribute from the other eight provinces could be transported via the waterways to the capital. The planned territory of Jizhou roughly corresponds to modern-day Shanxi, Hebei, and parts of Henan. It was a vast region, with the proposed capital situated in its southwestern area. At that time, the Yellow River flowed northeastward from the southwest of Jizhou, skirting its eastern boundary. Thus, the northeastern areas of Jizhou could send tribute down the river to the capital. The envisioned province of Yanzhou was located between the Yellow River and the Ji River, encompassing parts of today's Shandong and Hebei. In addition to bordering both rivers, the region also had the Luo River flowing through its interior. Tribute from Yanzhou could be transported via the Luo and Ji Rivers to the Yellow River and then upstream to the capital.

---

[5] *Zuo commentary*, 7th year of Duke Cheng: "Wuchen requested to serve as envoy to Wu, and the Marquis of Jin granted permission. King Shoumeng of Wu was pleased and thereby established diplomatic relations with Jin. One-third of a military unit was sent to Wu, and a portion was stationed there. They shared archery and chariotry, taught Wu how to use war chariots and how to conduct battle formations and rebellion against Chu." Wu's adoption of chariot warfare likely began from this point. The 7th year of Duke Cheng corresponds to 584 BCE.

[6] Shi Nianhai. *Collected essays on rivers and mountains, volume II: On the date of composition of the Yu Gong.*

The proposed province of Qingzhou lay east of Mount Tai and west of the East China Sea, corresponding to modern Shandong. The Wen River flowed from Qingzhou into the Ji River, making the tribute route: Wen → Ji → Yellow River. The proposed province of Xuzhou extended from the northern slope of Mount Tai to the Huai River in the south and bordered the sea to the east. It included the southern part of today's Shandong and the northern parts of Jiangsu and Anhui. Xuzhou contained the Si River and, to its south, the Huai River. The lower Si River flowed into the Huai, and the Si and Ji Rivers were connected by an artificial canal called the He River. Thus, tribute from Xuzhou could travel through the Huai and Si Rivers into the He, from there into the Ji, and then on to the Yellow River.

South of the Huai River lay the proposed Yangzhou, traversed by the Yangtze River. Tribute from Yangzhou would be shipped along the Yangtze, entering the Huai from the coast, and from there following the tribute route of Xuzhou northward. The modern provinces of Hubei and Hunan formed the region referred to as Jingzhou in the *Yu Gong*. Jingzhou was rich in rivers: the Yangtze, Tuo, Qian, and Han. Tribute from Jingzhou could be transported along these rivers to the borders of Yuzhou, then carried overland to the Luo River in Yuzhou, and subsequently into the Yellow River. Yuzhou, roughly corresponding to the southwestern half of modern Henan, was crisscrossed by the Luo, Yi, Chan, and Jian Rivers. The latter three all converged into the Luo River, which in turn emptied into the Yellow River—making Yuzhou exceptionally well-suited for tribute transport.

At that time, modern Shaanxi and Gansu were known as Yongzhou. The Yellow River flowed directly through this region, along with the Jing and Wei Rivers. Therefore, tribute from Yongzhou could be easily sent downstream to the capital. South of Yongzhou and west of Jingzhou lay the proposed region of Liangzhou, corresponding to present-day Sichuan. The author seemed to have only limited knowledge of Liangzhou's geography. He claimed that the upper reaches of the Han River and Jialing River were connected by a river called the Qian, which allowed tribute from Liangzhou to be transported via the Qian into the Han River, then moved overland to the Wei River, and finally into the Yellow River.

This transportation network may not seem particularly remarkable by today's standards. However, at a time when geographical knowledge was still quite limited, especially given that the realm was fragmented among rival states, conducting a detailed survey would have been extremely difficult. It is truly impressive that the author was able to devise such a comprehensive transportation system under such conditions. As for the proposed tribute route via the Qian River in Liangzhou, which does not correspond to geographical reality, he can hardly be blamed for this inaccuracy. Even in the centuries that followed—spanning two to three millennia up to the Qing dynasty—no definitive resolution to this problem was ever reached. With this in mind, there is no need to be overly critical.

This proposed transportation network demonstrates just how highly people of the time valued waterway transportation. Overland routes could be used on occasion, but they were considered only as a last resort. For example, between the proposed Liangzhou and Yongzhou regions lay the formidable barriers of the Bashan and Qinling mountain ranges. The author of the *Yu Gong*, in a bold flight of imagination,

envisioned a nonexistent "Qianshui" (Hidden River) to overcome this obstacle. In reality, there was no feasible solution between the Han and Wei Rivers, so the only option was overland transport.

