
上海之窗
WINDOW

By Glenn Fieber

EMPEROR OF STONE

Qin and the Terra Cotta Armies

China Intercontinental Press

Dedication

This book is dedicated to the memory of a giant. Qin Shi Huang was far from perfect, but his vision was so grand that over two thousand years ago it made the earth tremble. And today China still resonates from his touch.

Writing the book has been a journey in both time and understanding. I have enjoyed the process of reconciling and uniting thousands of facts and dates from a multitude of sources – "facts" often in conflict. As well, it has been a delight to wrestle with the many legends and speculations that invariably attend one who has left such an imprint on history. It may be that I now know Qin better, but less well.

I am deeply grateful to my wife, Daryl, for both her support and her suggestions for revisions. Her eyes always seem to see much better than mine. And to Lisa Coleby (Qiao Jun), whose translations opened the doors to valuable resources. And to Professor Yang Ming from Fudan University, whose ancient copy of Sima Qian's *Shi Ji* looked as if it could have been a Han dynasty original.

Glenn Fieber
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Older Than Time

On October 12, 2003, a Long March 2F rocket carried China's first astronaut, Yang Liwei, into the history books. The name Long March connects the launch with Mao's historic odyssey and the founding of the People's Republic of China. But Shenzhou V has even deeper roots. Instead of blasting off from the Gobi Desert, perhaps the launch pad should have been at Xi'an, China's first capital, where 2200 years ago Qin Shi Huang ignited the spark of modern China, one that lit the fuse of the Shenzhou spacecraft.

Qin was hard; but his ruthlessness had purpose: to realize his dreams; and in making his visions into reality, he founded a nation that has recently put a man in space, plans on building a space station, and has the world's most vigorous economy. It is fitting that from Shenzhou V, Yang Liwei could have, with the aid of a simple pair of binoculars, looked down on another of Qin's legacies, the Great Wall. Without Qin's vision, China might have remained like Europe, a collection of warring states, with separate languages, different standards of weights and measures, different currencies, and no collective focus. With a divided and separate collection of smaller states, there would have been no Great Wall and there would be no Shenzhou V today. It is, I think, simplistic to dismiss Qin as an eccentric who thought he could live forever by building some statues and burying them like a dog does bones. History records that the Qin Dynasty lasted from 221 to 206 BC. Yet one of the shortest dynasties in China's history has ultimately endured the longest.

Probably Qin's most enduring achievement, therefore, was the welding of China into one country according to the mandate Tian Xia ("all under heaven"). For most people, however, he will be remembered for the Great Wall and especially the Terra Cotta Warriors.

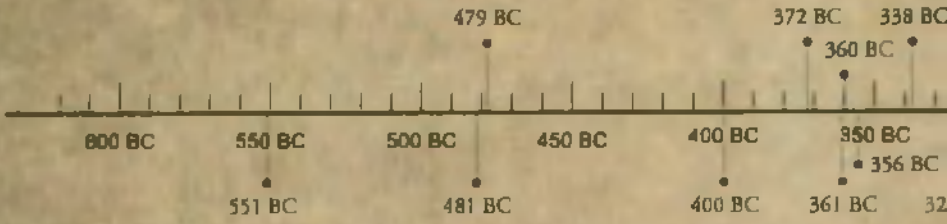
Fate sometimes has an ironic sense of humor. Qin wanted immortality and hoped to achieve it through the warriors he thought he could command in the afterlife. Those first pottery figures were short-lived, reduced to pieces by invading Han armies; but 2200 years after his death, a steady stream of buses carries nearly two million curious visitors to the museum each year, where they speak in hushed tones and stare in wonder at the legacy of the man who produced them.

Qin has left his mark on China. As well, he has left us with many questions. By far the most interesting one, the one you hear on every pair of lips at the museum in Xi'an, is this: Why? Why?

Qin Shi Huang is more alive today than ever before. He is the subject of a flood of recent films: the 1995 controversial Canadian production "The First Emperor of China" (directed by Tony Ianzela and Liu Haoxue); Chen Kaige's "The Emperor and the Assassin"; Zhang Yimou's Oscar-nominated "Hero" and his opera featuring Placido Domingo as the First Emperor, scheduled for the New York Met in 2007; Jackie Chan's very popular 2005 time travel film "Myth"; as well a recent National Geographic special "Qin: Emperor of Eternity".

Furthermore, attendance at the museum continues to increase. Qin, if he could see all the recognition he is now receiving, would be... pleased. After all these years, people still scrambling – or, in the case of the museum workers putting puzzle pieces together, descrambling – to do his bidding.

TIMELINES RELATING TO QIN SHI HUANG



551 BC birth of Confucius

481 BC beginning of the Warring States Period

479 BC death of Confucius

400 BC birth of Sun Zi

372 BC birth of Mencius

361 BC Shang Yang to the state of Qin as advisor to Ying Quliang (Qin Xiao Gong)

360 BC death of Sun Zi

356 BC birth of Alexander the Great

338 BC deaths of Ying Quliang and Shang Yang

323 BC death of Alexander the Great

306 BC young Ying Ji (Qin Zhao Xiang Wang), King of Qin with mother as Regent.

289 BC death of Mencius

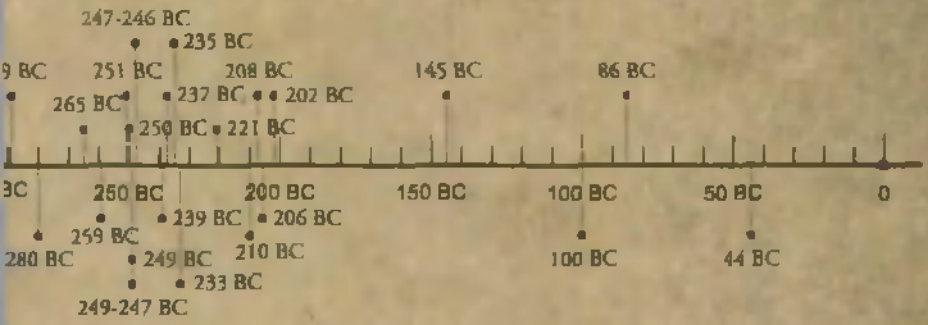
280 BC birth of Han Fei

265 BC death of Empress Dowager Xuan

259 BC birth of Qin Shi Huang

251 BC death of Ying Ji

250 BC Ying Zhu (Qin Xiao Wen Wang), King of Qin



249-247 BC	Ying Chu (Zhuang Xiangwang), King of Qin
249 BC	Lv Buwei is Prime Minister of Qin
247-246 BC	Prince Ying Zheng is made Emperor at age 13. Li Si comes to Qin
239 BC	Lv Buwei's encyclopedia is completed
237 BC	Lv Buwei removed as Prime Minister
235 BC	suicide of Lv Buwei
233 BC	death of Han Fei
221 BC	Ying Zheng becomes Emperor Qin Shi Huang
210 BC	death of Qin Shi Huang. Hu Hai becomes Qin Er Shi
208 BC	death of Li Si
206 BC	deaths of Hu Hai and Zi Ying, overthrow of Qin dynasty
202 BC	start of Han dynasty
145 BC	birth of Sima Qian
100 BC	birth of Julius Caesar
86 BC	death of Sima Qian
44 BC	death of Julius Caesar

CHAPTER 1

Strange Bedfellows

Qin Shi Huang

Historical Perspectives

How did one of China's most powerful and enduring names, Qin Shi Huang, become the ruler of the state of Qin? It is itself an interesting story – even more interesting because he was born elsewhere, while his father was a hostage in Zhao. But before we get to those events, it is important to have some understanding of the conditions in China in the years preceding the Qin Dynasty. By 481 BC the power and influence of the Zhou (not to be confused with Zhao) dynasty had begun to weaken; as a result, the leader of each of the seven states was declaring himself a king in his own land. With weakened central control, each state became more concerned about its own survival and the security of its relationships with the others. Allegiances were formed and broken in a dynamic of intrigues. Thus began what has been called the Warring States Period (481-221 BC).

There is no shortage of examples of the tenuous nature of the relationships between states. Towards the end of the Warring States Period, when the powerful Qin kingdom attacked Zhao, Zhao asked Wei for help, but King Anshi of Wei had been warned by the very powerful Qin not to interfere, and fearing future reprisals, he refused to lend a hand. However, his step brother Xin Lingjun in defiance of the Qin order, led a Wei army to rescue Zhao, forcing the Qin army to retreat. Prior to the arrival on the scene of Qin Shi Huang, Xin Lingjun would defeat the Qin forces again as the histories of Qin and Zhao remained intertwined and interconnected throughout that period.

Confucius

With the decline of the Zhou dynasty, the country lacked a strong central government, so that relationships with the other states were unstable. But it had been that way even before the Warring States Period. During the time of Confucius (551-479 BC) in fact, which – if you believe the titles "Spring and Autumn Period" and "Age of Chivalry" – should have been a more congenial period, intrigue still lingered in the air like dust from battle. Confucius, a resident of Lu, had been appointed by the government as the Minister of Agriculture. At the time, farmers were unhappy and grain production was low. Grain merchants were using over-sized measures to tally the farmers' crops but crediting the farmers with only a standard one. In this way, the farmers were paid for much less than their actual production. Confucius executed the corrupt officials, and when he had finished his reforms, agricultural production was up and farmers were, for the first time in a long time, happy because they were no longer being cheated. He also strengthened the army to make Lu less vulnerable to attack.

What was his reward? The neighboring states began to fear this new rising star of Lu, and debated what they might do to rein in such

Confucius

a potential threat. A clever minister in Qi, which bordered Lu on the north, proposed this solution: present the king and the administration of Lu with certain gifts of 120 fine horses, dancers, and eighty of the most alluring concubines specially trained in song, dance, and the art of pleasing men. The gift was intended to be a Trojan Horse which would re-direct the attention of the leaders to the sheer delights that are contained in idleness. It worked. And it was a ruse that continues to be felt over the distances of history even today. Confucius had been hoping to be made Chancellor (Prime Minister) of Lu in order to apply his theories of social order at a higher level than just the administration of grains. Consequently, when he saw this gift from Qi, he was outraged. He was fully aware of what a sweet trap Qi was offering his Duke, so he protested to the administration, warning that if these gifts were accepted, the fortunes of Lu would decline. He had immediately beheaded the

leader of the concubines to show his displeasure; he went further and delivered an ultimatum to the Duke: "if the concubines remain, I will leave."

He was overruled however by the Duke's close advisors, officials who were so short-sighted that they preferred days spent in idleness with exquisite beauties to the rigors of Confucian idealism; so, disillusioned and embittered, Confucius left Lu. And, while he was an excellent administrator, he failed to find a home where he could apply his theories of government in any of the other kingdoms because everywhere the power interests feared his integrity, his incorruptibility. Perhaps it was a fortunate result that the concubines proved more attractive than Confucius to the Duke of Lu, for as a result, history was the real victor. Confucius eventually became resolved to devoting his life to teaching and writing, and as a teacher he left posterity with his timeless wisdom. The concubines and their ephemeral pleasures have disappeared, however, covered by the dust of time. In any case, the terms "Spring and Autumn Period" and "Age of Chivalry" are somewhat misleading: it was a time when alliances were formed only to be broken as each of the states jockeyed for power in order to survive.

If Confucius was not chosen to administer the affairs of any of the states, he did influence the thinking of legislators down through the ages – even to present times. Confucius had been born poor and raised in poverty. As a result, he never lost sight of his humble beginnings. His life's work reveals his close connection with the common people through his belief that education could elevate everyone to become a gentleman.

Women, in his view, were of little consequence; it was indeed a man's world. Women were neither educated nor allowed direct contact with society; they remained virtual prisoners behind the walls of their masters' houses.

A gentleman, on the other hand, was circumspect in his behavior: he always used words carefully, and the right words must always

accompany the right conduct. Confucius taught that the present should be built upon the solid foundation of the past; that people should both "cherish old knowledge and seek the new." He advocated the study of arts and literature as these refined the soul. Persons who were educated would have a quality he described as "Li"; their behavior and conduct would always be appropriate because, steeped in tradition, they would intuitively understand right conduct; there would be no need for outbursts of passion: he opposed violence – though in practice perhaps his deeds did not always match his words. (He beheaded those merchants who cheated the farmers of their grain, and the concubines, after all.) In matters of government, furthermore, he thought that people should know their place. Butchers should cut meat, carpenters should make furniture, and rulers should rule.

When Confucius died, his philosophy did not die with him. It was, however, dramatically changed by the people who followed him. His most famous disciple Men Zi, or as he is known to English history, Mencius (372-289 BC), arrived on the scene some 200 years later and was instructed in the philosophy of Confucius by the master's grandson. Like his mentor, he too was a true champion of the people. To hold people's hearts, he argued, you must give them what they like. He too believed that people were born with the potential to be good, and that if they became evil, it was the fault of society. Like Confucius, he thought that the Emperor had the authority of heaven to rule. But unlike Confucius, Mencius expanded on his master's ideas with an idea of his own, one that would prove to be unpopular with later rulers: the emperor rules with the "Mandate of Heaven". As such, he commands obedience and respect. If he proves, however, to be a false or unworthy ruler, then it is the responsibility of better leaders to replace him. In other words, he was advocating revolution in the face of tyranny. Commenting on the assassination of the last king of the Shang dynasty, Mencius said, "I

have heard that a *fellow* named Zhou was put to death, but not that a sovereign was killed."

By the time the ideas of Confucius had traveled through Mencius to Han Fei (280-233 BC), views had changed dramatically. Han Fei was a legalist; that is, he believed in a society run by laws which clearly defined acceptable behaviors. Unlike Confucius and Mencius who believed that people properly instructed in correct conduct would behave appropriately, Han Fei believed that people did not act out of nobility, but rather out of fear and greed. Only if right conduct was rewarded and lawlessness was swiftly punished would society be stable and strong.

Shang Yang

For nearly a hundred years, the state of Qin had been toying with this philosophy of legalism. Around the middle of the 4th century BC, Qin was more of a buffer between the other six states, and the barbarians to the west. But when Shang Yang came to Qin from the state of Wei in 361 BC to become an advisor for Qin Xiao Gong, everything changed. (As legend has it, Qin Xiao Gong had been cautioned to be wary of Shang Yang, who lacked any moral scruples – advice that Wei itself should have heeded. Later, in 340 BC, when the states of Qin and Wei were at war, Shang Yang, under the pretext of signing a peace treaty with Wei, invited a meeting with the commander of the Wei armies. It was a ruse: the commander was captured and held, and the Qin armies went on to defeat Wei.)

Shang Yang was not just a legalist, but a ruthless one. He introduced harsh laws, and arranged for their enforcement by turning everyone into policemen. Persons committing crimes were punished; those failing to inform on a criminal received the same punishment meted out to the criminal. Then on top of that, he created a network of secret police – which ironically led to his own ruin. The purpose of the law, he said, was

to provide order and stability for the state, not to protect the rights of the people. The good of the state was more important than the rights of any one individual. Shang Yang even burnt Confucian books in an effort to curb the philosopher's influence. Arts and literature were banned, and at any reference to the "Mandate of Heaven", Shang Yang's eyes would roll, and so would your head.

He stripped the nobility of their land rights and assigned land to soldiers based upon their military success: soldiers were rewarded for the number of heads taken in battle – a practice that would be continued under Qin Shi Huang. He restricted the occupations of the people. As well as being soldiers, people could work only in farming or weaving. Shang Yang privatized land, rewarding farmers who exceeded their harvest quotas and enslaving farmers who failed to meet their quotas; furthermore, enslaved citizens became the reward given to those who met government policies. He even split up families so that no one group could become dangerously powerful. People lived in terror under his heavy hand, and Shang Yang was silently hated. But in a few short years he had transformed the state of Qin into an economic and military power. When the Duke, his protector, died, however, Shang Yang was captured. His own laws and the secret police he had created had made it ironically impossible for him to hide: he was arrested because he could not stay in a hotel without presenting his identification. Although the date of his birth to a noble family is unknown, his death is remembered. In the end, the man who had stretched the people of Qin beyond their limits of endurance was himself stretched to death, torn apart by wild horses – to the delight of the masses.

Sun Zi

Little is known of Sun Zi (400-360 BC, though dates are uncertain), but his classic book of military strategy, *The Art of War*, continues to be

Sun Zi

read today. In recent years it has even been promoted in business schools in Japan and the United States as a formidable weapon for the battlefield of the marketplace. *The Art of War* is a book that advises ruthless strategy on the part of military leaders. The book broke from the fatalistic notions that victory in a war hinged on gods or ghosts. Instead, the party in the war who knew one's own situation and that of the enemy would never lose. The book also pointed out that the factors that decide a war include politics, economy, good timing, geographical convenience, and harmony in matters of human relations.

Sun Zi, according to one legend, served the kingdom of Wu. To test his mettle, the king first challenged him to put his famous theories of leadership to the test by making an effectively disciplined army out of his numerous concubines. Sun Zi divided the concubines into two groups then assigned responsibilities to the king's two favorite concubines, placing one at the head of each group. He explained to the assembled formations that he wanted the ladies to obey his marching orders. "If I say 'Turn right' then you turn right." But the ladies, who were used to lives of leisure, lives that offered them little in the way of pressure or control, responded to his commands with mere giggles. At first Sun Zi was patient, but eventually, when there was no improvement, he decided that a dramatic statement was called for. He would behead the leader of each group, and although the king tried to intercede on their behalf, Sun Zi was adamant: the two lead concubines' loss of face was followed promptly by the loss of their pretty heads. The king was despondent, of course. But after that hard lesson, the remaining concubines drilled

effectively. In the end, Sun Zi became known as Sun the Warrior and is reputed to have never lost a battle.

Lv Buwei and Qin Shi Huang

With the decline of the Zhou empire, China had become a collection of individual warring feudal states. Power changed hands frequently so that a state could never be sure who its friends were. By 260 BC only seven major independent states remained.

Qin (in present day Shaanxi)

Yan (in present day northern Hebei)

Zhao (in present day southern Hebei near Shanxi with some parts in Henan)

Han (in present day Hebei, Henan, and Shanxi)

Wei (in present day Henan, with its capital at Kaifeng)

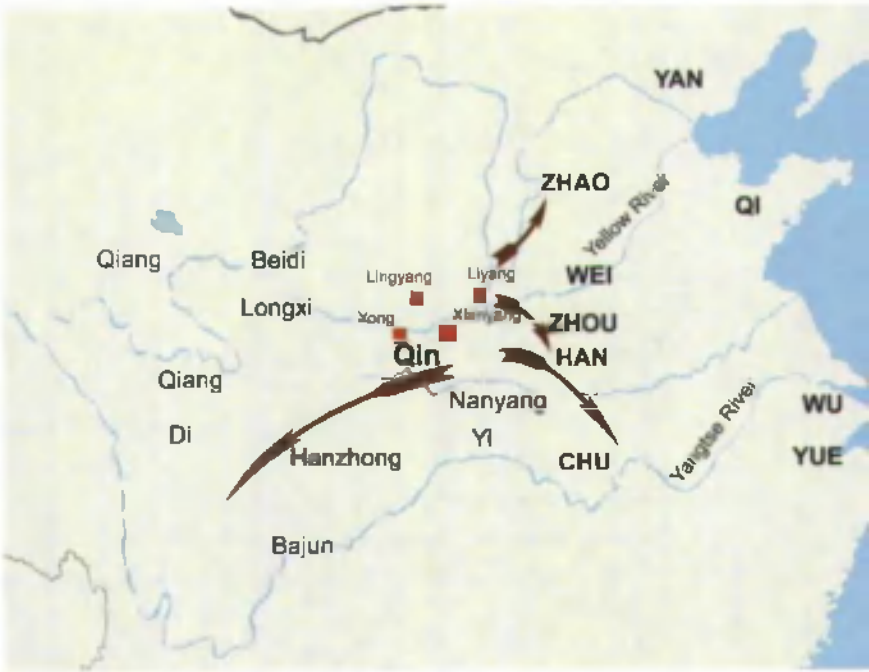
Qi (in present day Shandong, including Lu, the birthplace of Confucius)

Chu (in present day Hubei, Henan, including the land along the Yangtse, Nanjing and Shanghai. It was the largest of the states.)

As well there were a few smaller states like Zhou (which had become divided by the end of the Zhou dynasty) and Lu, the birthplace of Confucius.

Qin, governed by legalist philosophy and focused earnestly on military matters, was among the most powerful of the seven states. At one point, Qin sent 30,000 troops to invade Zhao. The troops of Zhao routed Qin's army, however, and in the course of

Lv Buwei



The feudal state of Qin

the battle, Prince Ying Yiren, the grandson of Qin Zhao Xiang Wang, was captured and taken as a prisoner, back to Zhao where he was nearly executed. In fact, if Lin Xiangru had not recognized the value of Prince Ying as a hostage, the course of history would have been very different. The state of Qin, on learning of the plight of the young Prince, sent a messenger to Zhao agreeing to peace as long as Prince Ying remained a hostage in Zhao but was unharmed.

