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文明的印迹

Chinese Ancient Bridges Ancient Bridges

乔虹◎编著

# 古桥

# Chinese Ancient Bridges

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出品人任耕耘

总策划 任耕耘 蒋一谈

项目总监 马 磊 钟 鸣

责任编辑 程 景

责任印制 戚 帅

图文编辑 任婷婷

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## 前 言 Preface

在中华大地上,随处可见各式各样的古桥。在材质上,有木桥、竹桥、石桥、砖桥、铁桥;在建筑形式上,有梁桥、索桥、拱桥、浮桥等等。这些各种各样的桥梁作为古代工程技术发展的结晶,千百年来不仅沟通着交通要道,维系着经济贸易的命脉,同时也传承着中国深厚的传统文化,反映了古人的建筑技术和审美情趣。这些古桥以或雄伟、或轩朗、或柔美的身姿点缀着锦绣河山。

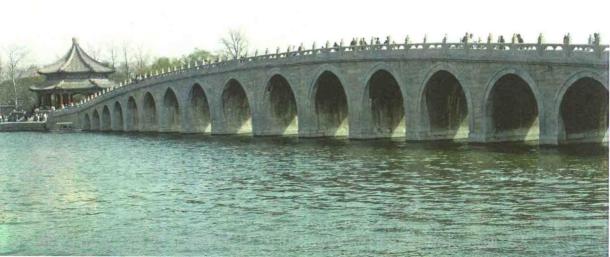
China has a rich variety of ancient bridges everywhere in its vast land. There are bridges built in different materials such as timbers, bamboos, stones, bricks and irons, and in various architectural styles such as beam, suspension, arch and floating bridges. Representing the achievements of the ancient engineering technology, these bridges became transportation arteries, which helped to maintain the economic and trade lifelines in ancient China. They also inherited the profound traditions of Chinese culture and



本书讲述了中国古桥的诞生与发展、桥梁的建筑艺术,并且着重介绍了中国各地留存至今的历史名桥,其中包括这些桥的建造缘起、建筑形式、装饰特点和典故传说。希望读者通过了解中国古桥,对中国传统文化的内涵有进一步的认识。

demonstrated the technical mastery and aesthetic taste of the ancient Chinese. The beautiful landscape of China is dotted with these magnificent, splendid and elegant ancient bridges.

This book provides an account of the birth and development of Chinese ancient bridges and the architectural art of bridge building. Specifically, the book walks through each of the historically well-known bridges in China including the origin of its construction, architectural style, decoration characteristics and related legends. The intention is to help readers learn about ancient bridges in China and gain a deeper understanding of their connotation in the Chinese traditional culture.



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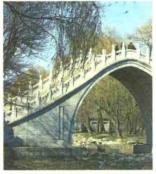
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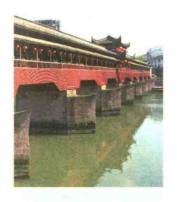






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## 桥的历史 History of Bridges

中国是有着悠久历史和灿烂文化的文明古国,造桥的历史同样相当久远。几千年来,中国人在长河急流之间架起了一座座坚固而美观的桥梁,它们飞跨两岸,使天堑变为通途。

China is a country with a long history and a splendid culture of ancient civilizations. Bridge building in China witnessed an equally long history. Over the past several thousand years, the Chinese constructed enduring and beautiful bridges one after another across long and raging rivers making walkways possible over natural gorges.