Another example is Yangzhou. If one were to travel overland from Yangzhou to Jizhou, the route would need to pass through only one intermediary region: Yuzhou. However, because navigable waterways were available, the tribute route instead took a long, circuitous path: from the Yangtze River to the sea, from the sea into the Huai River, then through the Si River, the He Canal, into the Ji River, and finally into the Yellow River before reaching the capital. This deliberate detour reflects the practical advantages of water transport, which was far more economical and labor-saving than overland alternatives. This transportation network also reveals that people of the time were already making full use of available waterways and were actively working to develop and expand them. There is evidence that conditions were beginning to permit the construction of artificial canals, and the idea of opening new waterways to facilitate transport was already taking root.

Chapter 2
Canal Construction in the Pre-Qin Period and Its Impact

The Emergence of Canals

While water transport was undoubtedly economical and efficient, it also had inherent limitations. Waterways typically follow fixed courses, and whether traveling upstream or downstream, the areas they can reach are ultimately limited. This posed little problem in ancient times when populations were sparse and political entities small. However, as human activity gradually expanded, the constraints of fixed water routes became increasingly inconvenient. At the time, the major rivers within China each formed separate systems. Traveling from one system to another often involved great difficulty—and in some cases was entirely impossible. To overcome this challenge, it became necessary to rely on overland routes to compensate for the gaps in waterway connectivity. Yet land transport was inherently uneconomical, and the repeated loading and unloading of goods only added further complications. As a result, people later sought ways to artificially excavate canals that would link previously unconnected waterways, allowing boats to travel directly between them. The construction of such canals supplemented the deficiencies of natural rivers and represented a significant advancement in transportation.

Sima Qian's *Records of the Grand Historian* offers a foundational overview of early canal construction in China: "At Xingyang, water was drawn from the Yellow River to create the Hong Canal, which flowed southeast to link the states of Song, Zheng, Chen, Cai, Cao, and Wei, joining with the Ji, Ru, Huai, and Si Rivers. In the state of Chu, channels were opened westward to connect with the Han River and the Yunmeng Marshes, and eastward to link the Yangtze and Huai Rivers. In Wu, canals were excavated to connect the Three Rivers and Five Lakes. In Qi, a canal was cut between the Zi and Ji Rivers. In Shu, the governor Li Bing cleaved Mount Lidui to mitigate the flooding of the Mo River, redirecting its waters into two channels that flowed through Chengdu. All of these canals were navigable by boat; surplus water

© Shandong People's Publishing House 2025

N. Shi, *A Historical Geography Research of Canals in China*,
https://doi.org/10.1007/978-981-95-3517-0_2

was used for irrigation, bringing substantial benefit to the people."[1] This detailed and expansive account by Sima Qian provides valuable insight into the systematic development of hydraulic engineering during early Chinese history.

The Earliest Canals

Sima Qian did not specify which canal was the earliest to be excavated. Traditional accounts often credit King Fuchai of Wu, who in 486 BCE—during the ninth year of Duke Ai of Lu—dug the Han Canal (*Hangou*, 邗沟) to connect the Yangtze and Huai Rivers. Yet the earliest canal was neither built by King Fuchai, nor was the Han Canal necessarily Wu's first. In fact, the earliest known canal construction took place in the state of Chu.

During the reign of King Zhuang of Chu (613–591 BCE), the minister Sunshu Ao is said to have diverted the Ju River to form a reservoir near Yunmeng Marsh. The Ju River rises in the southeast of present-day Yuan'an County, Hubei, flows through Dangyang, and enters the Yangtze River. Although this area was still some distance from Ying, Chu's capital (near modern Jiangling County), the river's lower reaches were already close to the Yunmeng Marsh.

The exact means by which Sunshu Ao redirected the Ju River is unclear, but the story appears in the *Imperial Survey* (*Huanglan*),[2] compiled by Miao Xi and others during the Three Kingdoms period. It is uncertain what sources they drew upon, and given the significant historical distance and the legendary quality of the material, some scholars remain skeptical. Nevertheless, Yunmeng was a land of marshes, and efforts to regulate the waterways along its shores for boat travel were entirely plausible. Sunshu Ao, known for his expertise in water management, had also improved the watercourses of Qisi (in present-day northwest Gushi County, Henan).[3] There is no reason to rule out his involvement in regulating the Ju River and creating a reservoir at Yunmeng. Still, the case should not be overstated. To

[1] Book of canals and waterways. In *Records of the grand historian,* vol. 29. *The Book* states: "In the east, canals were opened through the Hong Canal to connect the Yangtze and Huai Rivers." However, the character *Hong* (鸿) appears to be a scribal interpolation. In volume 29 of the *Book of Han* (*Han Shu*), in the *Treatise on Waterways* (*Gouxu Zhi*), this same passage is cited correctly as: "In the east, canals were cut to connect the Yangtze and Huai Rivers," omitting the erroneous character.