Lv Buwei, a merchant visiting Handan on business, noticed the prisoner in the company of General Zhao, and, sensing some quality in the young Prince, was drawn to him. Lv is said to have discussed the

potential of such an investment with his own father, who advised him: "Investment in land and jewelry will provide limited returns, but the investment in a future head of state will have unlimited potential."

Lv first ingratiated himself to the General, then through him to Prince Ying. Lv Buwei's first move was to make the Prince aware of precisely how difficult his situation was: because the King of Qin had a multitude of sons who were all qualified heirs to the throne, it was likely that the Prince would languish in Zhao forever. Lv's plan was, like so many of his schemes, profoundly shrewd: he visited Madam Hua Yang, who was the favorite of the King of Qin, but who was childless. Lv praised the virtues of the young Prince to her, and at the same time he advised Madam Hua to adopt him, arguing "you are without a child, and if you have no heir you have no future."

Meanwhile, under Lv Buwei's patronage, Prince Ying had begun to enjoy life in Zhao, and had also become fond of one of Lv's concubines, Zhao Ji, whom he had seen dancing. She happened, it is said, to be Lv's favorite as well, but he saw her as an opportunity to strengthen his hold on the Prince. Prince Ying embraced this Zhao Ji, and while still in Handan, the capital of Zhao, in 259 BC, they had a child. At first, because he had been born in Zhao, they named the young prince Zhao Zheng, but according to historian Sima Qian, Ying Yiren later changed his son's name to Ying Zheng.

Lv Buwei had persuaded Madam Hua to allow Ying Yiren to return from Zhao to Qin, to be adopted as her stepson. (Madam Hua Yang was originally from Chu, and at Lv Buwei's suggestion, Ying Yiren dressed in the clothing of Chu. Hua Yang was so pleased that she changed Ying Yiren's name to Ying Zichu.)

Ying Zichu returned to Qin with his new son and his new concubine, who would later become his formal wife. There is a persistent legend that when Lv Buwei introduced his concubine to Ying Yiren,

she was already pregnant with Lv's child. The records of Sima Qian also refer to such a legend, but the truth is obscured by the fact that Ying Zichu's wife was said to have carried her child for an exceptionally long period of time, so the father could have been Ying Zichu or Lv Buwei: it is impossible to say for sure who the real father was. If it was indeed Lv Buwei's child she had carried, it would mean that China's first emperor was not the son of a king, but the bastard son of a Zhao merchant. This is the view expressed in Chen Kaige's "The Emperor and the Assassin", and it is found in many other references as well. In the 1995 film "The First Emperor of China", Qin publicly acknowledges that Lv is his father – it is the reason Qin does not execute the discredited Lv. Others argue, however, that this rumor was fabricated during the Han dynasty. Qin Shi Huang was so despised by the Hans, they suggest, that this story was simply a means of further discrediting him. Besides, some argue, the Confucian scholars would have rejected an emperor who was both a bastard and a foreigner.

Whether or not Lv had was the father of the young Qin, his long term cultivation of Ying Zichu had borne good fruit: when Ying Zichu later became the King of Qin, he appointed Lv Buwei as Chancellor or Prime Minister as a reward for his earlier support.

And whether he was Ying Zichu's son or the son of Lv Buwei, the fact remains that Ying Zheng permanently re-shaped China.

Although Ying Zheng would not adopt the title Qin Shi Huang until after he had subjugated all six of the neighboring states, it is easier to refer to him simply as Qin except in those cases where it is necessary to distinguish between the man and the kingdom.

Qin Takes the Reins of Power

Qin was a man of immeasurable will. He seems to have been driven both by a desire for control and by dreams that few others could comprehend. To understand Qin's craving for control, it is important to remember the conditions under which he was raised. The young prince had grown up in an environment of profound uncertainty as the seven states of what would later become China either sought alliances to ensure their own survival, or flexed their muscles to make themselves stronger. It was impossible to know whom to trust.

When his father died in 247 BC, Qin was just 13. Since Qin was too young to govern, Lv Buwei, working with his own former concubine, the Queen Mother, ran the affairs of state. Chinese history has not been kind to Lv Buwei. It is true that he was a shrewd strategist, having engineered events so that Prince Ying Zichu would become King of Qin. What this means, however, is that Lv Buwei is directly responsible for Qin Shi Huang's rise to power. Had he not been visiting Zhao at that opportune time, Prince Ying might have ended his days in captivity, and the Middle Kingdom might have remained a patchwork of Warring States right to the present day. However, Lv Buwei is mostly remembered as the expert in guile and deceit who conspired to put his own son onto the throne of Qin.

Little credit is given to him for his intellect, yet he was apparently an intellectual with refined tastes. At the time it had become fashionable for many of the states to host scholars and promote the arts and the discussion of philosophies. It was said that the tongue of a gifted scholar was "mightier than an army of a million men." The state of Qin, however, had no such tradition, so Lv Buwei moved to correct that deficiency by inviting scholars to assemble there, perhaps some who were under his patronage while he was in Handan in the state of Zhao. It is possible

that Li Si, the man who eventually would replace Lv as Chancellor, was invited by Lv to Qin.

To place the state of Qin, and himself, firmly in the intellectual center of China, Lv Buwei therefore set out to create a compendium of knowledge that was to "encompass the totality of affairs of Heaven and Earth, of the myriad things, and of the past and present." When completed in 239 BC, it was displayed at the market gate of the Qin capital Xianyang with a thousand measures of gold hung above it with the invitation to traveling scholars and retainers from the courts of the feudal lords that if any could "add or subtract even a single character" he might have the thousand measures of gold. The work was named the *Lushi chunqiu*, the *Almanac of Mister Lv*.

According to Sima Qian, Lv Buwei's work contained judgments on the success and failure of nations, particularly of the period of the Warring States. Lv Buwei claimed that his almanac recorded:

> the principles that lead to order and anarchy and to survival and destruction, and to the knowledge that leads to an understanding of the factors that determine old age and premature death, good fortune and calamity. They ascertain the indication in Heaven above, the conforming signs on Earth below, and what to look for among men in the middle.

The Downfall of Lv Buwei

Having become Chancellor in 247 BC, Lv dominated the government until 240 BC, serving as Regent for the young Qin. That year Prince Ying Zheng turned twenty, the age when he might normally be expected to rule directly. At the very time Lv Buwei was exerting his greatest influence and his Almanac was nearing completion, however, the seeds of his demise were being sewn. The dowager queen had become imprudent in her wanton feeding of her sexual appetite. There were rumors that she was continuing in her indiscretions with Lv Buwei, who,

the same rumor also claimed, had previously impregnated her with the future First Emperor. When the dowager queen's lechery did not cease and the rumors continued, Lv Buwei, fearing that discovery would cause disaster to befall him, secretly hoped to silence the queen by finding a man to satisfy her. His searching uncovered the legendary Lao Ai, who, it was said, had the necessary equipment to complement his enormous sexual appetite. Lv made the information about Lao Ai's endowments available to the dowager queen hoping to entice her. The queen's interest was indeed aroused: she bribed the doctor in charge of castrations to remove Lao Ai's facial hair and to certify him as a eunuch. Only as a eunuch could Lao Ai become a servant of the dowager queen.

When Ying Zheng took the throne, however, he learned of the affair and moved swiftly to resolve matters. Lao Ai now led a revolt against the new king, but Ying Zheng was ready for the challenge: he suppressed the rebellion and put to death the participants, with Lao Ai drawn apart by horses and the two young sons of the Queen Mother Zhao Ji and Lao Ai – Qin's step-brothers – strangled in order to remove the threat of any further retribution.

Lv Buwei was also implicated in the intrigue, possibly because he had facilitated the deception that Lao Ai was a eunuch. Qin wanted to execute Lv Buwei, but in view of the great merit of his services to the kingdom, and because the traveling scholars and debaters who had become his personal guests were so numerous, Qin chose not to apply the full extent of the law. But a year later, in 237 BC, in the 10th month of his 10th year as Emperor, he removed Prime Minister Lv Buwei and sent him from the capital to Henan, where Lv Buwei, fearing eventual execution, drank poison and died. He was buried in secret. Qin Shi Huang saw to it that "from this day forward anyone who manages affairs of state so wrongly as Lao Ai and Lv Buwei shall have all his possessions confiscated."

Chen Kaige's film "The Emperor and the Assassin" depicts Lv Buwei

as a noble and tragic figure who, for the stability of the new nation, rather than confirm the truth that the king is actually his (Lv's) son, takes his own life. (This altruistic act is perhaps difficult to reconcile with Lv's machinations that paved the way for him to become the Chancellor; but at this point Lv was running out of options.) At any rate, in Chen's film, Lv Buwei's suicide enables Qin to brand him as a traitor, and to suppress the rumors about his own lineage as little more than the lies of one unworthy of trust.

After his death, however, Lv Buwei's influence remained. He had created a tradition of culture which resided in the many officials he had recruited, in the scholars he had patronized, and in the framework of thinking which the composition of the *Lvshi Chunqiu* had created.

Li Si and Han Fei

Like all people, Li Si was shaped by the experiences of his youth. Li Si was originally from the kingdom of Chu. When he was a young minor official in Chu, he one day saw a mouse eating filthy food inside a toilet and noted that whenever a person – or even a dog – came near, the mouse would hide in fear. Later he saw another mouse in the granary. It was free from fear because it had plenty to eat, and no humans or dogs threatened it. Thinking about the differences between the two mice, he came to understand that no matter how much talent a man might have, his life depended on his environment and the best situation was to be like the mouse living in the granary. It also brought home to him the idea that if you control the food, you can control the rat. In the Middle Kingdom at the time, many young men went "where the action was". Li Si saw opportunity in Qin – and he was determined to live well like the mouse in the granary.

Li Si developed a reputation that so impressed Lv Buwei that Lv invited him to court. Soon he was granted an audience with young Prince

Ying Zheng. In their discussions, according to Sima Qian, Li Si reminded the King that the state of Qin had been strong for six generations, especially since the time of Shang Yang. Qin was now stronger than the other six states. In the past, many had tried to conquer the other states, but Ying Zheng was the man who could unite all the separate states into one powerful nation: "Tian Xia" (All Under Heaven). Ying Zheng himself was a fierce warrior and great leader; it would be as simple as sweeping the kitchen clean. "The time," said Li Si, "was now."

In 237 BC, Ying Zheng moved quickly to replace disgraced Lv Buwei by elevating Li Si and another scholar, Han Fei to serve as chancellors. Both men were disciples of Sun Zi; both were legalists with a reputation for creating order and both would help the state of Qin to become the center of a new nation. Legalists, to put it simply, believed that people were not perfectible; rather they were to be controlled by (usually harsh) punishment. (Li Si, however, with a view to the perfectibility of his own position, soon became jealous of Han Fei, and in 233 BC forced him to drink poison.)

In matters of battle, Sun Zi had advocated the capture of enemies without attack if at all possible. Sun Zi called this tactic the "sheathed sword". It means that you first make your opponent aware of your power, and then afraid of it. (It was, perhaps, a variation of the modern-day "Speak softly but carry a big stick.") Captured soldiers were to be spared so they might swell the ranks of the conqueror. But the sheathed sword was not Emperor Qin's style. Loose ends made him nervous, so he routinely annihilated his enemies and slaughtered their troops. When he conquered Zhao in 228 BC, he is said to have killed 10,000 captive soldiers. In the invasion of Yan, Qin is said to have even buried alive all the children of Yan who had survived his invading armies because he feared reprisals if they lived. Noble families of conquered states were brought to his capital at Xi'an and placed under surveillance.

Qin Shi Huang viewed the adjoining kingdoms as targets for

expansion. He was a visionary who believed that it was the mandate of his family to "unite all under heaven" (the theme of Zhang Yimou's film "Hero"), and when he set out to do so, he acted with a cunning that would have made Sun Zi proud. Instead of waging war against the other six states all at one time, he picked his fights carefully; and because of the pervading atmosphere of distrust during the Warring States Period, the other states failed to form alliances to stop him. Instead they resorted to trickery when they could. Around 246 BC, according to Sima Qian, the King of Han, hoping to distract the state of Qin and exhaust its resources, sent his water engineer Cheng Kuo to Qin to recommend the construction of a canal joining the Jing and Luo rivers, two tributaries of the Wei River.

When the 400 meter canal was half completed, Qin discovered that he had been tricked. He would have executed Cheng Kuo but the engineer convinced him that the canal was indeed a good idea because it would irrigate previously unusable land, making the interior of Qin a fertile plain. Qin's well-fed troops captured Han in 230 BC; Zhao in 228 BC; Yan in 226 BC; Wei in 225 BC; Chu in 223 BC; and Qi in 221 BC. In 221 BC, he became Qin Shi Huang, the first Emperor of China.

In 221 BC, Ying Zheng was now the king of the state of Qin, but ruling over the whole of China. Wishing to show that he was no more a simple king like the kings of old during the Warring States Period, he created a new title, *huangdi* (皇帝), combining the word *huang* (皇) which was used to name the legendary Three *Huang* (Three August Ones) who ruled at the dawn of Chinese history, and the word *di* (帝) which was used to name the legendary Five *Di* (Five Sovereigns) who ruled immediately after the Three *Huang*. These Three *Huang* and Five *Di* were considered perfect rulers, of immense powers, and very long lives. The word *huang* also meant "big" or "great". The word *di* also referred to the Supreme God in Heaven, creator of the world. Thus, by joining these two words, which no one had ever done before, Qin Shi Huang created a title

Map showing the location of the Cheng Kuo canal

on a par with his feat of uniting the seemingly endless Chinese realm, in fact uniting all the world (ancient Chinese, like ancient Romans, believed their empire encompassed the whole world).

Qin had decided that future generations would refer to him as the First Emperor (Shi Huangdi); his successor would be referred to as the Second Emperor (*Er Shi Huangdi*, literally "second generation emperor"), the successor of his successor as the Third Emperor (*San Shi Huangdi*, literally "third generation emperor"), and so on, for ten thousand generations, as the Imperial house was supposed to rule China for ten thousand generations ("ten thousand", which also means "good fortune", is equivalent to "forever" in Chinese.)

When the Qin Dynasty was overturned by the Han Dynasty, the title took on a new significance. It could no longer mean that Qin was

the first emperor of China, so the word *huangdi* (emperor) in his name was also shortened to *huang*, so that he became known as Qin Shi Huang. It seems likely that *huangdi* was shortened to obtain a three-character name, which matches the three-character names of Chinese people (it is extremely rare for Chinese people to have a name made of four or more characters).

The name Qin Shi Huang ("First Emperor of the Qin Dynasty") is the name that appears in the *Records of the Grand Historian* written by Sima Qian.

CHAPTER 2

Assassinations and Excesses

The Assassination Attempts

Qin began his reign by thwarting Lao Ai's assassination attempt. In all, there were three such attempts made on his life; as a result, Qin was selective about who could be admitted into his presence. Even concubines were stripped and carefully searched by (willing) servants. Two recent films, "The Emperor and the Assassin" and "Hero", are both based on the failed assassination attempt by Jing Ke. In this story, Dan, the heir of the throne of Yan, despised Qin and was burning for revenge. In 227 BC, He enlisted the services of the assassin Jing Ke, of Yan, who devised a plan to penetrate the protection of Emperor Qin's guards.

Jing Ke assassining Qin Shi Huang

The plan worked like this. At that time there was living in Yan a fugitive from Qin for whose head the king of Qin had offered a thousand pieces of gold. This man was also eager to rid the world of the tyrant Qin, and he offered his life and his head most willingly to that end. Jing Ke brought both the man's head and a map of Yan to Qin's court under the pretense of collecting the reward. The map was really intended as a distraction: it was ostensibly to show Qin how easily his army could conquer Yan and add that state to his treasury. But Jing Ke had concealed a dagger in the rolled map, and as he was unrolling the map, he grabbed the concealed dagger and lunged at Qin. Qin saw the gleam of the knife, however, and starting up in the greatest alarm, ran wildly about the palace.

Meanwhile, the guards outside Qin's chambers were forced to remain outside, as they were unable to enter the august presence except under direct orders from Qin himself – who was at the moment busy with his own survival. However, Qin was a veteran of many battles and a fierce warrior as well, so that he gave the trained assassin Jing Ke more than he had bargained for. At length, Qin overcame and slew Jing Ke, but he was so enraged at this attempt on his life that he determined to avenge himself by invading Yan. This he did, and soon that state was added to his own. He also became increasingly suspicious of dangers – real and merely imagined – and these suspicions made him even more reclusive.

There are several variations on this story. In Chen Kaige's "Emperor and the Assassin", Qin uses devious means to lure the assassin into his palace in order to create an excuse to invade Yan. In Zhang Yimou's "Hero", however, the assassin has a clear opportunity to dispatch Qin, but at the critical moment he has a change of heart because he sees Qin as the leader who can end the chaos of the Warring States and bring peace to China by uniting "All Under Heaven" (Tian Xia).

Despite removing Jing Ke, however, Qin's life would continue to be at risk. Jing Ke's failure merely prompted his close friend Gao Jianli

to attempt to avenge Jing's death. Gao, a highly-skilled musician, was brought into Qin's presence as a famous lute player. Someone alerted the emperor to Gao's murderous intentions, but Qin, unable to bring himself to kill such a skilled musician, ordered his eyes put out and continued to allow Gao to play in his presence. Gao's lute had been weighted with lead, and he used it to strike at the king. Qin eventually decided that enough was enough, and, opting for security over beauty, he had Gao executed.

The Palaces at Xi'an

Today, the streets in Xi'an are clogged with traffic and noisy with the honking of horns; and everywhere there is the hammering that attends new construction. But if you dissolve to 2200 years ago, you enter a much different world. Qin Shi Huang was raised in the Xianyang Palace, and from there he began his rule. But as he was wont to do, he imagined much more splendid quarters, a vision of luxury so grand that it almost defies belief. This vision he called E Pang Palace.

Construction at E Pang began in 212 BC, two years, as it turned out, before Qin's death. The project was massive, with as many as 700,000 laborers involved. E Pang Palace would even have terraces that could seat ten thousand. Qin had draftsmen draw up plans for each of the palaces of the states he had conquered and then had replicas of them built within his palace walls. For reasons of feng shui, Qin's palace would be the central star, with the other palaces gathered around for protection, like stars in the Milky Way. Within each replica, he would house the concubines and other treasures that had been looted in his conquests. The palace was even said to contain, depending on which account you believe, as many as 700 smaller palaces.

Historical documents and works of literature have repeatedly described its magnificence: It covered such an immense area that the

weather in different parts of the palace varied. It housed so many beauties in its harem that in 36 years some never had a chance to meet the Emperor; and the royal family lived in such luxury that jewels and jade were scattered in the palace passageways like pebbles on a beach. Since the fall of the Qin Dynasty, the E Pang Palace has become a metaphor for the extravagance of state administrators and the excesses that have led so many rulers to their doom.

When Qin died, work on the construction of the palace was suspended as the laborers were forced to turn their shovels toward the completion of his mausoleum. (Apparently, it was six months before Qin's body could be properly interred at Li Shan Ling.) But work on the palace was allegedly resumed in 209 BC under the direction of Hu Hai, who seemed bent on outdoing his father's excesses to such an extent that open revolt was beginning to foment. When his two prime ministers dared to speak up on behalf of the over-taxed people, however, he threw them in jail and pressed on. So there is reason to believe that the E Pang Palace went ahead to completion.

When Xiang Yu captured Xianyang and conquered Qin, his men carried out massacres in the city and burned the palaces at Xianyang. The fires burned for three months, according to Sima Qian. Chinese scholars interested in and familiar with this history have believed ever since that the E Pang Palace was also burned in the fire, along with the capital. The fire and the grandeur of the palace have been described in numerous works of literature, among which the most famous was "Ode to E Pang Palace," by Du Mu (AD 803-852).

The Search for E Pang Palace

Beneath farmland in the suburbs of Xi'an lies one of the greatest mysteries of Chinese architecture. E Pang Palace was believed to be the largest and most luxurious palace in the country's history. Documents say

E Pang Palace

the palace was burned to the ground during the uprising that overthrew the Qin dynasty.

However, according to a *China Daily* article dated March 5, 2004, recent archaeological finds have raised a shocking question: did the palace ever exist, or are both it and the fire a 2,200-year-old misconception?

A team of archeologists led by Li Yufang began to explore the historical site of the palace in the autumn of 2002 in the area of Jujia and Zhaojia villages in suburban Xi'an. Researchers were concerned that new construction in the area was threatening the historical site, and they wanted to explore the land before buildings covered it. To date, the archeologists have taken core samples in an area of 200,000 square meters, or two-thirds of the designated area; drilling 5 holes in each square meter, or over one million holes. This extensive core sampling should have detected the remains of E Pang Palace.

However, the archaeologists' drilling has revealed no traces of the

fire, according to the research team. "Xiang Yu never had the E Pang Palace burned," said Li Yufang. "Everywhere in Xianyang, the Qin capital, we found burned red soil and traces of ashes during our excavation of the Xianyang Palace, but we've found nothing of the kind at the site of the E Pang Palace."

What's more, their archaeological digs to date suggest that the E Pang Palace might have never been completed. "During trial excavations we found tiles of the Qin Dynasty but not a single piece of eaves tile, which was the most common part of buildings of the period," Li said. They have also unearthed relics and other items left by people living in the Han Dynasty (206 BC-AD 220), but that they have found little so far that is related to the area's social life going back to the Qin Dynasty. "If there were any big buildings in the Qin Dynasty, some vestige of them should have remained," she said.