## > 原始的桥

自然界由于地壳运动或其他自 然现象的影响,形成了不少天然的 桥梁形式, 比如河边的大树被风吹 倒,恰巧横跨在河上,形成了天然的 "梁桥";两岸之间有藤萝悬跨, 成为天然的"索桥";两山中间的 瀑布被石脊所阻,在流水的长期冲 刷下,石脊的孔隙被磨成圆形,形 成了天然的石拱桥……远古时代的 人们从这些自然界的桥梁中得到启 发, 创造了最早的人造桥梁。

在陕西西安半坡村新石器时代 的氏族聚落遗址(公元前4800-前 4200)中,人们发现在部落周围挖 有宽、深各约5米左右的大围沟。 据专家推测,这是为了防御野兽袭 击和异族侵略, 而氏族成员出入肯 定有桥。不过由于材料和工艺的原

#### > Primitive Bridges

Nature created many bridge-like structures as a result of crustal movements or other natural phenomena. For example, a strong wind blew down a big riverside tree, which happened to fall across the river functioning as a natural beam bridge; vines growing from both sides of a river turned into a natural suspension bridge; a waterfall blocked by a cliff could make a small rock crevice eroded by water gradually into a natural arch across a gully. The ancient Chinese were inspired by these natural bridges and constructed the earliest man-made bridges.

In the Neolithic clan settlement ruins of Banpo Village near Xi'an, Shaanxi Province (4800 B.C.-4200 B.C.) archeologists discovered a moat of 5m in depth and width surrounding the settlement. Expects believed that clan members must have used a bridge to enter or go out of the



#### · 广西乐业布柳河天生桥(图片提供:全景正片)

广西乐业县境内的布柳河上,有一座由三座大山塌陷形成的天然石拱桥。桥拱对称,拱底平滑,当地人称为"仙人桥"。拱孔跨度177.14米,桥宽19.3米,桥身长280米,拱高87米,像一条巨龙横跨在河的两岸,可谓鬼斧神工。

#### Natural Arch on Buliu River, Leye County, Guangxi Province

Spanning the Buliu River in Leye County, Guangxi Province is a meander natural arch bridge cut through limestone karst by the river. The arch is symmetric and has a smooth bottom. The locals call it the Fairy Bridge. The bridge is 19.3m wide and 280m long with a 177.14m span and an 87m high arch. It looks like a gigantic dragon lying across the river as if it was the work of deities.

因,原始桥梁无法在漫长的岁月中 保存下来。

从西周到春秋战国时期,是中国古代桥梁建筑的创始阶段。虽然当时人们已经学会了建造桥梁,但由于种种原因,在一般情况下还达不到遇水架桥的水平,尤其是西周时期,人们遇到较浅的河流,总是涉水而过。先秦时期第一部诗歌总

settlement in order to fight against attacks from other tribes or wild animals. However it was impossible to preserve these original bridges over very long years due to the materials and techniques used to build them.

The beginning stage in the building history of Chinese ancient bridges is between the Western Zhou Dynasty (1046 B.C.-771 B.C.) and the Spring and Autumn Period (770 B.C.-476 B.C.).

集《诗经》中就有很多关于涉水的诗句,比如《郑风·褰裳》中"子惠思我,褰裳涉溱"的意思是:你若思念我,就赶快趟过溱河来找我。而对于较深的河流,人们就借助舟楫或者游泳渡过。在周代鲁国的故都(今山东曲阜)周围,人们发现了用于修建桥梁基台的石料和夯土层。



Although at that time people learned to build bridges, generally they had not reached the level to erect a bridge over water due to various reasons. Especially in the Western Zhou Dynasty people always waded through shallow rivers. The first poetry collection The Book of Songs of the early Oin Dynasty (21st Century B.C.-221 B.C.) has many verses about wading the river such as "if you miss me, wade the Qin River to come and see me". For deeper rivers, people usually crossed them by riding a boat or by swimming. In the capital of the ancient State of Lu (current Qufu City, Shandong Province) in the Zhou Dynasty, stones and rammed earth for building bridge foundations were discovered.

In the Spring and Autumn Period, there were mainly two types of bridges, beam and floating bridges in addition to more primitive single-plank and stone

四川广元古栈道 (图片提供: FOTOE)

栈道桥起源于周代,在战国时期得到了很 大发展。

Guangyuan Ancient Plank Road in Sichuan Province

Plank road bridges started in the Zhou Dynasty and developed quickly during the Warring States Period (475 B.C.-221 B.C.).