[2] Biographies of upright officials: Sunshu Ao, jijie commentary. In *Records of the grand historian,* vol. 119.

[3] *Universal geographic record of the Taiping era,* vol. 129: "The Quebei Reservoir lies 100 paces east of Anfeng County. *Huainanzi* states: 'The Chu Prime Minister constructed the Qisi Weir to irrigate the Yulou plains.' Additionally, Yudi Zhi cites Cui Shi's *Monthly Ordinances* (*Yueling*), attributing the Qisi Weir to Sunshu Ao." Qisi County was located northwest of modern Gushi County, Henan, implying the Qisi Weir was in its vicinity. Anfeng County corresponds to present-day Shouxian County, Anhui. Given the considerable distance between these locations, the Qisi Weir and Quebei Reservoir were distinct hydraulic projects.

exaggerate beyond the limits of the sources is something responsible historians must avoid.

Later, during the reign of King Ling of Chu (540–529 BCE), a canal was reportedly excavated near the capital, Ying, to facilitate grain transport to the newly constructed Zhanghua Terrace.[4] This terrace stood to the southeast of the capital. According to later records, the Yangs River originated northwest of Ying, flowed past the southern outskirts of the city, and continued eastward to join the Mian River (the modern Han River) near present-day Qianjiang in Hubei. On the southern bank of the Yang River was a sizable lake known as Li Lake, connected to the river and located adjacent to the Zhanghua Terrace.[5] Given the natural presence of both river and lake, construction in the area would have been relatively straightforward. The term "canal" as recorded in historical sources may refer to the dredging of existing waterways to improve navigability, or to the cutting of short channels—either between Ying and the Yang Rier, or between Li Lake and the terrace. Since the area already featured rivers and lakes, large-scale canal excavation was likely unnecessary. Compared with Sunshu Ao's project of diverting the Ju River to create a reservoir in the Yunmeng Marshlands, this undertaking may have been far more expansive in scale.

Sunshu Ao's redirection of the Ju River to form the Yunmeng reservoir can likely be identified with what Sima Qian described as the "canal linking the Han River to the Yunmeng marsh" in the *Records of the Grand Historian: Book of Canals and Waterways*. In that passage, Sima Qian writes: "In the state of Chu, channels were opened westward to connect with the Han River and the Yunmeng Marshes, and eastward to link the Yangtze and Huai Rivers through the Hong Canal." This passage was later cited by Ban Gu in the *Gouxu Zhi* in the *Book of Han*, which renders the sentence as: "In the east, canals were cut to connect the Yangtze and Huai Rivers," notably omitting the character "Hong" (鸿). If we use the *Gouxu Zhi* to cross-reference the *Treatise on Canals and Waterways*, it becomes apparent that the "Hong" in "Hong Canal" may be a later scribal interpolation.

The historically known Hong Canal lies between the Ji, Ru, Huai, and Si rivers, and cannot plausibly be relocated to the area between the Yangtze and Huai Rivers. The canal in question should instead refer to the Han Canal (邗沟), excavated by King Fuchai of Wu near Han City (邗城). However, an alternative interpretation has been proposed: that Sima Qian's reference to the Hong Canal between the Yangtze and Huai does not stem from a textual error but instead denotes the Fei River. How, then, could the Fei River be understood as the Hong Canal? The answer lies in its transformation through large-scale hydraulic engineering.

To the west of the Fei River once flowed the Bi River (沘水), now known as the Pi River (淠河). Between these two rivers lay the Qisi Reservoir, also known as the Quebei Pond (芍陂), an expansive man-made reservoir formed by damming the Bishui. The Quebei collected water from the west and discharged it eastward into the Fei River. Originally, the Fei River flowed northward into the Huai River. But with additional water from the Quebei, its volume increased, raising its water level

[4] Commentary on the Mian River. In *Water classic*.