Li's announcements have shocked not only archaeologists and historians, but also the public. "*Shi Ji* (*Records of the Historian*) only says Xiang Yu had the palaces in Xianyang burned. We have believed," said Wang Hui, a professor with Shaanxi Normal University, "in the razing of the E Pang Palace mostly because of literary works and misunderstandings."

We do know that Qin had grand and luxurious visions. Whether or not the work on E Pang Palace was completed may one day be determined by more digging, but the mere conception of so grand a project was itself a wonder.

CHAPTER 3

Life on the Street

Changes

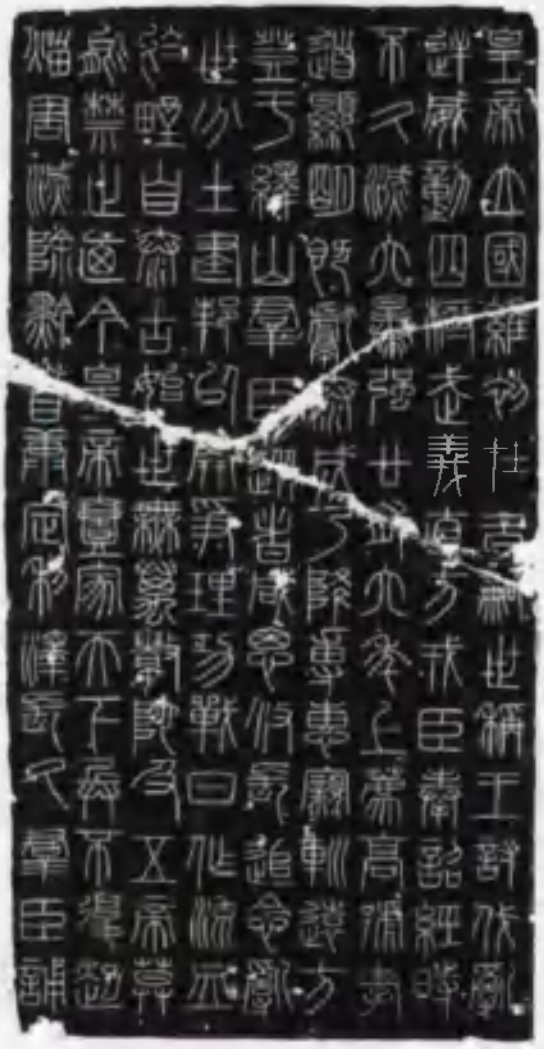
While the quality of life for ordinary citizens on the streets of Qin's new China was substantially less luxurious than it would have been inside the palace walls, it seems that for most people during the early years of Qin's reign, life was better than it had been during the Warring States Period. Having united China, Qin directed his attention to improving it, and to his credit, Qin worked like a man obsessed with a vision. Records were kept on bamboo scrolls (paper had not yet been invented), and it is said that each day Qin would keep himself informed on the state of his nation by studying as much as 50 kilograms worth of documents.

Qin's Chariot

But the benefits of this careful attention to detail were many. Qin established a network of roads. These wide roads – in some places a monstrous 250 feet wide – would make it easy for galloping horses and the hauling of carts. The roads extended right to the northern border and served both to unite his new nation and give him access to its vastness. There were three major roads which radiated from Xianyang. One went eastward to Hebei, Liaoning and Shandong; another south to Jiangsu, Zhejiang, Hunan, Hubei, Jiangxi and Anhui; and the third to the Inner Mongolian Autonomous Region. The roads played an important role in the flow of products, army movements and the consolidation of the country's unification. Then, so that vehicles could travel smoothly, he decreed that chariot axles should all be a standard 6 feet wide.

The construction of the Great Wall, though a monumental and resource-draining endeavor, meant that the northern reaches of the kingdom could enjoy a relative peace, and the wall itself became yet another highway across the northern reaches of Qin's China.

Prime Minister Li Si, both a legalist and a shrewd administrator, was responsible for some of the achievements that are commonly attributed to Qin Shi Huang. It was Li Si who helped systemize Chinese writing. Before the Qin conquest, each region had its own written script. Li Si, however, developed a new, centralized script based on the prior regional scripts called the *xiaozhuan*. Thus, the characters which were different from those found in the state of Qin were discarded, and Li Si's *xiaozhuan*, purported to contain 3,000 characters, became the new standard. Edicts written in the new script were carved on the walls of sacred mountains around China, such as the famous carved edicts of Mount Taishan, to propagate the new script among all the people, and also to let even Heaven know of the unification of Earth under its new emperor. The *xiaozhuan* is important in the history of Chinese writing as it is one of the first efforts to systemize the Chinese ideographical system of writing. With the unification of China, not only language, but everything else that



The famous carved edicts of Mount Taishan

touched on daily living was to be standardized: currency, laws, weights and measures and writing, to name but a few. Agriculture also changed. With the invention of the automatic seed drill, one man could plow and sow 100 mu in a day. Combined with the improved irrigation in the Wei River valley as a result of the canal, food was thus more plentiful.

The feudal system that had lasted since the Spring and Autumn Period had done little but create dissension and misery. Qin replaced it. He is said to have believed that the number 6 was sacred (also see Chapter 11, "Was Qin Shi Huang an Immortal?"), so he divided the nation into 36 (6x6) prefectures, and appointed a military governor in charge of each one. The governor would report directly to Qin. The prefectures were further broken down into four progressively smaller administrative units: counties (ten counties equaled one prefecture); townships (ten townships equaled one county); tings (ten tings equaled one township); and lis (ten lis equaled one ting). He also appointed twelve ministers (2x6) who helped him make decisions on state affairs. By appointing the ministers directly, Emperor Qin had all the power of the State in his own hands.

Punishments

To maintain his hold on that power, Qin had a large standing army. The population of the unified China was approximately ten million. Of that number, more than two million men were soldiers and did no work. The result of this distribution of labor was a shortage of workers for farming. However, the labor shortage was ameliorated by the large numbers (hundreds of thousands) in prison who were used for forced labor.

A system of increasingly harsher punishments also was intended to maintain order. Punishments were, according to scrolls that have survived, clearly defined and graduated. (Twenty thousand such scrolls were found in Xiang Xi in Hunan. These government documents, that

date from Qin's 25th year to the first year of his son Hu Hai's reign, are consistent records of politics, the military, ethics, the economy, and geography – even the postal system.) From worst to least, here is what those who broke the law could expect:

1. **death** (either by beheading, quartering, being drawn apart by horses, or – as devised by Li Si – having the limbs severed then being cut in two at the waist; or live burial)

2. **mutilation** (characters were carved or branded on the face; feet, the penis, or the nose was removed; women had their vaginas sewn shut)

3. **imprisonment** (which resulted in forced labor)

4. **banishment** to the wilderness (often a death sentence as conditions were harsh and in transport the prisoner could be ill treated – even plunged in boiling water, for example)

5. **the lash**

6. **shaving** the head and beard (It was believed that since all parts of the body had come from the parents, out of respect these should remain untouched. Later, in more modern times, the Manchu would force the Han to cut their hair and wear it in a topknot.)

7. **fines** or the payment of bribes

Burning the Books

History has generally been unkind to Qin, branding him a tyrant. The fact is, however, that Qin, at least early in his reign, simply established a rule of law that required absolute, unwavering obedience; then he enforced his laws. Compliance was rewarded, but the punishments for lawbreakers were even swifter. As a result of the clear laws and their clearer enforcements, however, society became more stable once people could easily distinguish black from white. According to the historian, Sima Qian, after ten years of Qin's rule, the nation was orderly: there was good government in the towns and cities, general prosperity,

and virtually no crime.

Qin's legacy has often been reduced to a begrudging acknowledgement of his genius which, according to his critics pales against his tyranny. Did he not burn all the treasured texts of Confucius, and did he not put to death all the Confucian scholars? His critics ask. (See, for example, James Legge and Dennis Bloodworth.).

But what, according once again to Sima Qian who was writing during the Han dynasty shortly after Qin's death, really happened? By the time that Qin was 34, although he had held the title of Emperor for 21 years, in reality he had reigned for only 12 years. Yet during those 12 years, he had magically transformed the land. China was now a stable kingdom; there was both peace and prosperity (though the road to those rather abstract destinations was indeed littered with ashes and corpses). It was said that there was such respect for the law that an object of personal property dropped on the street would be left to wait for the owner's return.

Given the previous instability of the Warring States Period, scholars began to heap praise on the Emperor. Once, returning from a visit to the south, Qin held a feast which was attended by, among others, 70 of the greatest scholars. Many of the scholars at the feast began to praise the Emperor for bringing such peace and prosperity to the land, especially after the more than 250 years of the Warring States Period; but one scholar, an academic named Chun Yuyue, criticized Qin for being the commander of everything. In the past, he argued, all the power of China was not in the hands of one person. People formed alliances, and thus could be depended upon in a crisis to support one another. He further suggested that a state not modeled on these values of antiquity could not last.

Qin was prepared to discuss the matter, but it was Prime Minister Li Si who would direct the course of events. Li Si advised Qin that the times had changed and that not one of the rulers who had come before him had been able to unite "all under heaven". But, Li Si continued, Qin

had established foundations for an empire that would last ten thousand generations. It was therefore unhealthy for the state of Qin to be criticized by scholars whose heads were still mired in the past. Li Si went on to suggest that if the criticisms of the scholars were allowed to continue, the nation would decline. It was essential, he argued, that the records of the past (the works of Confucius) be burned, and that anyone quoting those books be executed. Another alternative: anyone not burning the offending books would be given an opportunity to re-consider his decision by spending four years as a laborer on the Great Wall. But the fact was that not all books were burned. Those on medicine, husbandry, and divination were considered valuable, and were spared. (Perhaps many books that it was thought had been destroyed by Qin were actually burned in the fires that razed the city after its subsequent capture by Xiang Yu.)

The death of the Confucian scholars came a year later after increasing public criticisms by some of the scholars who, it is supposed, resented being unable to refer to the classics. It was felt that these open criticisms of Qin were creating social unrest, so an investigation was launched, and it was concluded that upwards of 460 of the scholars had violated the law of the land. As a punishment, and as more proof that the law was more important than the rights of any one individual, all 460 were buried alive.

In defense of Qin, having carved out his kingdom with the sharp edge of his sword, he was keenly aware of how complex the control of it was, and how fragile were the bonds that secured it. The laws of the nation were clear, and the scholars knew them. And after the burning of the books, there should have been little doubt that Qin would enforce these laws. However, after the death of the scholars, laws governing freedom of speech became more invasive, and they were also even more strictly enforced. (Qin's growing paranoia may also have been in part precipitated by his ingestion of mercury, which some believe he took to

prolong his life.)

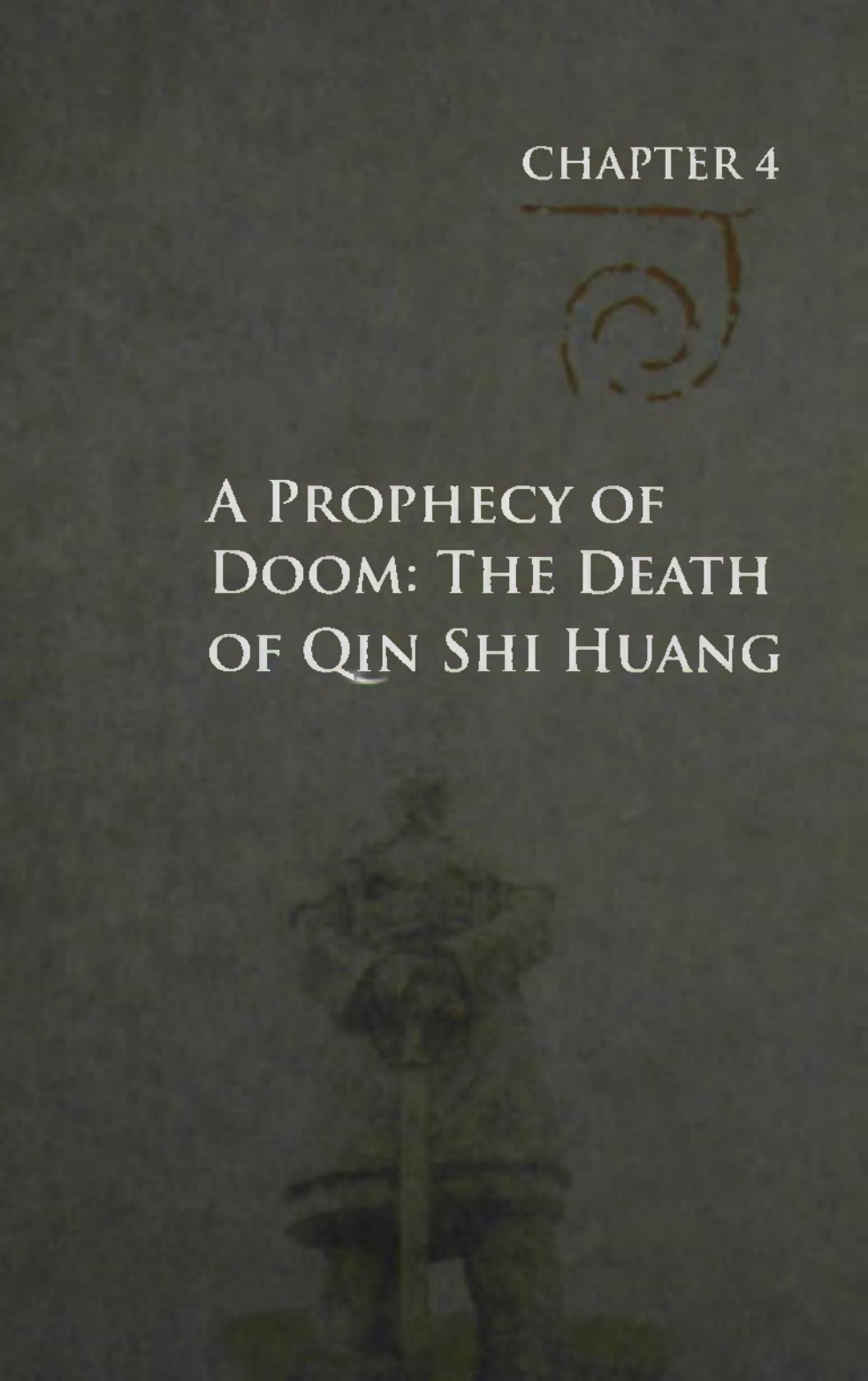
The growing dissent among the people prompted Fu Su, Qin's eldest and most favored son, to caution his father, saying that his attempts to silence the words of Confucius would only alienate the people. In response to his son's complaint, Qin punished Fu Su by sending him to oversee the work on the Great Wall, work which was under the control of General Meng Tian.

What would cause the Emperor to make such a decision? Fu Su was his favored son, and as we see later, his heir apparent. (Although Qin never gave up on his quest for immortality, when he was dying, it was Fu Su that Qin wanted to replace him.) Perhaps it was Qin's inability to brook dissent. Qin had been raised in an environment where loyalties were always in question. Dissent suggested to him a potential enemy lurking behind the differing opinion, and as a result, Qin seemed to trust only those who always agreed with him.

It was a decision that would have far-reaching consequences, and one which, combined with other factors, would lead to the destruction of the empire of Qin.

CHAPTER 4

A Prophecy of Doom: The Death of Qin Shi Huang



It is ironic that the fortunes of kingdoms and kings are sometimes determined by the subtle decisions and actions behind the scenes of seemingly inconsequential minions. Zhao Gao, a eunuch, had been little more than a teacher for one of Qin's many children, but were it not for his machinations, Qin's empire might indeed have endured "ten thousand generations", and there might never have been a Han Dynasty.

Qin wanted control over everything in his domain. Whether animate or inanimate, whether moving or stationary, Qin had regulations to govern it. It is no surprise, therefore, that just as he sought control over life on earth, he also sought control over life itself. To that end he devoted much of his energy to attempts – many of them foolish – to extend his own life: in other words, he hoped to defy time itself. He had heard stories about a medicine or elixir that was to be found at three holy mountains: Fangzhang, Yingzhou, and Penglai (modern Japan). He sent several thousand young and pure boys and girls (estimates vary between three and ten thousand) in pursuit of this elixir. After a frustrating wait of over four years, one messenger (Lu Sheng) returned; but he had no magic potion for longevity in his hands.

A Prophecy of Doom

To compensate for his lack of medicine, however, Lu Sheng made

Fu Su

up stories of gods and ghosts, and even gave Qin a special prophecy that he claimed had come from a fortune teller: "Hu will destroy Qin," Sheng advised him. Qin interpreted this prophecy as referring to the ongoing threat that Qin faced from the Xiongnu in the north, who were also known as the "Hu Ren". But Qin already knew that the north of China was a threat. The Xiongnu had flourished in the north during the later stages of the Warring States Period. It was a large tribal commonwealth of the northern nomadic nationalities that ruled over the grasslands and represented a constant threat.

Work on the Great Wall was proceeding rapidly, the work being supervised by his loyal general, Meng Tian and Fu Su, Qin's favored son who, as has been mentioned, had dared to criticize his father for the attacks on the Confucian scholars and was sent north to join Meng Tian. It was a decision that would cast a long shadow over the kingdom. Qin's threat came not from the north, but much closer to home. His son Hu Hai would precipitate the ruin of the Qin dynasty.

Zhao Gao's Treachery

In the summer of 210 BC, while Qin Shi Huang was at Sha Qiu Tai in southeastern Hebei on his fifth investigative journey around his kingdom, he died. The exact cause of his death is not known, but some accounts suggest that in his quest for the elixir of life, Qin took or was given mercury, which is of course poisonous. The 1995 film "The First Emperor of China" has Qin following the directions of his physician Zu Fu, who prescribed two treatments to prolong Qin's life: frequent sex

Statue dedicated to Meng Tian at the Great Wall, Inner Mongolia

with multiple partners and the ingestion of mercury compounds. Apparently, Qin followed the doctor's orders, indulging himself in both experiences for nearly ten years. If so, it is ironic that in seeking to prolong his life, Qin shortened it. The effects of the mercury were twofold: mentally it would lead to nerve damage and paranoia, and physically to kidney failure.

We do know that Qin was fascinated by mercury, so that rivers, lakes and oceans of mercury would flow in his tomb. (Although the tomb has not yet been opened, the presence of high concentrations of mercury has been demonstrated by Dr. Reigel of the University of California at Berkley who examined 4,000 core samples from the mausoleum.) All this speculation surrounding Qin's death is driven by two realities: one, Qin was really quite young – just fifty – when he died; the other, Qin paid close attention to matters of his personal health. Consequently, although there is no factual record of Qin's having taken mercury, his early death invites speculation and the rumors persist.

Qin's death created an instant crisis. Prime Minister Li Si, fearing the social unrest that would accompany the uncertainties surrounding a change of leadership, decided to conceal the fact of Qin's death. Most of the imperial entourage accompanying the Emperor were not advised of his death, and each day Li Si entered the official wagon and pretended to discuss affairs of state. Because Qin had become increasingly reclusive, Li Si's ploy did not raise doubts. Hebei province was, however,

two thousand li by chariot from the capital, and the August heat was causing the Emperor's body to rapidly decompose, filling the air with the unmistakable stink of death. To mask the smell, Li Si decided to overwhelm it. He had the royal chariot followed by another one which had been filled with abalone, also decaying in the heat. Then, when people wondered at the stench of decay, he would point to the dead fish. Qin was eventually interred two months after he had died.

There were other facts about Qin's death that had a bad smell to them. Qin's will had stated that his son Fu Su was to replace him as emperor, but Hu Hai, Qin's younger but less able son, also yearned to be the emperor, and the ever devious eunuch Zhao Gao, who had been Hu Hai's teacher, believed he could have more power and influence over Hu Hai than he would have over the more noble Fu Su. He intercepted Qin's official letter to Fu Su, and convinced Li Si to be a part of a plot: they forged an edict purporting to be Qin's and had it delivered to the north where Qin's army was battling the Xiongnu.

The edict allegedly cited Fu Su's many failings and as a result, required him to commit suicide. Li Si was also aware of the dangers that lay in General Meng Tian's loyalty to Emperor Qin, and he therefore required the General to also commit suicide. Meng Tian grieved because he believed he had disappointed his Emperor by not winning a clear and rapid victory in the north, and because of the many casualties and long duration of the war. For himself, he accepted the forged edict to commit suicide, but before he did so, he advised Fu Su to ignore the edict. First, investigate to see if it is true, he suggested. But Fu Su only said: "If my father the Emperor asks me to commit suicide, how can I not obey?" He knew he had disappointed his father by criticizing him for his harsh treatment of the Confucian scholars.

Once Zhao Gao and Li Si received word of Fu Su's and Meng Tian's deaths, Hu Hai was established as the second Qin emperor. One of Hu Hai's first actions as Emperor was to establish a reputation for himself.