春秋时期的桥梁除了原始的独木桥和汀步桥外,主要有梁桥和浮桥两种形式。由于生产力水平落后,多数桥只能建在地势平坦、河身不宽、水流平缓的地段,形制也仅为木梁式的小桥。而在水面较宽、水流较急的河道上,则多采用浮桥。《诗经·大雅·大明》记载,周文王迎亲时,曾在渭河上"造舟为梁",排列船只,跨船铺板,搭成浮桥。

stepping bridges. Due to the backward productivity, most bridges were small timber-beam bridges built on flat areas across relatively narrow rivers with gentle water flow. Floating (pontoon) bridges were most used for wider rivers with more rapid water flow. The Book of Songs records that Duke Wen of Zhou had timber planks laid on top of the boats lined up in a river to make a pontoon bridge to welcome his bride.

#### 多木梁结构的柱桥——栈道

栈道就是一种多木梁结构的柱桥。在无法通行的山崖峭壁上凿出孔,把木桩插进石孔中,固定结实,再在木桩上平铺木板,便成为可以通行的栈道了。有的栈道上层搭顶篷用来遮雨防晒,中层铺板用来行走,下层专做支撑用,使栈道更加坚实。战国时秦惠文王始建陕西褒城褒谷至郿县(今眉县)斜谷的褒斜栈道,长235千米。秦国伐蜀时又修了金牛道,被后世称为"南栈道",长247.5千米。直至今日,在交通闭塞的山区,仍有类似的栈道供人畜通行。

#### Plank Road - The Bridge of Multi-Beam Structure

Plank roads along the cliffs are a type of beam bridges. They are built along steep cliffs by inserting and securing wooden beams into the rocks and then laying planks on top of them. To make it more secured and safe, some plank roads have three levels: the upper level is used as a cover against rain and sunshine; the middle level is the walking path; and the lower level supports the middle lever. During the Warring States Period Duke Huiwen of State Qin built the 235,000m long Baoxie Plank Path in today's Mei County, Shaanxi Province. During the Qin Dynasty another plank road known as "Golden Cattle Path" or "South Plank Path" was built at a total length of 247,500m. Even today, plank roads are used as walking paths by travelers and their livestock in isolated and remote mountain areas.

## > 历代造桥

秦汉时期是中国建筑史上一个 重要的发展阶段, 这一时期不仅出 现了人造的建筑材料——砖,而且 工匠们还创造出了以砖石结构为 主的拱券结构, 为后来拱桥的出 现创造了条件。而战国时期铁器的 出现, 也提高了人们对石料的加工 能力,从而使桥梁在木构梁桥的基 础上,增添了石柱、石梁、石桥面



"驭马过桥"画像石拓片(汉) Stone Rubbings: Riding a Horse Across the Bridge, Han Dynasty (206 B.C. - 220 A.D.)

## > Bridge Building in **Different Dynasties**

The period between the Oin (221 B.C.-206 B.C.) and Han (206 B.C.-220 A.D.) Dynasties is an important stage of development in the Chinese architectural history. Not only bricks appeared in man-made building materials, craftsmen also invented the arch structure in masonry and bricks, which became the foundation for later invention of arch bridges. The appearance of iron tools in the Warring States Period improved people's stone processing capabilities so that new stone components such as stone posts, stone beams and stone bridge decks could be added to timber-beam bridges. As a result stone arch bridges emerged naturally. They are practical, economical and beautiful to look at. They became a landmark in the history of ancient bridge building in China.