[5] Ibid.

significantly. This elevation was said to have caused it to overflow its headwaters, crossing a local ridge and merging with the Shi River to the south. As a result of this confluence, the Shi River came to be regarded as a continuation of the Fei River. The Shi River itself emptied into Chao Lake, which connects to the Yangtze River, thereby forming a continuous waterway from the Huai to the Yangtze—resembling the configuration described by Sima Qian. Some accounts even attribute this "Hong Canal" to Sunshu Ao himself.

References to Sunshu Ao's hydraulic works first appear in the *Huainanzi*, specifically in the chapter *Renjianxun*, which states: "Sunshu Ao diverted the waters of Qisi to irrigate the Yulou plain." Qisi was located northwest of present-day Gushi County, Henan, while Yulou lay to its southeast—both distant from the Quebei Pond, situated between the Bi and Fei Rivers. The *Book of the Later Han Dynasty: Biography of Wang Jing* notes: "In the territory of Lujiang Commandery, there are rice fields reclaimed near the Quebei Pond by Sunshu Ao, the Chancellor of Chu." Likewise, the *Water Classic: Commentary of the Fei River* records: "The Fei River flows northeast, passing east of Baishao Pavilion, where it forms a lake known as Quebei… a project attributed to Sunshu Ao."

Scholars continue to debate whether the reservoir in Qisi is identical to the Quebei Pond. Focusing strictly on the Quebei, located in a relatively flat plain between the Bishui and Fei Rivers, the claim that it caused the Fei River to reverse course—overflowing its source, crossing elevated terrain, and flowing into the Shi River—is difficult to reconcile with hydrological and topographic evidence. My field investigation at the Fei River's headwaters confirmed that while the surrounding hills are not particularly high, the slopes are relatively steep. Regardless of how much the water level may have risen, it is unlikely that the Fei River could have flowed backward over such terrain. Thus, unless one accepts that Sima Qian's phrase "connecting the Yangtze and Huai Rivers by the Hong Canal" contains a scribal error, it is difficult to support the hypothesis that the so-called "Hong Canal" refers to the Fei River. Such a claim would likely yield conclusions inconsistent with historical and geographical realities.

Canals Attributed to Wu Zixu

The hydraulic interventions led by Sunshu Ao in regulating the Ju River, along with King Ling of Chu's canal construction, were concentrated around the Yunmeng Marsh. Historically, "Yunmeng" referred to the marshlands spanning both sides of the Yangtze, incorporating the Jiang-Han floodplain. This terrain featured intricate waterways and alternating elevations—expanding into contiguous lakes during high water and fragmenting into isolated shallows and mudbanks in droughts. The Chu State had long regarded this region as a vital natural bulwark, particularly given the presence of three strategic mountain passes—Dasui (Great Tunnel), Zhiyuan (Straight Shaft), and Ming'e (Dark Defile), along the eastern flank of the Dabie

Mountains (modern Huangxian, Wusheng, and Pingjing passes straddling the Henan-Hubei border). However, during the reign of King Zhao of Chu (515–489 BCE), Wu Zixu led the armies of Wu in their invasion of Chu, advancing precisely along this strategic route.[6] According to Wu Zixu's initial plan, he likely believed that once his forces breached these strategic passes, the Wu navy could swiftly advance into the Yunmeng Marsh. However, he had not anticipated that the Chu army would collapse so swiftly in this battle.

He arrived at the shores of the Yunmeng Marsh around the eleventh or twelfth month of the ancient lunar calendar, a time when water levels were at their lowest. He could not afford to keep his troops camped by the water's edge, waiting until the following spring floods. Thus, he had no choice but to dig a canal. The excavation advanced from the Han River toward the Yang River, which flowed through the heart of Yunmeng Marsh. Naturally, the canal was dug in the vicinity of the Yang River and its surrounding marshes. With the Wu fleet consisting of numerous ships, a larger canal was necessary to accommodate their passage, making the project extremely labor-intensive. Later, this canal was named after him and became known as the Zixu Ditch.[7]

The source of this waterway is said to have been the Yang River, and its location was likely to the southwest of the Ji'nan City (i.e., the Capital Ying). It flowed southeastward into the Ji'nan City, then exited the city as the Longbei Pond. The canal skirted the southern side of the Capital Ying before turning northeastward and becoming known as the Yang River.[8] This account, however, appears inconsistent with the actual wartime situation. Wu Zixu came from the east of Ying, so why was the canal dug west of the capital? To reach Ying from the Han River's banks required crossing part of Yunmeng Marsh—why wasn't the canal dug within the marsh itself, but rather west of Ying which was already outside the marsh boundaries? These questions still lack a satisfactory explanation.