Zhao Gao had advised him that the servants of Qin would not be loyal to him; rather, they would only pretend to be loyal, but their loyalties would really lie with the first emperor. Acting with the same thoroughness as his father had done in the face of a perceived threat from such as the children of Yan, Hu Hai had all his father's servants put to death.

Outside the palace walls, trouble was brewing in the shape of a revolution that history refers to as the Chen Sheng and Wu Guang Uprising. As Qin's projects had become more and more ambitious (particularly the E Pang Palace and the Great Wall), and more and more of the country's resources were being consumed in ways that seemed unrelated to the ordinary person, and more freedoms were vanishing after the execution of the Confucian scholars, the people had become tired under Qin Shi Huang – and perhaps tired of him. As Qin's mental processes began their mercury-induced decline, resources were strained and there was widespread hunger and dissent. Two farmers, Chen Sheng and Wu Guang, began a movement to overthrow the Emperor. Now, under the heavy hand of Hu Hai, matters seemed to only get worse. The rule of law that had been Qin's strength was evaporating and the air was filled with thoughts of rebellion.

However, even though outside the palace there was unrest, inside the palace, Hu Hai was being buffered from all this bad news in two ways. First, by his own paranoia. Any messenger foolish enough to deliver reports of uprisings or problems was promptly sent to join his ancestors. And second, by Zhao Gao's duplicity. Rumors were everywhere, but Zhao Gao advised Hu Hai not to listen to the gossip of servants.

Zhao Gao Betrays Li Si

Zhao Gao began to worry about Li Si, while at the same time Li Si was concerned about the growing influence Zhao Gao was having on the Emperor, so that Li Si, who prided himself in the many contributions

he had made to the nation of Qin (and who thus naively believed he was untouchable), was being effectively shut out of the present decision making. Li Si, it turns out, had reason to worry about Zhao Gao. When the Emperor was in the midst of a celebration, Zhao Gao sent an invitation to Li Si bearing the name of the Emperor requiring Li Si's presence at the palace. Li Si arrived and announced his presence, but of course the Emperor had no idea why Li Si was there, so he only commanded him to wait. After a very long time, Li Si sent servants in to inform the Emperor that he was indeed still waiting, but these requests only enraged Hu Hai, who could not understand why his festivities should be interrupted. While the Emperor was expressing this displeasure, Zhao Gao contrived to further poison his mind by reminding the Emperor that Li Si, as Prime Minister, held the second highest office in the land, and Zhao speculated that it would be natural that Li Si, who had risen as high as he could short of assuming the title of Emperor, would still have aspirations for advancement. Li Si, he argued, was therefore dangerous. Perhaps, Zhao suggested, the Emperor could give Li Si a small kingdom somewhere as a means of removing the obvious threat he presented to Hu Hai.

Zhao's scheme worked. Hu Hai chose to have Li Si investigated. Li Si responded unwisely by sending a letter to Hu Hai warning him of the dangers of Zhao Gao.

There were in fact two Prime Ministers, one on the Emperor's left side (Li Si) and one on his right (Feng Quji). Zhao Gao, seeking to remove them, advised the two prime ministers to caution the Emperor about the social unrest over the construction of the E Pang Palace and advise him to reduce military spending and waste in order to mollify the people. Hu Hai's response was to throw the two ministers in prison. Feng Quji felt betrayed (and of course, he was) and committed suicide. But Li Si, reflecting on his long career with the state of Qin and his many contributions to it, believed he deserved and would receive a much better fate.

While in prison, Li Si had plenty of time to realize that he had made a poor choice in supporting Zhao Gao's plan to put Hu Hai on the throne in place of Fu Su, and also possibly time to regret having modified Qin's last will. It was now obvious that Hu Hai was not the man to be leading China. He did not, however, have a lot of spare time on his hands because Zhao Gao routinely sent a team of "interrogators" pretending to be from Hu Hai who repeatedly beat and tortured Li Si. Li Si, however, continued to cling to the faint hope that his significant contributions to Qin would be recognized, and that since in the past he had held such a high office, it was inconceivable that the Emperor would not release him. Ironically, after many sessions of torture, he began to despair so that, when at last a group of real investigators who had been sent by Hu Hai arrived and began to ask questions, Li Si, simply collapsed. He had already experienced too much of the same harsh treatment, so to avoid further futile pain he despondently confessed: "Yes, I am guilty."

Li Si's confession further strengthened Zhao Gao's hold on Hu Hai. Li Si and his second son were both sentenced to a painful death: they were cut in half at the waist. (Appropriately, it was a means of execution that had been devised by the Machiavellian Li Si, who had extended the procedure to first include the lopping off of the victim's arms and legs.) Just to be sure there would be no reprisals, Hu Hai executed all of Li Si's family members on his father's, mother's and wife's sides.

Zhi Lu Wei Ma

Zhao Gao had now risen to power as the Prime Minister, and he wielded his power with a heavy hand. But his real goal was to be Emperor. To discredit Hu Hai, he brought a deer to a meeting of officials. "This is a horse I have brought for your majesty," he says. Hu Hai laughs and says, "That is no horse, it is a deer." But many of the ministers and advisors, fearing Zhao Gao more than Hu Hai, said, "No, emperor, it

is indeed a horse." The emperor believed he was losing his mind, and consulted a feng shui master who advised him that the demons in his body were indeed driving him mad. Hu Hai sought desperate solutions: he became a vegetarian. Those officials who had failed to speak up in support of Zhao Gao's ruse had only a brief period to be concerned about their diets: they were soon dead meat.

The Death of Hu Hai

The rebel movement, led by Liu Bang, was gaining momentum. With Liu Bang's army closing in, Zhao Gao, never one to miss an opportunity for subterfuge, formed strategic alliances with the revolutionaries. At the same time, however, he was advising Hu Hai not to worry, that the little unrest outside was the work of criminals. Zhao Gao was warming to a new plan: to replace the despised Hu Hai with one of Qin Shi Huang's nephews, Zi Ying, who was popular and could win the support of the people. To remove Hu Hai, Zhao Gao's brother, who was in charge of the security guards, led an attack at night against the Emperor. When Hu Hai realized that his rule was about to end, he began to grasp at straws. He offered to abdicate the throne in exchange for a governorship, or the right to be a landlord governing some peasants. He even asked to be allowed to become just a common citizen of Qin.

These requests show Hu Hai's lack of character, class, and more fundamentally – given that he has already brazenly dispatched thousands of perceived threats to his rule – his naivety. His shortcomings are further magnified when he is compared to his brother Fu Su, the rightful heir to the throne, who died with dignity. The guard ridiculed his request, saying that his death had been ordered by Zhao Gao. It is fitting that Hu Hai's last thoughts as he took his own life must have dwelt on the foolishness of his own blind faith in the slippery Zhao Gao.

Zi Ying was then made the new Emperor of China. But as he had

previously spoken out against the death of Meng Tian, Zhao Gao feared Zi Ying too and conspired to kill him at a ceremony at the temple. Zi Ying recognized the dangers in Zhao Gao, however, and pretended to be too ill to attend the ceremony. He reasoned that when Zhao Gao realized that Zi Ying wasn't coming to the ceremonies, Zhao would come to the palace to escort him (to his death), and at that time, the palace guards could give Zhao what he so richly deserved: a death of his own. As predicted, Zhao Gao came seeking the new Emperor, and Zi Ying's guards attacked and killed Zhao Gao. Zi Ying displayed Zhao's hated body to the people, and killed all his family members as well. But it was too late: Zi Ying was emperor for only 46 days before his armies surrendered to Liu Bang. It was such a short period of time that Zi Ying, the last Qin Emperor, is not even listed as a part of the Qin dynasty.

Reflecting on the events following Qin's death, it is easy to be lured into wondering: if Zhao Gao had respected Qin's wish to have Fu Su succeed him, a stable and more benevolent reign might have extended the Qin dynasty...for ten thousand years.

Liu Bang and Xiang Yu

Qin's mega-projects had drained the resources and the will of the people, but with the coronation of the foolish Hu Hai, there was growing dissent and open revolt. Rioting and desertion became the order of the day. Former nobles from the conquered states began to revive their former authorities and establish their own governments.

Xiang Yu, the grandson of an aristocratic general in the former State of Chu (conquered by Qin in 223 BC) organized an army to destroy the hated Qin Government. In 208 BC he installed the grandson of the former King of Chu as a new leader in Chu to rally support, and eight thousand men from Jiangsu heard his call and joined his army.

Liu Bang, a peasant, had joined the Qin army as an ordinary soldier

Liu Bang

and risen to the rank of an officer in charge of a town in Jiangsu. He had been ordered to escort a group of conscripted workers to march north to help build Qin's tomb. As they marched, many of the conscripted workers fled and Liu realized that if he arrived at the tomb late, or with no workers, he would be punished. Since punishments were harsh, and included a tour of duty building the Great Wall, he elected instead to become a bandit and he subsequently attracted an army to his cause. The King of Chu had already declared that whoever captured the capital of Qin at Xianyang would become the ruler of that province. Liu Bang moved swiftly on the capital, and while he did not destroy it, he looted it.

Xiang Yu was fighting the Qin army in the north, and losing. The Qin army had surrounded Xiang Yu at Julu, near the Zhao capital. Xiang Yu was desperate, and desperate men often do great things. After crossing the Zhang He River, he gave the following orders to his troops: scuttle and sink your boats, destroy your cooking vessels, and burn your houses. His troops were going to a battle of no return. It was either win or die. And, because they had no cooking vessels, victory must be swift. Each soldier could bring only three days worth of provisions. After the ninth battle with the Qin armies, Xiang Yu finally defeated them. Then Xiang Yu marched to Xianyang.

It was Xiang Yu's torches that burned the palaces. He ordered his troops to kill all the royal members of the Qin Court, including the infant ruler. The capital was razed, the destruction marking the end of the

Xiang Yu

Qin dynasty.

Xiang Yu had been advised by an officer to locate his capital in Xi'an. The officer argued its many advantages: the city was only accessible through a narrow strip of land between the hills and the Yellow River; therefore it was easily defended. But Xiang Yu wanted to show off his victory. Not doing so, he said, would be like "dressing in silk gowns and walking in the dark", so he established his capital in Jiangsu.

By 205 BC, tensions had mounted between Xiang Yu and Liu Bang, and a war erupted that lasted five years. The war mainly consisted of battles between Liu Bang and Xiang Yu, with Xiang Yu winning most of the battles. But in the end, the victory went to Liu Bang, who routed Xiang Yu's army in Anhui. In 202 BC, a common peasant thus became the Emperor of a dynasty that would replace the immortal Qin Shi Huang, the new Han dynasty, a dynasty that would last over 400 years.

CHAPTER 5

Palaces below Ground: The Mausoleum and the Smaller Pits

Digging Up the Past

Qin's many achievements might have never reached the light of today if it were not for a series of strange accidents. It is easily possible that where the museum stands today, there could instead be housing, shops, fast food outlets and apartments, and people could be simply watching television and eating KFC over one of the world's truly great achievements, completely unaware of what lay in the dark beneath them.

In March, 1974 some farmers in Xiyang village were asked to dig a well. Their shovels would find more than water: it was history itself they were excavating. As they were working, they came across pieces of pottery which were at first mistaken for fragments from an old temple. In fact, some ladies, thinking the ground might be sacred, began to worship. When the cadre of the village, Fang Shumin, returned to check the progress being made on the well, he saw the pottery fragments, and contacted the Lintong County Museum. Zhao Kangmin, in charge of the museum, collected as many fragments as he could and repaired them for display in his museum. It still could have all ended there if a reporter from Xinhua News Agency had not been visiting his home town of Lintong and seen the repaired fragments. Could be an interesting article, he thought. It was. The story was read by Vice Premier Li Xiannian, who realized this might be something important and ordered an investigation.

This discovery could have been overlooked, therefore, if it were not for the combination of many seemingly unrelated factors: the workers' assignment, a reporter's curiosity, the media, and a politician's recognition of potential. (It makes you wonder, too, how many other exciting discoveries wait in the dark of our ignorance for a light to shine on them.)

What the well-diggers found was a tomb, but it was not an ordinary grave. Given that most people are interred in a space that measures one meter by two meters – if indeed they are given any space at all, as many bodies are cremated or lie in unmarked graves – Qin's tomb has turned out to be immeasurably large in both size and importance. Perhaps the first impression of visitors to Emperor Qin's Terra Cotta Warriors and Horses Museum is of its size. The modern museum with its massive buildings, a theater, and landscaping, is indeed a very grand display, and perhaps similar in size to the mausoleum and surrounding area of another great figure in China's history, Sun Yat-sen. But all that display at Xi'an is only a fraction of the complete picture. Qin's E Pang Palace may have been conceived in ostentation, but when Qin went underground to construct his tomb, he reached for another world.

Qin's Mausoleum

In the past, the tradition in China was for an emperor to be buried with his queen. Qin, as he would often do, chose to depart from tradition and to be buried alone. In the end, he was probably more comfortable in death than in life. His mausoleum, which it has been said was the fruit of the labor of over 700,000 workers over the course of some 38 years, was more complex than anything else ever conceived. The Taj Mahal by comparison, built at Agra in India in 1631, took a mere 22,000 workers just 22 years to complete.

Work on the Mausoleum began with the construction of the warriors and the tomb at Li Shan, probably in 247 BC, the first year of

Qin's mausoleum today

Qin's reign. While construction continued for 38 years from 247 BC to 208 BC, the project can really be divided into three phases. At the beginning, from 247 BC to 230 BC, the construction was on a small scale. The second phase was during the ten years that the State of Qin annexed the other six states and unified the country. Qin was now strong enough to provide considerable material resources and manpower for the construction. Though the scale during this period was larger than in previous periods, it was smaller than the third phase because Qin was still occupied with the wars of unification. In the third phase, from 221 BC to 208 BC, the construction reached its peak with up to 720,000 conscripts working there.

Feng Shui

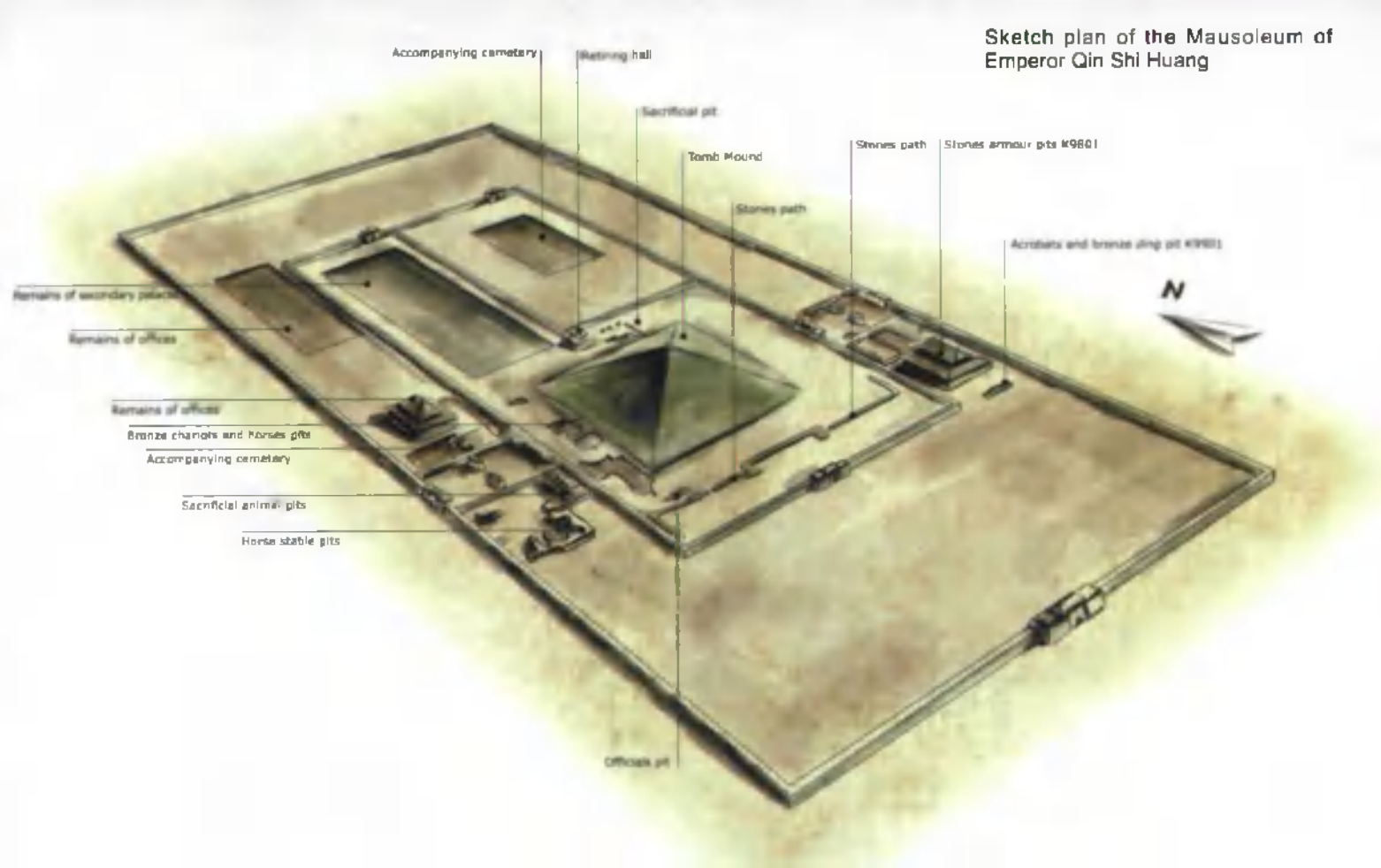
Qin's Mausoleum was situated according to the principles of feng shui. It was constructed on a site with the evergreen Mount Li to the south and the Wei River to the north. This site was also the burial area of Qin Kings. Ancient Chinese buried their kings near the capital. After the capital was founded in Xianyang, the zone between Xianyang and Mount Li became the burial region for the Qin family. The tomb of Emperor Qin's father is only about 10 kilometers west of him.

The mausoleum was on a flood plain at the north foot of Li Shan Mountain. To protect the mausoleum from floods, a dam 10 meters high and 1,400 meters long was constructed. As well, the river to the south of the mausoleum was diverted to run northwest into the Weihe River.

World's Largest Tomb

It would be a mistake to reduce Qin to only the terra cotta warriors. It is true that some visitors to Xi'an, on limited tours, only visit the Museum site and Pits 1, 2, and 3, and do not bother to walk to the top of Li Shan Ling. These famous terra cotta soldiers are, however, only one small part of what is the largest tomb in the world. At completion, Qin's mausoleum occupied over two million square meters and was in reality a city, a city which was also a microcosm of the Emperor's world when he was living. It included a 390,000 square meter palace, a 750,000 square meter stone factory, and a 1,000,000 square meter housing development just for the workers. Just a few meters north of the burial mound, there was even a 3,575 square meter resting hall where the Emperor could enjoy all the necessities of daily life – as if he were still alive. The tomb was all-inclusive: horses, carriages, entertainment, the legal profession, and of course, the military – all were represented. More than 600 attached tombs and pits have been discovered within an area of 56.25 square kilometers, including 33 smaller ones in the northwest corner of the Li

Sketch plan of the Mausoleum of Emperor Qin Shi Huang



Shan site, and another 61 on the west side.

What about the tomb itself? The 2005 Jackie Chan film "Myth" is a story of time travel between modern day Hong Kong and Qin's world, where an earlier Chan is a general in Qin's army – his character is probably based on General Meng Tian, who was loyal to Qin to the end. The film takes a view that has been expressed elsewhere: that the Li Shan tomb was a decoy, and that the real tomb was situated elsewhere. In "Myth", the tomb entrance is behind a waterfall, and Chan's film takes us there to reveal a world of mercury lakes and vast spaces. The film is interesting, but Sima Qian's description, written around 110 BC, gives us different information. He tells us that Qin's tomb was enclosed behind two walls: a 6,210 meter outer wall, and an inner wall that surrounded the burial mound. The pyramid-shaped burial mound was originally 115 (some say 120) meters high, but time and erosion have reduced it, so that today it is approximately 65 meters.

The construction of the mausoleum was so massive a project that it is difficult to imagine its being done without the benefit of the monster machines at our disposal today, and it is nearly impossible to estimate the numbers of workers that would have contributed. Carpenters, masons, bricklayers and repairmen would have been joined by human earth movers. As well, artists and artisans would have touched the heavy work of the laborers with beauty in the forms of statues, ornamentation and jewelry.

According to one ballad, the stones needed in building the mausoleum came from Ganquan Mountain, 200 kilometers to the northwest: "Stones were carried from Ganquan Mountain and the Weihe River was stopped. With work songs by the laborers, stones were piled mountain high."

Large underground passageways were located at each of the four sides of the tomb. In November 1980, two groups of imperial bronze chariots and horses scaled to half life-size were excavated from one of

the chambers in the western tomb passage. As well, figurines depicting various aspects of horse-raising and burial pits for horses were discovered on the east and west sides of the tomb wall of the mausoleum, evidence of the importance of the horse in the Qin empire. (Recent discoveries indicate Qin's ancestors were involved in the breeding and raising of horses.)