等新的构件,石拱桥应运而生。石 拱桥不仅实用、经济,而且形式美 观,它的出现在中国古代建桥史上 具有划时代的意义。

这一时期,在汹涌宽阔的黄河上建起了第一座浮桥——蒲津渡浮桥;在产竹之乡四川又出现了索桥——竹索笮桥。就这样,梁桥、浮桥、索桥和拱桥这四种基本的桥梁形制在中国已全部形成。

During this period the Pujindu Floating Bridge, the first of its kind was built on the turbulent and wide Yellow river and the first suspension bridge the Bamboo Cable Bridge appeared in Sichuan Province, hometown of bamboo production. Thus the four basic bridge structures—beam, floating, suspension and arch—were all established in China.



#### 尾生抱柱

成书于战国时期的道家著作《庄子》中记述了这样一个故事: "尾生与女子期于梁下,女子不来,水至不去,抱梁柱而死。" 说的是一个叫尾生的男子,和心爱的姑娘约定在一座桥下相会。可姑娘迟迟没来赴约,河水却涨上来了。尾生为了信守诺言,不肯离去,最后竟然抱着桥下的梁柱溺水而亡。这个典故在后来的《史记》《汉书》《艺文类聚》等典籍中都有记载。后人遂用"尾生之信""尾生抱柱"等喻指人坚守信约,忠诚不渝。

#### Weisheng Holding on to the Bridge Pier

Zhuang Zi, a Taoist work during the Warring States Period tells a story about a man named Weisheng, who planned a date with his girlfriend under a bridge. But the girl never came. The water started to rise. In order to keep his promise, Weisheng refused to leave and eventually drowned while holding on to the bridge pier. This story was also recorded in several classic historical books including The Historical Records (Shi Ji), The History of Han (Han Shu) and Selections of Historical Writings (Yi Wen Lei Ju). Metaphors such as "Weisheng's Trust" or "Weisheng Holding on to the Bridge Pier" all refer to keeping one's promise and remaining loyal to your friends.

从魏晋开始是古代桥梁发展的 鼎盛时期,尤其是隋唐到两宋时 期,国力的强盛,社会的安定统 一,工商业、运输交通业,以及科 学技术的发达,使中国成为当时世 界上最先进的国家。由于东晋以后 大量贵族官宦南迁,经济中心自黄 河流域移往长江流域,使东南水乡 地区的经济得到大发展。而经济和 技术的大发展,又反过来刺激了桥



上海金泽镇万安桥(图片提供: FOTOE)

万安桥位于金泽镇北,桥长29米,宽2.6米,建于宋代景定年间(1260—1264)。此桥为弧形单孔石拱桥,坡度平缓,跨度大,结构坚固,形式优美,堪称是中国造桥史上的奇迹。

#### Wan'an Bridge in Jinze County, Shanghai

The Wan'an Bridge is 29m long and 2.6m wide, located in the north of Jinze County. It was built between 1260 and 1264 during the Song Dynasty. It is a single semicircular arch stone bridge with a large span and a gentle slope. Considered a wonder in the Chinese bridge building history, the bridge has a very solid structure and an elegant profile.

The beginning of the Wei (220-265) and Jin (265-420) Dynasties witnessed the development of ancient bridge building at its prime time. Especially from the Sui (581-618) and Tang (618-907) Dynasties to the Song Dynasty(960-1279), China became the most advanced country in the world with strong national power, social stability, peaceful unification, and well-developed industry, commerce, transportation, science and technology. After the East Jin Dynasty, many imperial officials and their families started to move south. Consequently the economic center began to switch from around the Yellow River Basin to the Yangtze River Basin enabling rapid economic development in southeast of China, a region of many rivers and waterways. Strong economic growth in turn stimulated the development of bridge building in that area. Many world famous bridges emerged during that time including the Zhaozhou Bridge, the world's oldest open-spandrel stone arch bridge invented by Li Chun, a master stonemason in the Sui Dynasty; Rainbow Bridge (Hong Qiao), a timber arch bridge of the post-and-beam structure invented by bridge builders in the Northern Song Dynasty; and Wan'an Bridge built by