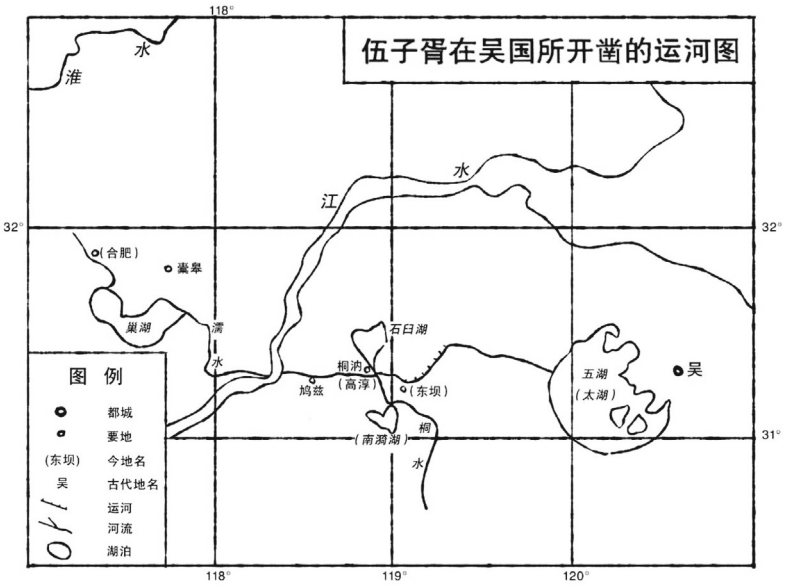
The Canal Network Between the Three Rivers and Five Lakes

Tradition holds that Wu Zixu commissioned a canal within Wu's territory passing near present-day Dongba in Gaochun County, Jiangsu. Known historically as the Xu Stream (胥溪) or Xu River (胥河), its name likely honors its reputed builder. This waterway linked western lakes—Gucheng, Shijiu, and Danyang—with eastern water systems including the Santa Lake, Changdang Lake, Jingxi River, and Zhenze Lake. The critical engineering feat involved breaching a 3–5-*li* elevated terrain at Dongba, enabling Wu's navy to traverse from Tai Lake directly to the Yangtze near

[6] *Zuo commentary*: 4th year of Duke Ding.

[7] Commentary on the Mian River. *In Water Classic*.

[8] Ibid.



图例 Legend
都城 Capital Cities
要地 Strategic Locations
今地名 Present Names
古地名 Historical Names
运河 Canals
河流 Rivers
湖泊 Lakes
江水 Yangtze River

Fig. 2.1 Canals Dug under the supervision of Wu Zixu within the territory of the state of Wu

modern Wuhu, Anhui. Ming scholar Han Bangxian's *Study of the Guangtong Dam*[9] documents this route, though his sources remain unspecified. (See Fig. 2.1).

This waterway did indeed connect several lakes, but due to an elevated terrain segment requiring artificial excavation, it was definitely not a natural channel. During my field investigation at Dongba, I was grateful for local residents' explanations: several years ago, numerous ancient bowls and basins dating back to the pre-Qin period were discovered along the southern section of the waterway. The significant quantity of these artifacts found by the waterside strongly suggests they were left behind during the original canal construction. This evidence substantiates that Zixu's canal-digging during his expedition against Chu is not a unsupported hypothesis.

[9] Cited by Hu Wei in *The detailed commentary on the "Tribute of Yu"*.

Following Wu Zixu's campaign, this waterway continued to serve as a military route in subsequent Wu-Chu conflicts. In the 15th year of Duke Ai of Lu (480 BC), Chu generals Zixi and Ziqiu launched their attack against Wu via this very route. Their forces advanced as far as Tongrui. According to Du Yu's commentary, the Tong River—originating from the Baishi Mountain in the southwest of Guangde County—flowed northwest into the Danyang Lake.[10] The Guangde County of Wei-Jin period corresponds to present-day Guangde County in Anhui Province. Tongrui likely marked the confluence where the Tong River entered Danyang Lake, representing a strategic point along this military corridor. Before Wu Zixu's expedition against Chu, this route had likely never witnessed warfare.[11]

The canal, mentioned in the *Tribute of Yu* in connection with the "Three Rivers" of Yangzhou, was later interpreted by scholars as the central one of these rivers, thereby obscuring its original man-made nature.[12] As previously noted, the *Tribute of Yu* was actually composed during the Warring States period. If the text from that era considered this waterway one of the Three Rivers, it suggests that by then, the canal had already taken on the appearance of a natural watercourse, flowing smoothly without obstruction.