The mausoleum itself is also a symbol of the oppression and exploitation of the people by feudal rulers. The poem "Passing by the Mausoleum of Emperor Qin Shi Huang," by Wang Wei (701-761) of the Tang Dynasty, contains these lines:

> Like a green ridge is the ancient tomb,
> Deep is the palace like a purple terrace.
> ...
> The soughing of pines can be clearly heard,
> It sounds like the wail of the people.

Was the Tomb Ever Opened?

Most writers believe that the tomb is intact, and the official Government position is clear: the tomb will remain closed until the technology is developed to ensure the preservation of the tomb's precious contents. Still, it is hard to believe that the tomb has remained untouched for more than two thousand years, especially since it would not always have been so carefully guarded as it is today.

Although there are a few articles which suggest the tomb might have been opened, only one writer takes the view that it *has* been opened. According to *Commentary on the Canon of Rivers*, in the war-torn years of the late Qin Dynasty, Qin's tomb was sacked. Xiang Yu (232-202 BC) led his 300,000 soldiers to loot all the burial articles in the tomb and set many architectural structures on fire. It was a fire that lasted for three months. To make matters worse, later, when a shepherd searching for his

sheep entered the cave of the mausoleum that had been dug by Xiang Yu, his torch started a second fire that burned away all the remaining tomb structures inside and out.

Wen Tao, a warlord of the Five Dynasties (907-960), is said to have emptied the mausoleum again under the pretext of raising funds for soldiers' pay and provisions. What was left for him were scattered rubble and scorched earth in evidence of Xiang Yu's burning and looting.

Other writers maintain that the tomb remains sealed, and indeed that is the official position of the Government archeologists. As a result, even though there is a tremendous interest in the contents of Qin's tomb, these scientists have restricted explorations to core sampling and the use of magnetic resonance instruments. There is an important reason for this official position of restraint: the need to respect the remains of China's first Emperor. (And besides, there is still much to do elsewhere: there remain over 6,000 warriors still in need of restoration, plus the contents of pits yet undiscovered.)

According to Sima Qian's *Records of the Historian*, if Qin's tomb was opened, here is what we would find. The tomb was a subterranean kingdom. It was fitted with models of palaces, replicas of all the major mountains of China, and the major rivers – the Yangtse and the Yellow River – were modeled in mercury. The constellations were depicted in its ceiling, and the known areas of the earth were presented in the floor. The tomb was lit by lamps of whale oil that would burn "for

The trainer of horses

eternity", their light shining on a wealth of treasures. (As recently as October 2005, German and Chinese archeologists, using the latest in magnetic resonance technology, have detected the presence of many coins in the mausoleum and are suggesting that these might represent the state treasury.) The lamps also shone on the body of the Emperor which, according to some, was garbed a jade burial suit and floating in mercury. In other versions, his body lies in a bronze coffin. All this luxury was guarded by doors that were sealed when the tomb was closed (sealing in the hapless craftsmen and engineers who had constructed it); crossbows were trained to fire at intruders.

In the vicinity of Qin's tomb in the shadow of Mount Li, these discoveries have been made:

1. Qin Shi Huang's burial pyramid
2. The inner walls of the burial mound
3. The outer walls of the burial mound
4. The resting hall
5. The side hall
6. Pits of rare birds and animals
7. Stable Pits
8. Pit of two sets of bronze chariots and horses
9. Pit of stone armor and helmets
10. Pit of terra cotta acrobats
11. Pit of judges

Mass Graves of the Construction Workers

As well, a mass grave located in present day Zhaobeihu Cun, a village to the southwest of the mausoleum is believed to belong to those workers on the mausoleum, who, to protect the secrets of the tomb, were buried alive upon completion of the project. The graves themselves occupy over 8,000 square meters, and from the positions of skeletons

unearthed to date, it is apparent that many were struggling to avoid suffocation – not a just reward for their many years of labor you might think.

Tombs of Qin Shi Huang's Children

When Hu Hai manipulated his way to the throne, he eliminated the possibility that another of Qin's children would pose a threat by having all of his remaining brothers and sisters executed. One skull was found with an arrowhead imbedded in the back of it, suggesting an execution. (Ironically, Hu Hai would be supplanted by Zi Ying, a cousin. It seems his murderous reach had not extended far enough.) Their seventeen tombs are situated within a few paces of the stable pits – not a very fitting end for the heirs of the Emperor Qin Shi Huang. Eight of these tombs have been unearthed; they are in a 甲-shape with sloping roadways leading to the tombs. Approximately two hundred historical relics made of different materials, such as gold, silver, bronze, iron, pottery, jade, shellfish, have been discovered, as well as lacquer wares, and fragments of silk fabrics.

Another Well: the Musicians' Pit

In 2000, some villagers digging a well about two kilometers from Qin's tomb encountered some burnt soil and pottery fragments. These findings would eventually become the focus of a National Geographic special called "Qin: Emperor of Eternity" as the magazine sent a team of filmmakers to the site to cover the unearthing of the pit. Archeologists first marked the boundaries of the discovery with lime then proceeded to carefully explore what lay below the ground. They used bamboo poles to probe up to ten meters into the ground, where they discovered pottery hands, fingers, and some mysterious bronze sticks. But the small pieces had been completely smashed, and there had been damage by flooding.

Acrobat

What did the pit represent?

Researchers found a leg, a hand, and a torso, and were able to assemble a statue of someone sitting. Eventually bone picks for stringed musical instruments were also found. When the pieces were put together, it was concluded that the figures were musicians. All together, there were 16 statues, with each of the musicians concentrating as if in the act of playing music. They were attended by bronze cranes, perhaps representing the souls of the immortals.

When we think of Qin, we think first of the stone-willed leader whose armies over-ran the six other states and brought them to heel. But as the secrets of more pits are unlocked, we are being given a much rounder picture of the man. In his tomb, Qin has represented the complete spectrum of his world, including his love of entertainment.

The Pit of the Acrobats is located just south of the Armor Pit. Researchers have unearthed 12 pottery figures. The figures, wearing short skirts, are caught in various poses: one is very thin, but has powerful legs and one arm is raised as if in the act of throwing something; another has a thick body and powerful muscles. The figures are most likely acrobats and jugglers, entertainers who would have been regular performers at Qin's palace.

Above the acrobats in the pit was an enormous 3-legged cooking vessel, represented in Chinese by the character "ding". Weighing 212 kg, it is the largest of such pots to have been found. The ding was initially used as a large cooking vessel, but over time it became an official gift for high-ranking officials. When it was presented, the achievements of the official were inscribed inside. (The Shanghai Museum is also designed on the shape of this traditional Chinese cooking vessel.)

Pit of Rare Animals

To the west of the mausoleum at Li Shan, thirty-one pits of rare animals and birds with a few attendants have been unearthed within the confines of the wall. These finds indicate the Emperor's love for hunting. Every animal known to him was buried with him after his death.

The Judges' Pit

The law was the cornerstone of Qin's empire, so it is no surprise that in both life and the afterlife, judges are represented. Their pit, discovered in 2000, lies southwest of the mausoleum and contains 12 statues. Eight of the figures are civil servants, and are thought by some to be judges. They wear on their belts a knife and a sharpening stone. In Qin's time, the knife was the equivalent of an eraser. Since paper was yet to be invented, records were copied onto bamboo scrolls, and errors were removed by shaving the characters from the scrolls. The remaining four figures in this pit are the chariot drivers. They grip the reins of their horses with both hands in the same sure way that Qin's judges would grasp the reins of the law firmly.

The Armor Pit

This 13,600 square meter pit was discovered in 1997 just 200

meters east of Qin's tomb. It is the largest pit yet to be discovered within the inner walls of the tomb. When the pit was opened, what greeted the researchers resembled nothing so much as a giant jig-saw puzzle. The floor of the pit was littered with the tiles of 120 suits of armor and 90 stone helmets. These suits had originally all been suspended from the ceiling, so that the pit would have resembled a giant wardrobe. Over time, however, with the collapse of the timbers and walls, the armor fell to the floor.

Fortunately, the individual tiles of the armor remain intact. The armor appears not to have been any more functional than the warriors were, as it was made of small tiles of dark gray, fine-grained limestone which was both heavy and easily broken. The tiles had tiny holes where copper wires were inserted to join each one, so that the finished suit resembled the scales covering a fish. The one suit of armor that has been restored is made of over 800 such tiles. It weighs 18 kilograms, and the helmet over 3 kilograms, too heavy to be practical.

To reclaim the armor, archeologists first labeled each piece where it lay on the ground. It was a German expert who determined that they could coat the tiles with a plastic that would keep them together while they were removed, but which would later evaporate. When the workers examined the pieces, they were amazed to discover how thin each tile was – between 3 and 5 millimeters. Making stone that thin would be difficult even today, but 2,200 years ago…and the pit contains nearly 100,000 such pieces.

There is a larger set of tiles, each measuring 7 cm by 14 cm and covering 1.8 meters, likely the armor for a battle horse. It had been previously thought that such armor was invented during the Eastern Han Dynasty, but this discovery moves the development forward in time by 400 years.

Stable Pits

The stable pits are located 350 meters east of the mausoleum, at Shang Jiao Cun. There are 98 pits with horses. In front of the horses are pottery jars, plates, basins – some with hay still in them, and lamps. The pits are said to be modeled on Qin's imperial stables.

Bronze Chariots and Horses

The discovery of the pit containing the bronze chariots and horses in December 1980 again brought Xi'an to the front pages of the world. This pit is located just 20 meters west of Qin's tomb, and nearly 8 meters below the present ground level. Originally the chariots and horses had been enshrouded in a large wooden coffin, but with time the wood rotted, and the weight of earth crushed the chariots and horses into many thousands of smaller pieces. It took archeologists 8 years of careful, tedious work to reassemble the chariots which are now on display in the museum.

The chariots were perfect copies, but half the size of the real ones Qin used in his inspections of his kingdom. There are two different types of chariot, named "High Chariot" and "Comfortable Chariot". Each one has a single axle and was drawn by a team of four horses. The High Chariot, 2.57 meters long and weighing 1,061 kg, was both a battle chariot and an inspection chariot. On the outer left side, a quiver holds 12 bronze arrows; on the inside right, a bronze shield. Both sides of the shield are painted with a colorful cloud pattern. The shield is the most complete one discovered from the Qin dynasty. The driver, looking prudently humble (as he should considering the weight of his burden), is standing. He is armed with a long sword, and his uniform is decorated with a jade ring at the front. His shoes curve delicately upward at their tips. He holds the reins in hands that are very lifelike.

The Comfortable Chariot is, as you would imagine, larger, about 3.17 meters, and weighs about 1,241 kg. It is divided into two compartments, with the front one for the driver, who is seated. He wears the same uniform as the driver of the High Chariot, but his expression is more humble. The back chamber is more spacious (0.78 m by 0.88 m) on this chariot, and the window panels of the rear compartment are diamond-shaped for ventilation – an early form of air conditioning. The carriage walls are bronze, and are about 4 mm thick, though in some places they are as thin as 2 mm. The walls are covered by a turtle shell canopy.

These chariots are the most deluxe, most realistic, and best preserved bronze chariots and horses to be found so far. Presumably these models, ornately decorated with gold and silver, would transport Qin's soul on its inspection tours of the afterlife. (See Chapter 11 for Maurice Cotterell's quite different interpretation of these vehicles.)

Comfortable Chariot

A Stairway to Heaven

Archeologists, working for nearly five years and using radar and remote sensing equipment, have recently uncovered a 30 meter high, pyramid-shaped room that was built on top of Qin's Mausoleum. Ladder-like steps lead from the burial site into the pyramid, leading to the speculation that the pyramid was built as a passageway for Qin's soul into the afterlife. Archeologist Liu Qingzhu of the Chinese Academy of Social Sciences, suggests that while the structure is unlike any other Chinese tomb, it is fitting for Qin, who was unlike any other emperor. As pyramids have long been shrouded in mystery, and have a long association with burials, this discovery reminds us that Qin was an enigma in life and remains so in death.

CHAPTER 6

Inside the Main Pits

The World Heritage site of the Museum of the Terra Cotta Warriors is situated 1.5 kilometers due east of Qin's tomb at Li Shan. Although there are many theories about why Qin created the warriors, the most popular one is this: it was a matter of control. He had had absolute control over life on earth, but death – his own, that is – was an unknown. Certainly he was no stranger to the *idea* of death as it had been experienced by so many others under his command. It is thought that he believed or hoped that with the terra cotta army he would be able to continue that control in the afterlife.

The museum contains four pits, which together are arranged in a rectangular grouping. The four pits must be seen together as a complete story in order to be understood and appreciated. The figures are not just a random collection of soldiers. Rather, they represent a complete military fighting unit typical of the ones that Qin had used to meld the Warring States into one country. Pit 1, itself a rectangle, forms a base for Pits 2, 3, and 4 which all lie to the north of Pit 1.

Pits 1, 2, and 3 each contain the terracotta figures of soldiers, chariots and horses, which were originally located between five and seven meters below ground level. The pits were a massive undertaking and were obviously intended to last for "ten thousand years". They were constructed of strong green-gray or brown-red bricks of varying sizes

Terra cotta warriors see the light of day

(the larger ones were 42 cm by 19.5 cm by 9.5 cm; the smaller were 23 cm) that were fired at high temperatures (between 950 and 1000 degrees Celsius). Over a quarter of a million bricks were used to make the flooring for all 3 pits.

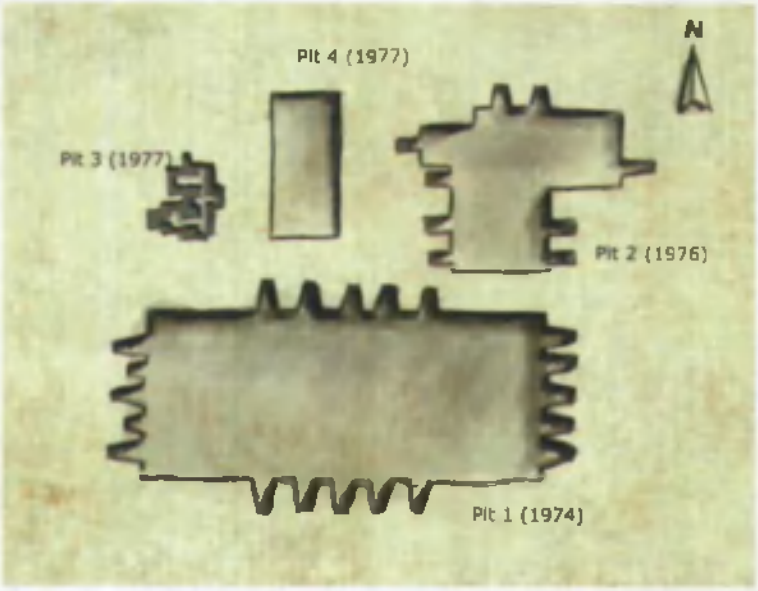
Pit 1

Pit 1, the largest of the pits, is a rectangle measuring 230 meters by 62 meters. It contains possibly more than 6,000 soldiers in 11 rows.

The soldiers are in battle formation. The rows are a combination of 11 blocks of fighting units. Nine rows of soldiers four abreast in battle attire face east, their backs to Qin's tomb. There was a good reason for this arrangement. Since the state of Qin occupied the western edge of China, Qin reasoned that any threat to him would probably originate from the east. The army is, therefore, positioned as a real army would have been. (And indeed it was from the east that Qin's real troops were at last attacked and defeated.)

The rows of soldiers are separated by walls of earth, matting, and timbers. The two rows on the north and south sides of the rectangle are narrower, just two soldiers wide, with the soldiers in the outermost rows facing not east but north and south, as if guarding the flanks of the troops.

At the eastern edge of Pit 1, the main force is spearheaded by



Graphic showing the relative locations of the Qin Mausoleum and the pits

Vanguards from Pit 1, leading the attack into the afterlife

a vanguard made up of three rows of 68 soldiers, for a total of 204 warriors. These fighters are neither heavily armed nor armored. The military strategy was to place the bravest, brightest and fastest warriors in the front, armed with long range weapons like bows or crossbows. These troops could move swiftly to lead an attack and break through into enemy blocks. They were fast enough that they could also capture horses by running them down.

Similarly, at the western end of the rectangle is the rearguard, three rows of troops containing about the same number of warriors as the

vanguards. The exact number and weapons of these rearguard troops are unknown, but it is clear there were three rows, with the warriors in the inner two rows facing east but with those in the outer row facing west, guarding the rear flank. Their clothing too was different from that of the vanguards, and unlike the vanguards, they all wore armor and it is also thought they would have been heavily armed.

The warriors in Pit 1 belong to one of 11 fighting blocks, with each block containing a slightly different formation. Block 1 on the south side, for example, includes the two rows on the south side and the two rows next to them. Block 11, at the north side of the pit, is the same in mirror image.

Block 2 contains one chariot and four horses, with three soldiers in the chariot. The chariot is supported by infantry attached to it. The chariots each contained one driver, a middle-ranking officer in the center, and on his right, a guard. Chariots with higher ranking officers carried

Restored kneeling archer, showing remains of the original colors

Assembled torso pieces

a bell and a drum to signal the troops. Blocks 2, 3, 4, 5, 7, 9 and 10 are all similar, with each having a combination of chariots and armored infantry in front of the chariot with soldiers behind the chariot. Typically in a block there would be 56 soldiers, 32 unarmored and 24 with heavy armor. Blocks 6 and 8 contain 60 infantry, 28 armored and 32 armored, plus cavalry. In each block, the soldier whose responsibility was to lead was identified by a special small hat.

From an overview of Pit 1, we can see that the entire perimeter of the army is protected by the archers. The main force is facing east, but the other three outer rows each face north, south and west respectively. We can also see that the infantry and the cavalry were the backbone of the army because chariots were considered slower and more cumbersome, and subject to the vagaries of uneven ground surfaces that were often a part of the battlefield. We can see, too, a structural balance both horizontally and vertically in the deployment of the terracotta troops. Looking from east to west, we see the troops arranged with alternating configurations of infantry and chariots. Looking from north to south at the arrangement of the nine central rows we see this arrangement:

chariot
chariot
infantry
chariot
infantry
chariot
infantry
chariot
chariot

This troop deployment is perfectly symmetrical, one half like a mirror image of the other. Within each row, each line forms part of the whole, like the strands of a rope. Furthermore, it is a careful defensive arrangement because each flank is guarded. And it is also flexible, able to

shift its direction of attack in any direction at a signal.

But it has been suggested that it was not an army designed for fighting. Qin's troops were typically mustered in one of three formations: there were standby troops; moving formations; and fighting formations. It is thought that this was a standby formation. The troops are ready, awaiting the call to battle from their emperor.

Pit 2

Pit 2, a 6,000 square meter pit 20 meters north of the eastern end of Pit 1, was discovered in 1976. The pit is a north-south rectangle with an extension on its upper east side, like an L turned upside down. Its over 1,300 terra cotta figures are positioned in four special military arrangements as if to protect the north flank of Pit 1.

1. In the northeast extension, a block of 352 archers all face east: 160 kneel in four columns of two; they are flanked north and south by two columns of 96 standing archers. This unit is protected by a row of 30 archers along the east flank, behind which is a row of 30 armored warriors. In battle, archers would alternate between standing and kneeling positions as they fired and reloaded their crossbows, so that at any time there was a withering rain of arrows. This was called the "clouds formation" perhaps because the deadly rain of arrows was seamless and continuous.

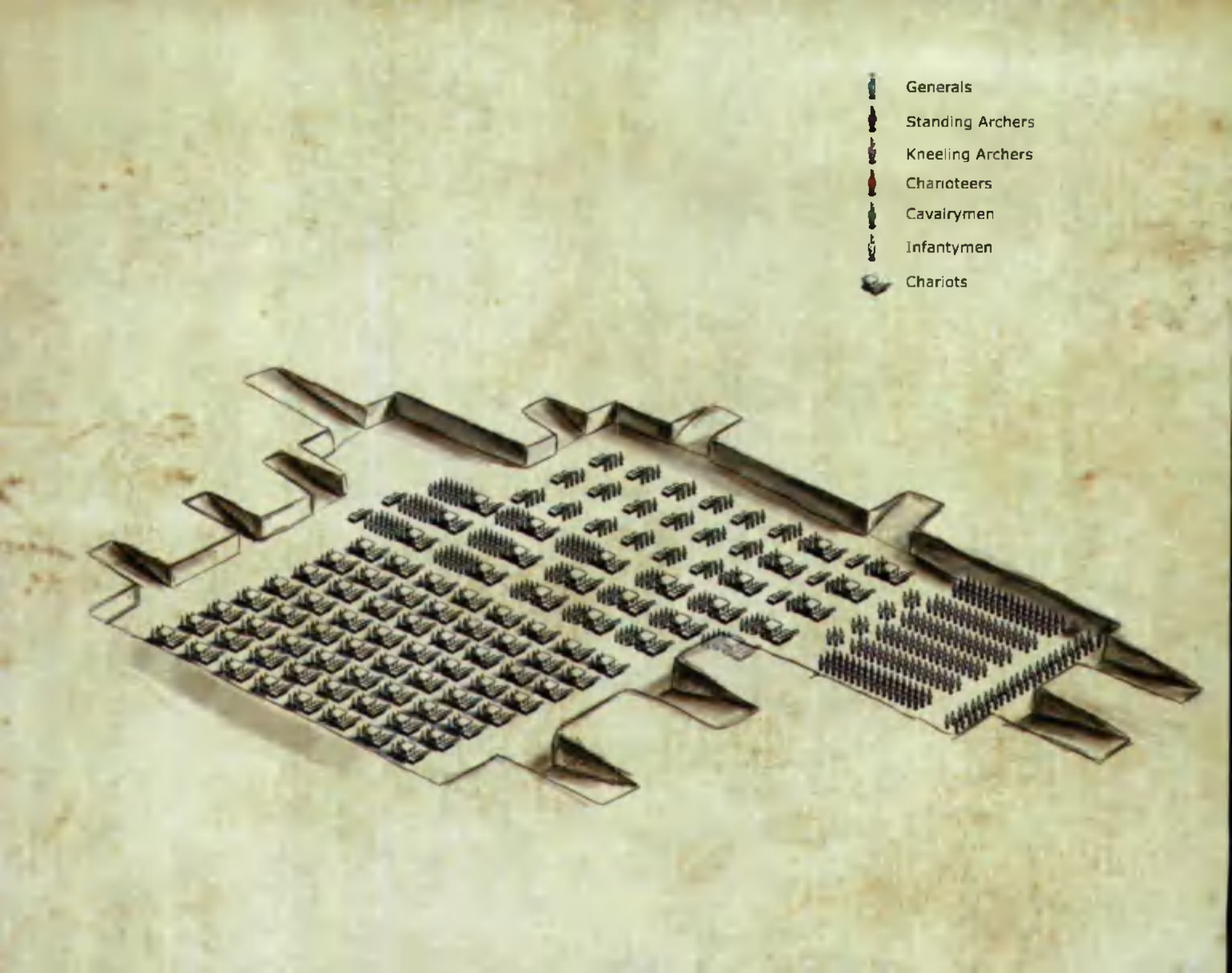
2. Directly behind the archers and also facing east are the three rows of cavalry, with eight teams of four horses and riders in each row. Each of the 96 cavalrymen stands in front of his saddled war horse, the reins in his right hand, his bow in his left. War chariots lead the cavalry. It is thought that the 96 cavalry would constitute a medium-sized team.

3. Immediately south of the cavalry are the combined units of armored warriors and war chariots. The armored warriors supported

Chariot with 3 riders

the chariots, and where the terrain was uneven, were able to move more quickly than the chariots.

4. The rest of Pit 2 is filled with 64 war chariots. Though the war chariot gradually fell out of favor during the Western Han dynasty, it was important in Qin's day, and as with everything else at that time, regulations governing it were clearly defined. Each chariot was pulled by a team of four horses connected by a total of six reins. The two center horses were joined by a single rein so they acted as one horse. The two side horses were separated from the center pair by a shaft attached to the harnesses that prevented the flanking horses from encroaching on the middle ones. The driver, who held three reins in each hand, was also a junior officer, and he was flanked by his commander on the left, and a


Generals
Standing Archers
Kneeling Archers
Charioteers
Cavalrymen
Infantymen
Chariots

guard on his right, each bearing weapons. It was the duty of the soldier on the right to protect the senior officer – and even to push the chariot if it became stuck. If the officer was wounded, the junior officer/driver assumed command.

The chariots of Pit 2 are different from those in Pits 1 and 3 in that most of those in Pit 2 have no infantry attached to them. There are eight columns of eight chariots. This fact gives rise to the theory that Pit 2 is also a standby army. Typically in battle, each chariot was paired with another. The two would travel together in a pincer movement at the head of cavalry that would ride between the two chariots.

It is unlikely that 64 chariots would roll down the ramps and enter a battle as a group. Pit 2 also contains two chariots with only two occupants: a driver and a guard. There is no officer because these chariots were probably intended for back-up in the event a chariot was damaged.

Lead chariots had a drum and a bell. The drum meant advance; the pace of the advance controlled by the beating of the drum. The bell told the soldiers to cease fighting; and if sounded repeatedly, to retreat. As well, a flag mounted on a tall pole was used to signal direction. Directing the flag to the left would send the army in that direction. It is easy to imagine how formidable Qin's attack forces were, with the onslaught of the swift and brave vanguard troops, the shouting of the warriors, and the thunder of the drums.

The formations in Pit 2 have been given a number of different names: 1. Camp Formation; 2. the four-animal formation; 3. the L-shaped formation. In the "Camp Formation", the pit is seen as a large army camp with crossbow, infantry, cavalry, and chariot components. It is thought that these four forces are not completely formed; rather that what they represent is more like the camp of a standby army.

Those who prefer the term "four-animal formation" see Pit 2 as composed of four small blocks, representing the four elements of the

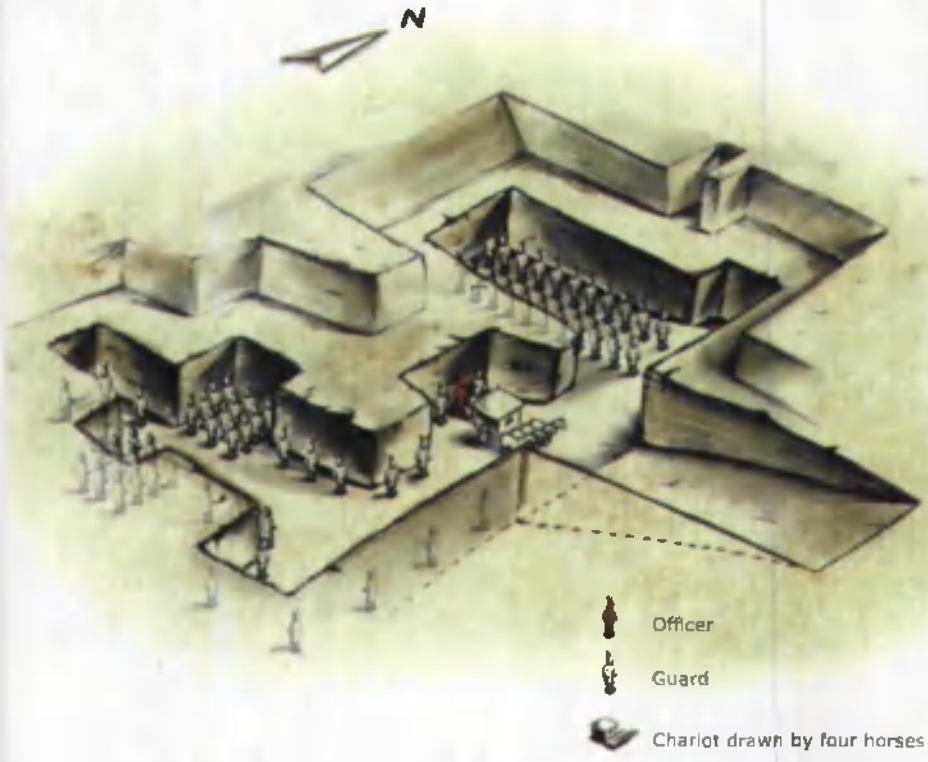
ancients: red bird (fire), turtle (water), green dragon (wood) and white tiger (metal). Thus the red bird is the crossbow formation in Unit 1. The chariot formation in Unit 2 is the white tiger formation. The chariot, infantry and cavalry combinations in Unit 3 are the turtle formation, and the cavalry in Unit 4 is the green dragon formation. The four formations are intended to function independently, but can be united if the need arises. During a battle, the red bird uses bows and arrows, then green dragon and white tiger flank out together from left and right while the turtle formation occupies the rear for support.

While the four-animal formation is the most interesting metaphorical interpretation, most experts refer to Pit 2 as the L-shaped formation. Indeed, that is the shape of the enclosure, and it is reasonable to assume that Pit 2 was designed to fit the formation, not the other way around. No matter what name you give the formation, it is clear that the combination of chariot, infantry, and cavalry constituted a fighting force that was both flexible and fluid.

Pit 3

The smallest of the pits, Pit 3 was also discovered in 1976. Situated due west of Pit 2 and north of Pit 1, it resembles a drawn bow aiming eastward. The pit was the command center for the combined forces found in Pits 1 and 2. As such, its position is made secure by the forces to both the south and the east of it. At the east side of the pit, a sloping access road leads to a chariot, but this one has four armored officers and was probably not for fighting so much as for transporting officials. The chariot is ornately painted and canopied, respecting the higher ranking of the officials. It is also thought that this chariot would be used to transmit a declaration of war.

To the north and south of the command chariot are 64 fully armed



Pit 3, the Command Center

figures. These soldiers are not facing east; rather they have their backs to the wall in the manner of palace guards. Even their weapons are different. One weapon discovered only in Pit 3 was the "shu", believed to be used by honor guards. A broken deer horn and the remains of animal bones were likely ritual objects used in prayer or to prophecy the outcome of battles. Finally, door handles and rings have caused some to conclude that the center contained a separate area curtained off for the generals. The name "jun mu" for the command center literally means "army curtain". In Qin's day, the general had a camp house, a "jun mu", so it is likely that Pit 3 housed the command center and the general.

Pit 4

Pit 4 was discovered in the summer of 1976. It is located north of Pit 1 and between Pits 2 and 3. It is empty, and the conclusions that are drawn about it suggest that it was constructed at the same time as the mausoleum but that the revolution which overthrew Er Shi's short lived dynasty put an end to the work just as it did to the Qin dynasty. Some think that the pit would have contained the central army. They reason that Pit 1 occupied the right position, Pit 2 the left, and Pit 3 contained the command headquarters. It is therefore natural to conclude, they suggest, that Pit 4 would have been created for a central army.

Senior officer

The Chain of Command in Qin's Armies

Officers

In real life, Qin's armies in the field were controlled by senior, middle-ranking and junior officers. Terra cotta figures of these officers are also found in the pits. Officers were taller than other soldiers and their armor was more ornate. Their terracotta figures show as well that they were indeed colorful figures – though the paint has disintegrated with time and exposure

to air. Their outer coat was dark purple, the robe beneath was vermilion, and the pants green. The reconstructed general from Pit 2 is 1.97 meters tall. His right hand clasps his left, and he has a bearing of calm authority. He wears long pants, and is protected at the chest, back, and shoulders by fish-scale armor which, too, is painted with colorful patterns. Eight knots of ribbon (three in front, two on the shoulders, and three in the back) decorate the armor. His hair is worn in a double topknot that is covered neatly with a hat, and the grooming of his beard is meticulous, adding to his demeanor of authority.

Middle-Ranking Officers

Only six middle-ranking officers have been discovered so far. They were distinguished by three different types of uniform. One type, found among the archers in Pit 2, wore long trousers and front armor. His right hand is clenched into a fist, and he is standing next to a senior officer.

The second type of middle ranking officers, of which there are four in Pit 1, all wear long dress and possess the same armor found among the infantry. The officers wear their hair in two topknots, and also wear a hat. Their right fist is closed, and in the left hand is a sword.

Standing archer

The driver of the chariot

The third type, of which there is one in Pit 1, is among the vanguard forces. He has no armor, but is distinguished by his hat.

The middle-ranking officers wore long green coats and red pants. Both collar and cuffs were decorated in red trim, and his flat hat and shoes were black. His chest armor is fastened across his back by straps. An ornate scarf around his neck is possibly a sign of his rank.

Junior officers, of which there are 29, have long coats, but their armor is less grand than that of the middle-ranking officers. Their trousers are short and hair is worn in a single topknot. They carry a sword in their left hand, and a spear in their right.

A second type of junior officer, of which there are four, also wear long coats, and have single topknots, but they carry a spear in their right hand, and wear no armor.

Infantry

The infantry was of two types: Lightly Armed and Heavily Armed. All together 433 lightly armed infantry have been recovered, 397 in Pit 1 and 36 in Pit 2. There are three types:

1. Archers. The 308 archers have short pants, leather belts, buckles, and no hats. Their hair is in a single topknot on the right side of their head, and their right hand is holding an arrow. Each warrior would carry about 100 arrows.

2. Spear bearers. The 88 spear bearers have the same uniform, but their hand position is different.

3. Standing archers (37). These warriors wore unarmored red robes fastened at the waist with a belt, short green pants leading to white shin guards and short boots. Their hair was coiled into a topknot on the right side of the top of their head. The feet of the standing archers are in the "ding" position (represented by the Chinese character "ding", meaning pot) with the left foot one-half step away and at right angles to the right

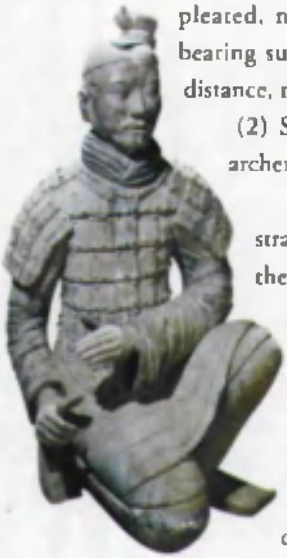
foot to provide stability in the drawing of a bow. They are erect, straight-backed, with their weight on their heels.

Heavily Armed Infantry with Armor

There are 1, 300 heavily armed infantry, mostly in Pit 1. According to their clothing, there are three types of these:

1. Round topknot

(1) Kneeling Archers. These warriors are shorter (1.2 meters) and wear a green battle coat and blue pants which appear to be tucked into purple leggings. The detail of this warrior is impressive. His hair is plaited and coiled into a bun which is secured by a vermilion ribbon on the left side of the top of his head. Even the soles of his shoes are textured. Each archer is protected by armor in the front, back, and at the shoulders. For stability, his two feet and his right knee form a triangle. His robe is pleated, making it easier for the archer to kneel. His bearing suggests discipline as he stares serenely into the distance, ready to battle a new enemy, the unknown.



Kneeling archer

(2) Standing Archers accompanied the kneeling archers. In battle they would alternate positions.

(3) Spear Bearers. These warriors all stand straight, with their feet in a position represented by the Chinese character "ba", meaning eight. They are like towers, stable and strong. Two of the warriors at the east end of Pit 1 are leaning forward on their left foot, as if fighting.

2. These have smaller topknots, for the wearing of a helmet. They stand very straight.

3. These wear a type of cloth head covering.

The archers

Bai Jiangong, in "The Talks of the Lightly and Heavily Armed Warriors of Qin", suggests that it was the responsibility of the lightly-armed warriors to assist the heavily armed ones, but that the heavily-armed warriors were the major power of the army and occupied a higher position in the military. The lightly-armed warriors were an informal army and were comprised of soldiers from the country, whereas the heavily-armed warriors were professional soldiers, trained in combat.

Independent Infantry

Some troops were intended to function independently. In Pit 1, there are 536 of these independent warriors. They are the vanguards located in the east end of Blocks 1, 4, 6, 8, and 11, and the north- and south-facing side guards in Blocks 1 and 11. Blocks 4, 6, and 8 are components of the main body of the army. In Pit 2, the 332 independent warriors are at the

east end of the pit. In Pit 3, the 64 independents are the advance guards at the east ends of the two side rooms.

Infantry Attached to Chariots

Most chariots have eight infantry attached to them, so that the infantry and the three in the chariot formed a group of eleven. The driver of the chariot wore a long coat. His hair, in a topknot in the center of his head, was covered by a headpiece. He was less able to defend himself because his hands were occupied with the holding of the reins, so his armor gave him important extra protection for his arms, hands, neck, and upper body. The chariot driver is flanked by two soldiers: the one on his right wears red and has a topknot on the right side of the top of his head; the one on the left wears green, and has a topknot on the left side of the top of his head.

The attacking chariot is a picture of discipline and balance: Every detail contributes to this picture, from the position of the hair topknots (the soldier on the right has a topknot on the left side of his head; the soldier in the middle has a double topknot that is centered on his head; the one on the left has a topknot on the right side of his head), to the colors and hand positions of each of the warriors. Qin's army was indeed a sight to behold.

Cavalry

The use of horses gave an army increased speed and agility. Cavalry units have existed from as far back as 636 BC with Qin Mu Gong, from the grasslands of the northwest, who won many battles with cavalry during the Warring States Period. It is therefore easy to appreciate why the use of cavalry evolved during the Qin dynasty. This evolution is shown by the figures in Pit 2. There are 116 cavalry horses, each a male

Remains of the chariot

standing 1.72 meters to the top of its head. In front of each horse is its rider, who stands 1.8 meters tall with one hand on the reins of the horse and the other holding his bow. The rider wears short, dark-brown tight-fitting armor over his green, knee-length robe and a small, tight-fitting cap fastened under his chin.

Horses for the cavalry were provided by local governments. As with everything else in the Qin dynasty, the rules governing their provision were clear. If it turned out that the horse was not properly trained, the local government would be punished and the trainer disgraced and fired.

In building a cavalry, the first step was to select the horse, then to outfit it. Saddles may date to the time of Confucius, but there is insufficient proof for this view. Clearly, the horses in Qin's mausoleum are equipped with leather saddles. It is interesting that the saddles used after the Qin dynasty were less sophisticated than the ones on the terra cotta horses.

After the horse had been selected and outfitted, a rider was matched to him. These men were among the cream of the military: they were soldiers under 40 who were at least 1.73 meters tall, were strong and fast, brave and intelligent, were good archers and could control a horse as it forded rivers. The cavalry recruits often came from the farms. By the time they were 17, they had begun their training at the local level in riding techniques and archery.

Cavalryman

Some Interesting Facts

* Approximately 8,000 warriors are estimated to be at Xi'an (some say exactly 8,099).

* About 2,000 warriors from Pit 1 have been restored; 160 from Pit 2; and 64 from Pit 3, a total of 1,924.

* Each of the warriors is different, an individual. No two faces are alike, though the face shapes are said to represent all the different ethnic groups that comprised the new China. Faces also show different personalities and attitudes: some look brave and tough; some, gentle; some seem confident; others obedient. Some are intellectuals, others crafty.

* Many of the artisans signed their work, and to date as many as 80 different such signatures have been identified: Gong Zhang and Gong Mo are two of them.

* The craftsmen also dated their work by using the name of the Emperor. Warriors with dates Shi Huang 15, 16, 17, 18 and 19 would probably have been made between 221 and 217 BC. Swords labeled Lv Buwei 3, 4, 5, and 7 have also been discovered. A sword dated Lv Buwei 7 was likely made in 240 BC, 7 years after Qin became king, but 2 years before he ascended the throne and removed Lv Buwei from his office of Prime Minister.

* Cavalry costumes were a blend of the Qin and Hu peoples. The Qin did not originally have horses and had to import them from the Mongols; they also brought in Mongols to train the Qin in horsemanship.

* It has been said that the saddle was a development of the Han dynasty, but the terra cotta evidence says it is a Qin invention.

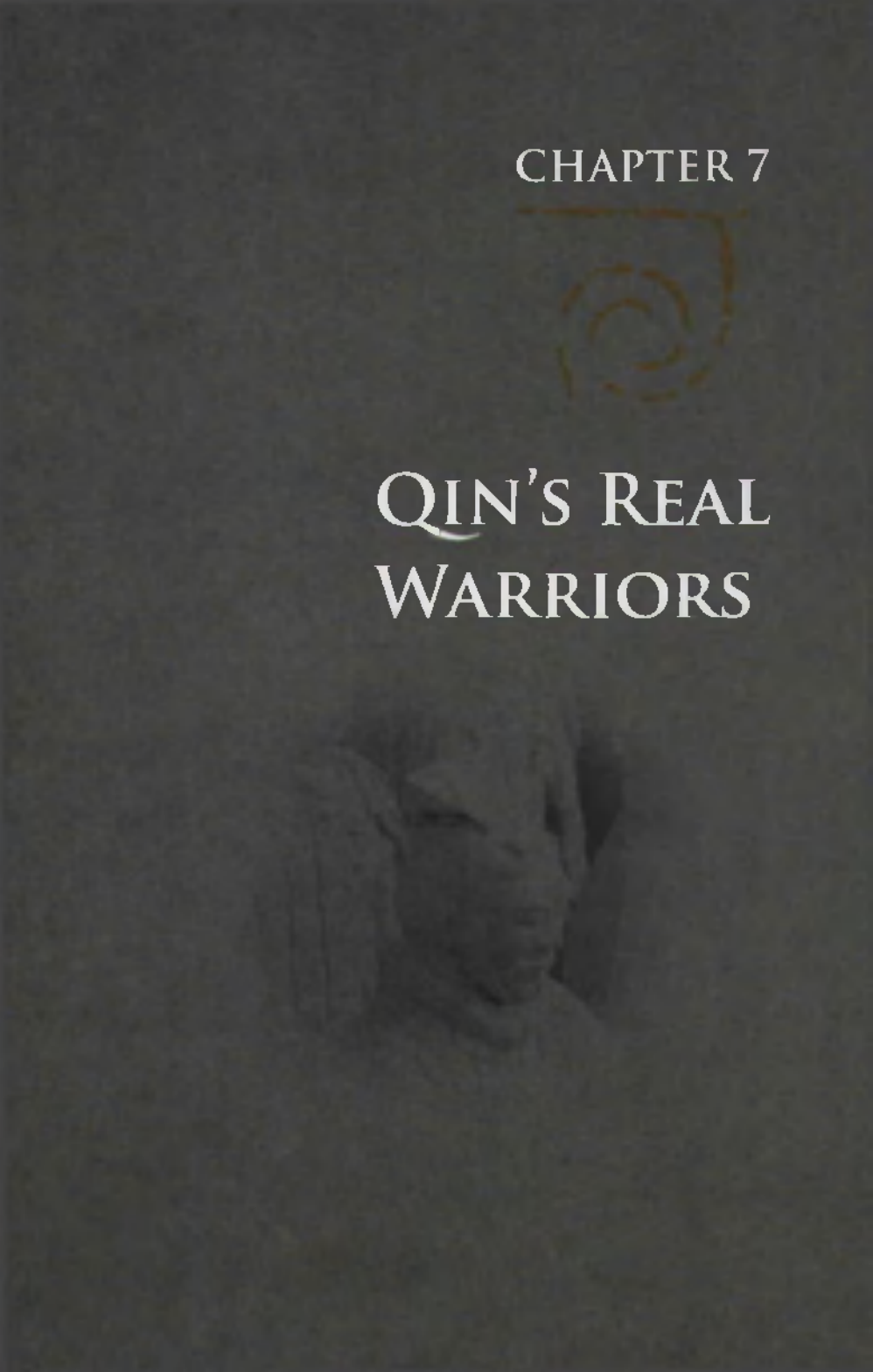
* Control of horses first began with the use of a neck rope. Later, the Chinese changed from a neck rope to a chest rope to enable the horses to breathe more freely. From the chest rope, the use of mouth bits and whips, which we see in the museum, emerged.