Here, it is worth addressing why the Wu state chose to construct this canal rather than simply using the Yangtze River for military transport. To understand this, we must first examine the strategic dynamics between Wu and Chu. As previously discussed, although the Yangtze River lies between the two states, it provided little advantage for transportation or warfare at the time. Consequently, most conflicts between Wu and Chu took place near the Huai River. Between the Huai and the Yangtze lay Chao Lake, whose waters flowed into the Yangtze via the Ru River. The point where the Ru entered the Yangtze was not far from the canal excavated by Wu Zixu. This meant that Wu's navy, coming from the south, could bypass the Yangtze and sail directly into Chao Lake. Without this canal, Wu's fleet would have had to depart from Gusu (modern-day Suzhou), enter the Yangtze from the south, and then laboriously sail upstream—a journey fraught with the perils of river currents and storms, as well as being considerably longer and more arduous.

---

[10] *Zuo commentary, 15th year of Duke Ai with Du's commentary.*

[11] *Zuo Commentary, 3rd Year of Duke Xiang*: "Chu's Zichong attacked Wu, leading a well-trained army, captured Jiuzi, and reached Hengshan." Du Yu's commentary states: "Jiuzi was a Wu settlement east of Wuhu County in Danyang (present-day Gaoyi). Hengshan was south of Wucheng County in Wuxing." If Du's annotation is accurate, Zichong's eastern campaign must have utilized this route. However, Gu Yanwu and Jiang Yong questioned Du's identification of Hengshan. Gu posited Hengshan should be in modern Danyang County, while Jiang argued for Dangtu County. According to Gu and Jiang's theories, Chu forces could not have used this waterway. From Zichong's attack on Wu to Wu's capture of Ying (506 BCE), over sixty years elapsed. If this waterway existed earlier, why wasn't it utilized in numerous Wu-Chu conflicts during those six decades? Thus, I contend Du Yu likely misidentified the Hengshan mentioned in Zichong's campaign; otherwise, there's no reason such a strategic route would remain unused for sixty years.

[12] *Book of Han, vol. 28: Treatise on Geography* states: "In Wuhu County of Danyang Commandery, the Middle River originates southwest and flows east to Yangxian before entering the sea." Wuhu corresponds to modern Wuhu County, Anhui; Yangxian is present-day Yixing County, Jiangsu. The course of the Middle River aligns precisely with this canal's waterway.

What was the route like from north of Chao Lake to the Huai River? North of Chao Lake lies Hefei. Near Hefei, the Fei River flows north into the Huai River,[13] while the Shi River flows south into Chao Lake. During the summer floods, the Shi River would connect with the Fei River, forming a natural waterway, which is the origin of the name "Hefei" (literally "joined Fei").[14] This implies that outside the summer flood season, the Fei and Shi Rivers remained separate.

This waterway between the Fei and Shi Rivers has been mentioned in numerous historical records, with some even suggesting, as previously noted, that it had been artificially modified to become a canal. I personally visited Hefei to investigate this waterway. With the support of the Anhui Water Resources Bureau and accompanied by two engineers, we conducted a joint survey. We reached the source of the South Fei River (known as the Shi River in the *Water Classic*), where we indeed found remnants of an attempted canal excavation, which was clearly abandoned.

The low-lying hills and scattered sources of the South Fei River result in weak flow in its main channel. Although the elevation is not extreme, the canal was never completed. Without a continuous channel and with insufficient water flow, navigation by boats or rafts would have been impossible. The earlier accounts of the Shi River receiving water from the Fei River, as recorded in historical texts, do not align with the actual conditions. The various claims about the excavation of a canal in this area appear to be based on hearsay and are difficult to substantiate.

As previously referenced, Sima Qian stated: "In Wu, canals were dug to connect the Three Rivers and Five Lakes". Subsequently, many other scholars have proposed various interpretations regarding the Three Rivers and Five Lakes. The term "Three Rivers" first appears in the *Tribute of Yu.* The text states: "When the Three Rivers had been led in, the Zhen Lake was brought to stability." The *Tribute of Yu* provides clear descriptions of the northern and southern rivers of the "Three Rivers," leaving no need for further interpretation. As for the middle river mentioned in the *Tribute of Yu*, it is described as: "Passing through Jiujiang to reach Dongling, then turning northeast to converge at Hui, and finally flowing east as the middle river into the sea." Sima Qian did not elaborate on the middle river, possibly because reliable evidence was already scarce in his time.