* Chariots were built with real jewelry (pearls, gold and silver decorations).

* In the west, chrome plating would not be developed until 1937, but the swords of Qin's warriors have kept their sharp edges for over 2,000 years because these weapons were chrome plated.

CHAPTER 7

Qin's Real Warriors



At their peak, Qin's armies totaled in the millions (one account suggests that Meng Tian led a force of three million to secure the Great Wall). What were the procedures for recruiting, equipping and training such a vast force? The kingdom of Qin employed a military system based on universal conscription. Men were drafted for two years, serving as infantry, cavalry, or sailors according to their background. Most conscripts seem to have served their time within their native province or prefecture, whose governor or administrator was also their commander in case of invasion. There was also a small elite corps of professional soldiers

Infantry with different facial expressions

stationed at the capital or on the northern frontier.

It was a system that would be continued into the Western Han dynasty. It was Emperor Guangwu, founder of the Eastern Han, who ended conscription and established a relative peace in the provinces. Peace was accompanied by increasing numbers of landowners, however, and with this landownership came the formation of private armies. It was a path that led eventually to a nation of warlords, a condition that persisted into the twentieth century.

In 770 BC the State of Qin fought its battles only with infantry. It is believed that the cavalry came into existence in 636 BC, during the Spring and Autumn Period. Between 659 BC and 621 BC Qin Mu Gong had 500 chariots, 2,000 riders and 50,000 infantry, and by 251 BC, the Qin army had thousands of chariots, tens of thousands of cavalry and infantry numbering in the millions, and was a force to be reckoned with.

Qin's success was a matter of using the varied abilities of the warriors.

> The clever combatant looks to the effect of combined energy, and does not require too much from individuals. Hence his ability to pick out the right men and utilize their combined energy. When he utilizes combined energy, his fighting men become like unto rolling logs or stones. For it is the nature of a log or stone...if round-shaped, to go rolling down.
>
> Sun Zi, *The Art of War*

Infantry developed rapidly in Qin because frequent and longer battles created a need for more soldiers. As a result, Qin at times absorbed the newly-conquered armies into its own. Whereas fighting at one time had been done with chariots, the combination of infantry, chariots and cavalry created a need for even more infantry. By the middle of the Western Han dynasty, however, chariots would no longer be used, being supplanted by the independent infantry and the cavalry.

The recruits for the army were mainly farmers, men between 17 and 60. Given the fact that 60- year-olds were considered fit to serve in

the army, it would appear that people at that time must have been very healthy and that 60-year-old men were blessed with strength and vitality. It has also been suggested that warriors from the north of China were more desirable, being physically stronger and bigger, and more aggressive, whereas those from the south were, in comparison, more scholarly. As well as farmers, the army included slaves, merchants, landowners, and nobles, so that Qin's army was a cross section of all social classes.

In the Zhou dynasty, soldiers brought their own weapons to battle. The Qin government, by contrast, provided the troops with weapons and armor from its central store rooms, similar to practices followed today. Qin's soldiers still depended on help from home, however. Troops provided their own clothing, and two letters found carved in wood in one of the tombs were requests from two brothers seeking money from home for clothing: "Please give me money, mom, quick, quick, quick..."

To provide consistency for this vital military tool, horses were supplied and trained by the government.

The Qin government also recognized the importance of a proper and controlled food supply. There was a saying, "Food will go before the army." Strict rules governed the distribution of food and anyone breaking these rules was punished. A certificate was needed to collect food. It was illegal to sell government food privately, nor were locals allowed to sell food to the army. Food could not be stolen, and visitors to a camp were even required to bring their own food.

As well, a clearly defined system of incentives governed fighting. Rewards were used to motivate the troops. Giving a sinister twist of meaning to the expression "getting ahead", if a soldier took the head of an enemy officer, he was promoted one level and given 100 mu of land for farming and 9 mu for a house. An officer did not himself take heads, but his head count was computed as the total head count of his troops.

Each officer was rewarded according to the total number of heads taken. If the officer's unit achieved beyond its quota, the officer

was promoted. Failure to meet a quota meant either no reward, or punishment. Anyone unfortunate enough to be killed in battle, however, would leave behind fortunate relatives as he would be given a title of nobility and a reward. Average efforts went unrewarded, but any extra contribution was somehow recognized with awards if not titles. Moreover, slaves could earn their freedom by the taking of a head, and could even become a common citizen.

Just as was the situation governing the lives of ordinary citizens, for the military, punishments were also clear. Anyone cheating to earn nobility became himself a slave or received some other punishment. Anyone failing to report to his station was punished and could be used as a human shield. Anyone leaving a posting without properly reporting his departure was punished by having two pieces of armor removed from his protection. Accuracy in reporting information was also demanded. Anyone claiming to have conquered an enemy when they had not done so was punished by the loss of armor. Even expressing open admiration for the enemy was forbidden, and soldiers who were deemed to be frightening their fellow soldiers by praising the strength or tactics of the enemy were executed. Soldiers who were captured or who vanished were considered to be slaves.

Often, it was not just the soldier who was punished, but his unit as well. As a result of both incentives and threats, soldiers were driven to fight to the death. Families would even encourage their sons not to return from battle but to die bravely.

CHAPTER 8

Weapons of War

Qin's army went to war with an impressive array of weapons. To date, well over ten thousand of the various weapons have been unearthed from the pits, including ten thousand arrowheads. These discoveries have provided history with new information and insights into the Qin dynasty and the history of the development of weapons in China.

In the Qin and Han conscript armies, infantry were armed with spears, bows, and in particular crossbows, a weapon for which the Chinese technology remained superior to most other nations. Even though infantry bearing shields, swords and spears existed, there is no trace of either a "phalanx" or a "legion" style of infantry fighting.

Most armor was of the scale variety, in which overlapping leather or metal plates of varying size are sewn onto a cloth background. Such armor is relatively light and flexible, but it is so at the expense of protective strength. There are few examples of the larger plate armor seen in the west.

Before the time of Shang Yang, weapons were manufactured and managed by the nobles. Shang Yang removed control of weapons from the nobility and placed it into the hands of the central government. To strengthen government control and prevent the weapons from remaining in the hands of one group, he separated the manufacture, delivery, and use of the weapons into three departments and made it illegal to keep weapons for private use. The inspection and supervision of weapons

became the direct responsibility of the Prime Minister. Weapons could only be made with an order from the central government, though local governments had a limited authority to request weapons. Quality was assured as well because manufacturers were required to stamp their names on each weapon made.

These records stamped on the weapons provide history with some added biographical data from the past, tersely stamped in bronze on the swords, pis and wu hooks. Although the names of just 16 weapons makers appear on the various weapons in the mausoleum, there must have been many more involved in their manufacture as the industry recruited both slaves and free people to provide weapons for over a million soldiers. Using the records stamped on the armaments, we can even trace the rise and fall of Lv Buwei as Prime Minister as his name is stamped on weapons for only the ten years that he was Prime Minister.

We learn that in 245 BC, Shi Gong had been a sword maker, but by 232 BC, he was promoted to the rank of Master. We can also see that another master, Ji Shi, worked from the 5th to the 8th year of Qin Shi Huang's reign and then was promoted to be in charge of all the masters. He remained at that post until, according to the inscriptions, at least the 14th year of Qin's reign. The evidence from the weapons, then, is that persons were promoted based on talent and skill. The hapless Diao, for example, made weapons for 16 years with no apparent promotion.

So many weapons were needed, with the added requirement that all weapons of a certain type were more or less the same. From this situation, we can infer the existence of a sophisticated industry with research and development units and manufacturing units. The trigger mechanism for the crossbow, for example, was complicated to make as it consisted of four parts. It could have been made simpler, but doing so would mean that the bow would be more difficult to fire.

The Bronze and Iron Ages

Bronze is the traditional name for a broad range of alloys of copper. It is usually copper with zinc and tin but it is not limited to those metals. First used during the Bronze Age, to which it gave its name, bronze-made tools, weapons and armor were either harder or more durable than their stone and copper predecessors. During the Bronze Age, arsenic was often included in the bronze (mostly as an impurity), which made the alloy harder still. The earliest copper alloys date to the late 4th millennium BC.

Bronze was also stronger than iron, another common metal of the era. Quality tempered steels would not be available for two thousand years, but the invention of steel hardened with carbon would contribute to the onset of the Iron Age. The Bronze Age gave way to the Iron Age as the shipping of tin around the Mediterranean ended during the major population migrations around 1200 – 1100 BC, which dramatically limited supplies of tin and raised its price. Bronze was still used to a considerable extent during the Iron Age, but for many purposes the weaker iron was sufficiently strong to serve in its place. As an example, Roman officers were equipped with bronze swords while foot soldiers had to make do with iron blades.

Only 25 iron weapons have been unearthed in the mausoleum: 9 swords, 2 ji, 1 spear, 2 shu, 3 zhui, 2 daggers, 2 arrowheads and 4 arrows with iron shafts and bronze heads. Some have suggested that the world was already switching to iron because of its availability, and that the bronze weapons in the mausoleum were for display purposes only, but that theory does not seem to be borne out by the evidence. It is true that the states of Chu and Yan were more advanced in their steel making, but they could not produce enough weapons to satisfy the armies of Qin. And an examination of 202 tombs at Chang Shan has turned up 182 weapons, only 8 of which were iron; a tomb in Jianglin at Yu Tai Shan contained 518 weapons, none iron. It was during the Han dynasty that

the techniques for working with iron were improved and iron replaced bronze for weapons.

The Art of Armament

The armament makers of Qin made three different classes of weapons: short weapons, long weapons, and long range weapons.

Short Weapons

Short weapons were intended for close-in fighting, or hand-to-hand combat, when you could smell the breath of your enemy. There were three: the sword, the dagger, and the Wu Hook. Swords had the highest ranking in ancient China, and were carried by generals and other officers. Moreover, Qin swords were longer than others, giving these fighters added reach. About 17 swords have been recovered from the pits to date. These are between 81 and 94.4 cm. The sword was mostly copper (between 73 and 76 percent), with between 18 and 21 percent tin to increase hardness and sharpness, and up to 2 percent lead. Swords had more tin than other weapons to enable them to take sharp edges. Also interesting, the surface of the sword was coated with a 10 micron layer of chromium oxide, which has protected the blades from oxidation for over two thousand years, so that today the edges are still sharp enough to cut through 19 layers of paper. The edges lasted longer than the technology that protected them. Chrome plating seems to have survived the Qin dynasty, but it disappeared during the Han dynasty and was not to re-surface until the late 1800s (around 1870 in the United States). Today, chrome plating is recognized as a complex and dangerous process which produces carcinogenic vapors and other dangerous contaminants, but the Qin craftsmen would not have been aware of these dangers – or not allowed to be concerned about them.

The Wu Hook, so called because it first appeared in the state of Wu,

resembled a crescent moon with blades on both edges. Made of bronze, it weighed about 1 kg, and was 65.2 cm long and from 2 to 3.5 cm wide. It would have been swung like a sword.

Long Weapons

Long weapons enabled the fighters to maintain a little distance from each other. Some were used in hand combat, while others could be thrown. There were six different types of these weapons, which were really just variations on the spear: **spear; pi; halberd; shu; ji; yue.** Like most of the weapons used by Qin's armies, these were made of bronze.

The **pi** functioned like a modern bayonet, with a blade about 30 centimeters long attached to a 3 meter shaft. Sixteen were found in Pit 1, the first to have been discovered in history, though as yet none have been found complete with a shaft. The pi was very popular during the Spring

Spear Pi Halberd Halberd with spear Shu

Bronze Spear

and Autumn Period and was used during the Qin and Han dynasties, but it seems that pi were difficult to manufacture and that the connection between the tip and the shaft was not secure, so as a result their use declined during the Han dynasty.

The 16 pi heads found in Pit 1 all contain patterns that resemble clouds molded into the surface of the weapon. As yet, it is not known if the pattern was etched using a corrosive liquid, but an x-ray examination of the weapons has revealed the presence of sulfur in the bronze.

The **shu** was a spear that developed from a hammer during the Zhou dynasty. Its head was a bronze cylinder 10.5 cm long which came to a relatively blunt point at the intersection of three triangular surfaces, making it of limited value as a weapon as it had no real blade. By the Spring and Autumn Period it was no longer popular for fighting, and was used for ceremonial purposes and as a symbol of authority. The guards of the command center in Pit 3 were armed with the shu. A book from the Tang dynasty describes a ceremony in which there would be 2,000 ceremonial combatants, some with a shu and some with a trident-like sha.

There were also more conventional spears with bronze blade tips. The spear tips were nearly 80 percent copper, 18.6 percent tin, and 0.75 percent lead.

The **ge**, also known as the halberd, was the child of a marriage

between a spear and a battle axe. This weapon could be thrust at an opponent like a spear, or swung like a small-bladed battle axe.

The **Fang Tian Ji,** or **ji,** was 28.8 cm long and had a spear tip; attached to the upper shaft just below the spear tip were two crescent blades, one on either side of the shaft, so that, like the halberd, this weapon could be swung like an axe or thrust like a spear. It was decorated in patterns of red. Four jis were found in Pit 1.

The **Yue Ya Chan,** or **yue,** was a crescent blade centered at the end of a shaft. Its advantage would be in the blocking of attacking strokes, with the edges of the crescent blade used on the attack.

Long Range Weapons

Bows and crossbows were the long range weapons. The Chinese were hundreds of years ahead of the Europeans in the design and deployment of the crossbow. The crossbow had been thought to date from the Han dynasty, but the opening of the mausoleum revealed that the crossbow was indeed a part of the Qin arsenal.

An archery manual from the Han dynasty credits the invention of the crossbow to an archer named Chin who lived in the 5th century BC in the state of Chu. In order to gain an advantage for Chu in the ongoing conflicts of the Warring States, Feng Meng devised an improvement to the bow: he added a stock at right angles to the grip and a trigger mechanism for firing the bow. The new weapon gave Chu archers an advantage over conventional bows. (Joseph Needham, Science and Civilisation in China, Vol. 1, Cambridge University Press, 1954, pp. 100-103)

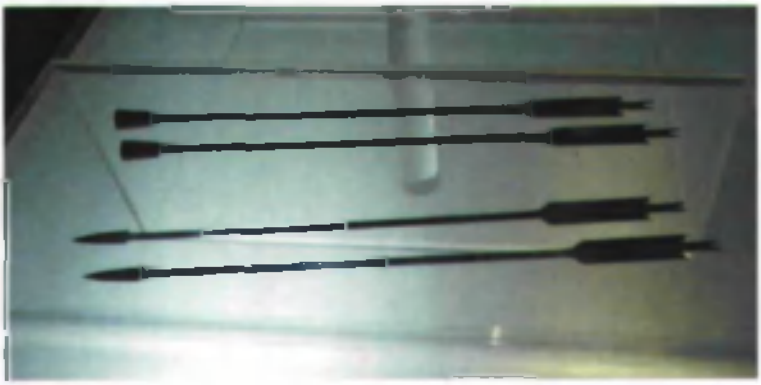
The Qin crossbow was made of a wooden bow between 130 and 144 cm long wrapped in a leather rope. To the center of the bow was fastened a cross piece of between 70 and 76 cm long in which a channel had been cut to hold the arrow. Qin craftsmen also improved on a trigger

mechanism design that had been developed during the Zhou dynasty. The design became popular because the mechanism was made of four separately cast pieces that could be easily mass-produced so that the parts were interchangeable from one bow to another. There was also a small hole in the front of the bow. Inside was a bronze wire which was intended to help the bow to keep its shape.

Bows were drawn with the arms, the back, or the feet. War chariots contained a hook on the outside of the chariot. When the chariot was moving, the archer could not use his feet, so the hooks were used to assist the archers in drawing their bows.

Most soldiers carried bows. Conventional bows had a range of 300 meters, and were deadly within 150 meters. The crossbow had an incredible range of 800 meters, and with each archer carrying a supply of 100 arrows, it meant that Qin's army could soften the enemy with a rain of death. Few bows, however, have been found in the mausoleum. The speculation is that because the bow was so valued as a weapon, tomb raiders stole most of them.

The **arrows** were also evidence of Qin's advanced weapons



Arrows

technology. The mausoleum has yielded 280 piles of arrows with each pile containing one quiver and 100 arrows. As well, another 10,000 arrows were found. Each arrow was between 68 and 79 cm, with a bronze tip and a shaft of either bamboo or other wood. Like the swords, the arrowheads were coated with chromium oxide, so that they remain sharp to this day. The longer arrows were used for the longer bows and each had a tip that weighed 0.1 kg and measured 41 cm. The arrowheads themselves demonstrate an impressive understanding of the principles of physics. Arrowheads were aerodynamic. The arrowhead resembled three triangular planes meeting in a sharp point. They were made in a mold then the three edges were ground sharp, but as well, these edges were rounded (similar in fact to the design of a modern bullet) to enable them to fly with less air resistance. These heavy bolts would land with an incredible armor-penetrating force. But smaller arrows were used for most fighting. In addition, nine bronze arrowheads measuring 26.6 cm but without shafts were found in Pit 1. As yet, researchers cannot determine their specific purpose.

Quivers were made of hemp, were painted, and came in two lengths (32x17 and 39x21 cm) to accommodate the two different lengths of arrows. The uniform of the archer contained a ring for securing the quiver, which also had a ring attached to it. Long boxes on the chariots were for storing the quivers. Three different capacities of quivers were used for different purposes: most held 100 arrows, but a chariot unearthed from Pit 1 had a quiver containing 54 arrows, and another small quiver was found containing just 12 arrows.

After Qin conquered the six warring states, the Mongols to the north became his main enemy. Because the northern Chinese are physically larger and stronger than the southern Chinese, the traditional weapons were no longer good enough and the bow became the preferred weapon. In the war with the Mongols in 214 BC, because of the extensive use of the crossbow, it took only one year to defeat 300,000 Mongols and

return the land north of the Yellow River to Qin. Even heavy armor was penetrated by the deadly shafts.

Conclusion

Deploying the Weapons

Each weapon has specific advantages and disadvantages, so an army must have many different types of weapons for different circumstances. For example, of the 204 vanguards, 11 have spears while the rest are archers. Clearly, the bow and the crossbow were the preferred weapons of the vanguards. Bows were found in 52 locations; there were 112 quivers with arrows among them, but just 4 bronze swords and 22 sheaths; 6 spears, 2 Wu hooks.

In Block 1, 61 soldiers have bows; 1,116 arrowheads were found in these blocks, 1 bronze spear, 6 bronze swords and 24 sheaths (perhaps indicating that some of the swords had been stolen when the mausoleum was smashed). In Block 11, of the 57 warriors, 55 have bows and 2 have long weapons. As well, 1,483 arrowheads were also found. These findings indicate that the perimeter of the army was guarded for the most part by the archers.

In Blocks 2, 3, 9 and 10, the infantry have long weapons, mostly the pi and the ji, and there are only a few with bows and arrows. Blocks 4 and 5 have more long weapons than bows and arrows (35 to 19 in 4 and 22 to 17 in 5), but Block 8 is balanced (23 to 22). In general, the infantry used a combination of long range and long weapons, with some (usually officers) also carrying swords. The strategy was for the long range weapons to make the battle easier than for the shorter weapons, and then for the shorter weapons to finish the job. It was a mutual interdependence that Sun Zi would have appreciated.