However, the *Tribute of Yu* first states "When the Three Rivers had been led in" before mentioning "Zhen Lake was brought to stability", suggesting that the Three Rivers were not downstream of Zhen Lake. Instead, the canals dug by Wu Zixu might correspond to a waterway in the Three Rivers region.

By the Han dynasty, the eastward branch of the Yangtze River diverging from Wuhu was identified as the middle river.[15] Since Wu Zixu's canal was located precisely where this "middle river" supposedly flowed eastward, the canal itself gradually fell into obscurity. Nevertheless, archaeological findings confirm that this canal was neither a natural watercourse nor an ancient channel of the mighty Yangtze River.

---

[13] Commentary on the Fei River. *In Water classic.*

[14] Commentary on the Shi River. *In Water classic.*

[15] Treatise on geography. In *Book of Han*, vol. 28.

The term "Five Lakes" has been subject to varied interpretations. Some scholars attempt to identify five distinct lakes by name, while others argue that the phrase refers collectively to a single body of water—Zhenze Lake, known today as Tai Lake. These differing perspectives reflect a broader lack of consensus. In fact, the Tai Lake basin and its surrounding region form an expansive lake district dotted with numerous interconnected bodies of water. Given this complexity, it is difficult—if not impossible—to trace the precise origins or referents of each historical name with certainty.

Modern researchers have reasonably identified the ancient watercourse of Wu State and the Baichi River, as recorded in *Chorography of the Wu State, A Concise History of the Yue and Wu States*, as canals excavated between the Five Lakes. According to the text, this ancient waterway "exited the Ping Gate northward into the region of Guo, joined the Baichi River, flowed out of Chao Lake, turned north through Li territory, passed Meiting, entered Yang Lake, then exited Yupu before emptying into the Yangtze River, ultimately connecting to Guangling".

Historical evidence suggests that the Ping Gate was the original northern gate of Suzhou, while Chao Lake corresponds to Cao Lake. Meiting was likely located in today's Wuxi, and Yang Lake (杨湖) may refer to Yanghu Lake (阳湖), situated between Changzhou and Wuxi along the Jiangnan Canal. Yupu is identified as Xili Port in Jiangyin, and Guangling was located on the Shugang northwest of Yangzhou. This canal likely originated northwest from Suzhou, traversed Caohu Lake, followed the Taibo River and the Jiangnan Canal, passed through Yanghu Lake into the ancient Furong Lake, and finally entered the Yangtze via Ligang to reach Yangzhou. As for the Baichi River, *A Concise History of the Yue and Wu States* notes its critical role in "connecting to the Yangtze River, enabling Wu State to transport grain."

It is said that the Baichi River was located near Hezhuang Mountain, approximately forty *li* southwest of Yanguan Town in present-day Haining County, Zhejiang.[16] Situated in the southern part of the Wu State, this river served as a vital waterway connecting to the Yue State. Many of the battlefields between Wu and Yue were concentrated in this region, suggesting that the Baichi River played a crucial role in transporting military supplies. The construction of this ancient watercourse in Wu laid the groundwork for King Fuchai of Wu's later excavation of the Han Canal. Without this earlier waterway, Wu's vessels would have faced significant challenges reaching Hanxia, diminishing the strategic importance of the Han Canal. Thus, the records in *A Concise History of the Yue and Wu States* regarding these two canals remain credible. Moreover, the existence of such canals substantiates Sima Qian's assertion that "in Wu, canals were dug to connect the Three Rivers and Five Lakes," was not without historical basis.

[16] Wei Songshan & Wang Wenchu. (1979). Formation and evolution of the Jiangnan canal. *Zhonghua Literature and History Collections,* 2.

King Fuchai's Construction of the Han Canal

The construction of canals by Wu Zixu took place during the reign of King Helü of Wu. Under Helü's rule, Wu achieved dominance by crushing the state of Chu. However, his death from wounds sustained in a campaign against Yue cast a shadow over his legacy. Yet this regret was soon remedied by his son, King Fuchai, who conquered Yue, leaving Wu without rivals in the southeastern region. Filled with ambition, Fuchai believed that Wu's military strength entitled it to become the leader of the states.

However, the powerful states of Qi and Jin in the Central Plains still stood in his way. To claim supremacy, Wu had to confront them. Since Wu's main force was its navy, advancing northward by water posed a logistical challenge. While it was possible to enter the Huai River via the Yangtze by detouring through the sea, even ignoring the dangers of maritime storms, the distance from the Huai to Jin remained vast. Fortunately, Fuchai was a ruler of bold vision, and canal construction had already proven effective for Wu. Without hesitation, in the tenth year of his reign, he began digging a canal directly linking the Yangtze to the Huai—the aforementioned Han Canal, excavated in 486 BCE. This Han Canal diverted water from Guangling (modern-day Yangzhou, Jiangsu) northeastward into Sheyang Lake (located between present-day Xinghua, Jianhu, Yancheng, and Baoying counties in Jiangsu). From there, it connected to Mokou, where it merged with the Huai River.[17]

Its name derived from Han City, built by Fuchai at the canal's inlet. Over time, the canal acquired multiple regional names: Qu River (Qushui),[18] Han River (Hanjiang),[19] Hanmin Canal (Hanminggou), and Zhongdu River (Zhongdushui),[20] each reflecting local linguistic and historical variations.

The Han City is located in present-day Yangzhou, Jiangsu Province. Today, the straight-line distance from Yangzhou to the Yangtze River to the south is approximately thirty *li*. Given that the Han Canal was constructed to connect the Yangtze River and the Huai River, why was the Han City situated thirty *li* away from the riverbank? This discrepancy arises from the shifting course of the Yangtze River over time, and we cannot judge ancient decisions based on the current riverbank configuration. If the Han City was not close to the river, where would the water for the Han Canal have been sourced? According to field investigations, the riverbank at that time roughly followed a line from Xupu in the northwest of modern-day Yizheng County, to Wantou in the northeast of Yangzhou, and then to Yiling in the

[17] The Han Canal excavated by the King of Wu is merely recorded in *The Book of Han*: The 9th Year of Duke Ai as "Wu built the Han city, connecting the Yangtze and Huai." Du Yu's commentary elaborates: "They constructed a city on the Han River and dug a canal northeast to Sheyang Lake, then northwest to MoKou entering the Huai River, establishing a grain transport route. This corresponds to present-day Hanjiang in Guangling." MoKou, located north of modern Huai'an County, Jiangsu, is now called Beishen Weir.

[18] Treatise on geography. In *Book of Han*, vol. 28.

[19] Citing Du Yu's commentary on *Zuo Commentary.*

[20] Commentary on the Huai River. In *Water classic.*

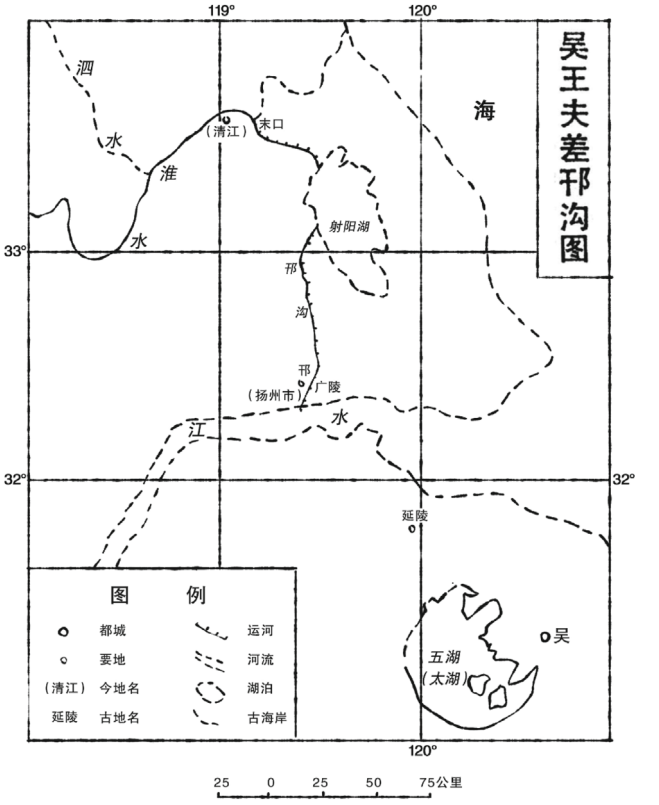


Fig. 2.2 King Fuchai of Wu's Han Canal

northeast of Jiangdu County.[21] The Han City was situated precisely along this line. After the excavation of the Han Canal, the northern confluence where it joined the Huai River underwent multiple changes, while the southern one with the Yangtze River remained relatively stable for a long period (See Fig. 2.2).

There are differing accounts regarding the starting and ending points of the Han Canal. In the Eastern Han dynasty, Ban Gu expressed his viewpoint in *The Book of Han*: "The canal water originates from the Yangtze River, flows north into the

[21] Yangzhou Regional Water Conservancy Bureau. *Yangzhou Water Conservancy.*