We can infer from a study of the formations in Pits 1, 2, and 3 that Qin's army was a highly disciplined fighting machine. The behavior

of the warriors was prescribed from head to toe: from hair style to the positioning of the feet. Leaders were identified by clothing and headgear, and each knew his responsibilities, and the responsibilities of his followers. Each soldier also knew exactly what was required of him. Because it was all clearly laid out – including the punishments for failure to follow procedures – warriors knew from the signals when and how vigorously to attack, when to stop, and even when to retreat. If an officer went down in combat, there was a procedure to fill that void. If a chariot was stalled, the warriors knew whose job it was to push, or if pushing would not suffice, there was a replacement chariot ready to step in. In battle, how the formations attacked – who led and who followed – was all regulated so that little was left to chance.

Qin had standardized shooting techniques; even the components of the crossbow such as trigger mechanisms were standardized for mass production. (We will see that even in the making of the terra cotta warriors, little is left to individual discretion. The craftsman was required to stamp his name on the completed statue, and if the work was unsatisfactory, the worker was punished and the statue re-done.) Is it any wonder, then, that Qin's armies swept through the six other states and leveled them?

Some Interesting Facts

* Arrowheads used in the Qing Dynasty, over 1600 years later, were inferior to those found in Qin's mausoleum.
* During the Warring States Period, bows were developed in Korea that could shoot 800 meters. Those in Qin's tomb could also travel that far.
* The crossbow would not appear until the 15th century in European battles, and its range was limited to 200 meters.
* Qin also developed a super-bow with a range of between 900 and 1000 meters – impressive when you consider that the modern rifle has an effective range of 1500 meters. According to Sima Qian, on his last trip to the east, Qin killed a giant fish (probably a whale) using a giant bow.
* During the Three Kingdoms Period, Zhuge Liang invented a bow that could fire ten arrows.
* By the Northern Song Dynasty, a bow was developed that could reach 1,500 meters.
* The crossbow was said to be an invention of the Chu people.

CHAPTER 9

Art and Craft in the Making of the Terra Cotta Warriors

Two questions hang in the air at Xi'an and in the minds of each of the nearly two million annual visitors: Why? and How?

There are abundant theories. Some see the mausoleum simply as Qin displaying his strength and power. It is his manifestation of military might and political will. Here was an Emperor who could command unlimited resources. Certainly Qin had a large vision, one which included the Great Wall and a unified China, and the creation of the warriors is but another illustration of this vision. Some even suggest that the warriors are a symbol of the new country that had been created and molded into one nation.

Others look on the display and imagine the sadness of the lives that were forced to toil for nearly 40 years on the project, lives that were constrained, controlled and manipulated; lives that had no individual purpose other than to decorate a vain emperor. If you consider the mass graves of the workers who were buried alive when the mausoleum was completed, perhaps there is an argument for this view. But the fact is that up to 700,000 workers were engaged in making figures that were carefully and beautifully crafted. While over 8,000 warriors were created in Qin's factory, each one was carefully made according to very high standards. (Any figure that was less than perfect was smashed, and the worker was required to make it again.)

Punishment for failure

The names of only 80 workers appear on the figures that were made over a period of 38 years, but there must have been tens of thousands who made the figures. It is hard to believe that they would have worked in sadness. It is hard to believe that there was no joy in the creation of something unique, magnificent and beautiful.

Clearly the most popular explanation for the warriors lies in Qin Shi Huang's character. He was a man with an abiding need to control. He had conquered the world and had created order out of chaos; but he feared death – so much so, it is said, that the word was not mentioned in his presence – because death opened a door to an unknown realm, one outside of his control. The army of warriors was Qin's way of defining what would happen after his death: he would have forces to command in the afterlife, and these forces would again give him control.

The second question everyone asks about the warriors is "How?" Thanks to Sima Qian, there are answers here. The workers, who were both slaves and free men, were supplied by two different sources, the central government and the local governments. Each group seemed to have a different style. The central government workers produced pieces that were large and strong. The figures looked more serious; their shapes were more accurate, with body ratios more correct. Those of the local government on the other hand, were thin and slim. These creations were more active and it was as if they were drawn more from real life. Even the hats produced by each group were different. Central government hats were rounded, with only one or two styles; the local government workers created more variety in hair and hat designs.

What Qin achieved with the warriors had never been even attempted before. It was the pottery equivalent of making the leap from heavier-than-air flight to a landing on the moon. There had been other pottery figures of course, but nothing of that size and number had ever been attempted. Making the warriors meant a quantum leap in technology, and making so many pieces meant a further leap in mass production techniques.

Work on the terra cotta warriors began early in Qin's reign, long before he took control of the government. As a young prince, Qin had been raised in the uncertainty of the Warring States Period, and even though he was only an adolescent, he knew from experience that life was short and uncertain, so the terra cotta armies became his answer as he moved to take control of both this life and the next. Qin's desire for certainty, however, has left us with some incredible work; what we have is not just a collection of pottery. The figures provide us with insights into the period. Better than two-dimensional images from a digital camera, the findings at Xi'an provide us a three dimensional slice of time: we see not just soldiers, but military strategies, weapons, entertainment styles, architecture, and even philosophy on permanent display, if we can

Working the clay

discover how to read them.

Workers used yellow clay to make the figures. This earth was first sifted and washed to ensure an even color and texture, then sand, ground quartz and other elements were added to make the clay stronger and harder. The finished products were baked at different temperatures depending on the thickness of the figures. A temperature of between 950 and 1000 degrees C was used for thinner figures (one to two cm); higher temperatures (between 1000 and 1050 degrees C) for thicker figures (10-15 cm). The finished clay was placed into relatively cool kilns then the temperature was steadily increased. This approach was necessary to prevent cracking the pottery. (Researchers have uncovered piles of broken terra cotta pieces about 300 meters SE of the pits. It is possibly either a

factory site or a place where the failures were discarded.)

Another idea to keep in mind when considering the manufacturing of the warriors is that there was not just one way of making the figures. Individual workers had options in the assembling of warriors and horses, and some preferred one technique over another. As well, over the nearly 40 years of the project, as techniques were perfected, old ways yielded to new ones. Yet, when you consider only the result, over 8,000 warriors, and see the finished pieces arrayed in the pits at Xi'an, the various techniques that produced them are invisible and they all seem to have been generated from a single thought.

Making the Warriors

The warriors were not made from one mold. Their parts were made separately then assembled. The heads were either assembled from two pieces (front and back) which were cemented together, or made from a mold then hand finished. Though there are perhaps basically ten different face shapes, each of the over 2,000 warriors that has been re-constructed to date has a different face. It has been suggested that the faces of the warriors were made by copying the faces of real soldiers; it is also said that the different faces represent the differing faces of the Chinese, including the minorities – Qin's way of casting in stone the unity of his new country.

Once the shape of the head was formed, the fine details of features and character were sculpted into the soft clay, probably with bamboo instruments: nose, ears, pigtail, topknot, eyes, beard – there are 20 different types of beards among the warriors, and several hair styles. In any event, the faces of the warriors are not so much perfect as they are realistic. In fact, they represent a blend of art and realism. Eyebrows were made thicker to suggest power, for example, and beards were curved upward to suggest grace.

The bodies were made from the bottom up. First a platform was constructed (there were several styles of these). The feet were made separately then attached first to the body, then the platform. Some platforms had recessed areas for the feet, others were flat. Legs varied. Some were thick and fat and these were hollow. Others were thin, and these were solid. The hollow legs were built either directly on the feet or first made separately then joined to the feet. The torso was hollow – Qin's was an army with no heart. The two legs were joined as a base and secured by ropes. Once the base had dried, the rest of the torso was built upward. The chests and biceps of Qin's warriors are not massive like those of the Greek statues of their gods (like Achilles). In the Chinese view of the body, energy comes not from the chest, but from the area just below the navel, the area that, in traditional Chinese medicine, is the origin of the qi. We can see in many of the figures roundedness in the lower abdomen, implying power.

Making the warriors

The arms were also hollow. They were pre-made either straight or curved, then glued to the body. Hands were made independently of the arms then inserted into the arms. There is considerable variety in the positioning of the hands. Some are joined, some are fists, some are holding weapons. In some versions, four fingers were made in one mold and the thumb in another, then glued together. Most hands were inserted into the arms before the warrior was baked. Some were nailed to the arms then the gaps were filled in with clay.

After the body was made, it was covered with a layer of clay between 2 and 5 cm, with more on the bottom than the top. After covering the figure, details of costume were refined: collars, armor, rivets, and wrinkles were added to the clothing. Leg protectors were sometimes made from small pieces glued together. Armor was built on a second layer of clay, with the rope for the armor pre-made separately then glued to the armor. To make the rivets that attached the armor plates, small holes were drilled in the armor then a tiny clay ball was inserted into the hole to give it the realistic appearance of a rivet. Fingernails, muscles, ligaments and joints all indicate that a careful study of the body had been made – something that would not happen in Europe for another 1700 years, with Michelangelo. After all the details were complete, usually the head was glued to the body with soft clay then baked as a unit; though for some figures, the head was baked separately then connected. The completed warriors were not toys: they weighed between 110 and 300 kilograms and stood on average 1.8 meters (with the tallest at 1.97 meters). Making each warrior was a considerable achievement. But once it was made, transporting the heavy and unwieldy figure to its final resting place was yet another challenge.

Once the figures were released from the factory, they were painted. Solid and strong colors were used: reds, greens, blues, purples, yellows, blacks, whites and browns. Each color was made in three different shades, from deep to light, and most dyes were made from natural minerals and

plants. Each figure first received an undercoat, then the color. Uniform tops were often bright red, crimson, or purple, light blue, or pink and green. Colors for the trousers (reds, greens, blues and purples) were selected to contrast with the tops. Hands, feet and faces were pink, with the colors applied in two layers because of the lightness of the pigment. If the background of the armor was white, it would be decorated with red, green, yellow, blue and purple patterns. The assembled warriors would have been a striking visual feast of color and beauty; the drab figures now on display at Xi'an only hint at what once was.

Making the Horses

The Heads and Necks

As with the making of the warriors, different parts of each horse (head, ears, neck, body, legs, and tail) were made separately then joined. There were two styles of heads: a narrow head and a large and wide head. The narrow head was first molded using two separate molds then the two pieces were glued together. Next, the tongue and teeth were carved and glued to the bottom of the head. The wide head was made from five hand-made clay pieces glued together: left, right, top, bottom and chin. The ears and forelock were first made separately by hand, then the fine details were carved into the clay and the finished part was inserted into holes in the horse's head. The neck was made of two separate clay pieces. Once these were assembled, the details of the mane were carved.

Bodies and Legs

The hollow body was constructed in three parts: the back, the stomach, and the chest, with each part being made of several clay pieces. Between three and five pieces were used to make the back and stomach of the horse, and five pieces were used for the chest. Each of the joins was covered with hard clay then hammered tightly together. Legs were pre-

Assembling the horses

made separately and were very hard and solid. Reflecting the different techniques developed for the construction of the terra cotta pieces, there were two different ways of joining the legs to the completed bodies of the horses. Some legs were squared at the end and inserted into holes in the body; others were secured in a notch in the body.

Putting All the King's Horses Together

First the four legs were positioned then supported. Next, the assembled body was raised and positioned over the legs. The body was then hammered into place, securing it on the legs. Three different techniques were used to connect the body with the legs. One method involved gluing the stomach and chest together then hammering the combined piece into the four legs. A second was to attach the base to the legs, then add the stomach and the chest separately. A third technique

was to attach clay pieces to the legs then mold them into the chest, the stomach and the bottom. Each method has its advantages, but the actual method used is uncertain.

Once the body was firmly attached to the legs, the head and neck were joined together then connected to the body at an open hole in the neck and secured by clay. An internal support secured the head on the horse firmly to the body. The tail was first carved by hand then inserted into a hole in the rear of the horse.

Once the component parts were united, the horse was ready for detailed decoration. It was completely covered with a layer of clay into which were carved the details of the muscles. After a second coating, the eyes were attached and the animal was given facial expression and wrinkles. After these two coatings, any seams or joins were no longer visible. Finally, the saddle was constructed from smaller clay pieces and mounted on the horse. The horse was now ready for the kiln, then for painting.

If a construction feat of this magnitude were attempted today, you can imagine the logistics studies that would necessarily precede the project, with serious scientists frowning and saying it would be difficult if not impossible to achieve. So the fact that over two thousand years ago such a project was successfully completed gives us one more reason to be awed by this the shortest of dynasties.

CHAPTER 10

The Great Wall

Someone wishing to arrive at the truth about Qin Shi Huang has a formidable task, perhaps one as onerous as the Mongols had when they tried to penetrate the Great Wall itself. You stand on one side of the wall of time and your view is blocked by 2200 years of history, myth and legend. What is more, the myths persist even today, disguised as truths. If you first visit Xi'an to marvel at the terracotta warriors, then travel to Beijing and walk among the press of the bustling crowds that

The Great Wall at Badaling

visit the Wall at Badaling, you thrill that such a structure could have been contemplated and completed over 2200 years ago by the same man whose hand guided the construction of the warriors. Next, you visit the omni-vision theater beside the museum and you see Emperor Qin issuing the edict requiring the construction of the wall: you see dramatizations of troops marching and workers hastening to do his bidding. Then the thrill as a helicopter carries you in omni-vision along the length of the wall, presenting you with stunning views and vistas. Not finished, you go next door to the museum and there is a map of the Wall as seen from space.

The museum at Badaling also contains artifacts and displays relating to the development of the wall: cannons, weapons, uniforms, even construction materials and sample bricks taken from various locations. Large scale models depict the processes used in the construction. You see workers lugging massive stones into place, and even goats with two or three paving stones strapped to their bodies while below, more workers are mixing mortar. Another model shows soldiers repelling an attack by Mongols. Several reconstructed terracotta warriors frame doorways: they are not just ornamentation, for both the wall and the warriors are the work of the same man.

It is simply amazing, you want to exclaim, that one man could have overseen the construction of this enormous wall and built the terracotta warriors and unified all of China. Then someone reminds you that the Great Wall is the only man made structure visible from outer space – even from the moon, they add. And the Great Wall becomes, like Qin Shi Huang, larger than life itself.

Qin's Great Wall

But the truth is usually different from the myths. After Qin conquered the six other states, he brought order to the northern edge of his kingdom by waging wars with the Mongols. These tribes (the

Xiongnu) were eventually subdued, but the campaign was essentially inconclusive, and to prevent the Xiongnu from encroaching on the northern frontier any longer, the emperor ordered the construction of a defensive wall that would protect a border 6,435 kilometers long. He would do so by linking several walls already existing from the Warring States period. This new wall would cross deserts, marshes and mountain peaks – some as high as 2,438 meters – running 4,828 kilometers from North Korea to Lintao in western China. It would contain towers that were not just for observations but for a communication network that would include smoke signals during the day and beacons at night, allowing information to be promptly transmitted.

Construction materials and techniques would vary along the length of the wall as workers relied on what was locally available. Near Beijing the wall is constructed from quarried limestone blocks. In other locations it may be quarried granite or fired brick. Where such materials are used, two finished walls are erected with earth and rubble fill placed in between with a final paving to form a single unit. In some areas the blocks were cemented with a mixture of glutinous rice and egg white. In the extreme western desert locations, where good materials are scarce, the wall was constructed from dirt rammed between rough wood tied together with woven mats.

The wall was as much as 4.8 meters wide, 6 meters above ground level. In Qin's day, over 700,000 laborers were conscripted to work on the wall, including soldiers, slaves, peasants. Work on the Wall was seen as a punishment and persons were sentenced to a specific number of years labor on the wall, depending on the nature of their crime.

There is the story of Meng Jiangnv. Her husband had been forced to work on the Wall, and when news came to her of his death, she journeyed north. She could not find her husband's body and her grief was so great that her tears are said to have caused the wall to collapse. Apparently, even heaven was moved for although it was June, it snowed on that day.

When you total in the infrastructure needed to supply 700,000 workers, it is likely that as many as 3.5 million men worked on the wall during the ten years needed to construct it. It is said that the work was gruelling and that the overseers were demanding, so that many died in the building of the Great Wall. Certainly, the daily progress made supports this view. If Qin had started his wall from scratch, to complete its 4,820 length in ten years, the wall would have had to grow on average about 482 kilometers a year, or 1.6 kilometers per day during the ten year period. This would mean that each day over 40,000 cubic meters of rock and earth would need to be put into place. Of course, Qin's task was made easier because in fact he was joining the seven walls that already existed across the north of China. Still, it is thought that over a million men may have died in building the wall. In that regard, another rumor persists that the bodies of those who died while working were simply tossed into the wall as more fill, so that the wall has earned such endearing epithets as "the long graveyard" and "the longest cemetary on earth". There are those who suggest that putting bodies as fill into the wall was not possible, that the bodies would weaken the structure of the wall; but given that the center of the wall was for the most part earth fill, it is hard to see what difference a body here or there would make. The legend of the longest graveyard probably came from somewhere.

The Great Wall served three purposes. First, it restricted the influx of the Mongols. But, and this was perhaps more important, even if the Mongols were to scale the wall in areas that were guarded, they could not bring their horses with them, make raids on horseback and ride off with captured loot. Finally, the Great Wall itself became another highway across the rugged terrain of the north, along which troops and goods moved more easily than on the uneven surfaces of the ground.

The section of the Wall at Badaling was made a UNESCO World Heritage Site in 1987. However, it is not the wall built by Qin Shi Huang. Qin's wall was actually built north of the current Great Wall, and

very little of it survives today. What does survive and endure, however, is the concept. The idea of a wall that spanned the northern border was Qin's, and when subsequent emperors decided to reconstruct the Great Wall, they were simply carrying out an idea that had already been Qin's.

There have been four major walls in northern China:

1. 208 BC (the Qin Dynasty)
2. 1st century BC (the Han Dynasty)
3. 1138-1198 (the Jin Dynasty)
4. 1368-1620 (from Ming Dynasty Emperors Hongwu to Wanli)

The wall at Badaling, the one connected to the museum and the Omni-vision theater, is essentially a different wall. It was built during the Ming Dynasty when China had at least twice as many inhabitants as in the days of the First Emperor Qin Shi Huang. As well, when more than a century was devoted to its construction (as opposed to a mere ten years during the rule of the First Emperor). The Ming Dynasty Great Wall starts on the eastern end at Shanhai Pass, near Qinhuangdao, in Hebei Province, next to Bohai Bay, spanning nine provinces and 100 counties. The final 500 kilometers have all but turned to rubble, and today the western end is at the historic site of Jiayu Pass, located in northwest Gansu Province at the edge of the Gebi Desert, the site of the oases of the

Map showing the location of the Qin Great Wall

Section of the Great Wall at Zhao in Inner Mongolia

Silk Road. Jiayu Pass was intended to greet travelers along the Silk Road. Even though the Great Wall ends at Jiayu Pass, there still remain many watchtowers extending beyond Jiayu Pass along the Silk Road which were once used for signaling an invasion.

In the end, the Great Wall proved that there is no fortification that cannot be breached, and that stealth is stronger than stone. The Manchus

breached the Wall by convincing the important general Wu Sangui to open the gates at Shanhai Pass and allow them to pass through. Legend has it that it took three days for the Mongol armies to pass. After they conquered China, the Wall was of no strategic value as the people who the Wall was intended to keep out had become the Qing dynasty and were ruling the country.

As to whether the wall can be seen from space there is a great debate. In 1938, Richard Halliburton's *Second Book of Marvels* said the Great Wall is the only man-made object visible from the moon. This legend persisted, sometimes even entering school textbooks. The Great Wall can simply not be seen by the unaided eye from the distance of the moon. Even its visibility from near earth orbit is questionable.

One shuttle astronaut reported that "we can see things as small as airport runways (but) the Great Wall is almost invisible from only 180 miles (290 km) up." Astronaut William Pogue thought he had seen it from Skylab but discovered he was actually looking at the Grand Canal near Beijing. He spotted the Great Wall with binoculars, but said that "it wasn't visible to the unaided eye." An Apollo astronaut said no human structures were visible at a distance of a few thousand miles. Chinese astronaut Yang Liwei said he couldn't see it at all.

From low earth orbit, about a thousand times nearer than the moon, it may be visible under favorable conditions. Features on the moon that are dramatically visible at times can be undetectable on others, due to changes in lighting direction. The Great Wall is only a few meters wide – sized similar to highways and airport runways – and is about the same color as the soil surrounding it.

A recent photograph taken from the International Space Station appears to confirm that China's Great Wall can be seen with the naked eye after all. Leroy Chiao, a Chinese-American astronaut, took what the state-run China Daily newspaper says is the first photographic evidence that the Great Wall could be seen from space with the naked eye, under

Qin's Great Wall, Inner Mongolia

certain favorable viewing conditions and if one knows exactly where to look. *(http://news.bbc.co.uk/2/hi/asia-pacific/4459311.stm)*

The Great Wall Today

While some portions near tourist centers have been preserved and even reconstructed, in most locations the Great Wall is in disrepair, serving as a playground for some villages and a source of stones to rebuild houses and roads for others. Sections of the Wall are also prone to graffiti. Parts have been bulldozed because the Wall is in the way of construction projects.

Today the Great Wall Society of China works to preserve the Wall.

As of June 2003, the Chinese government still had no laws written to protect the Wall nationwide. However, in August 2003, Beijing enacted local legislation which would prohibit visits to the "wild Great Wall" or parts not open to the public.

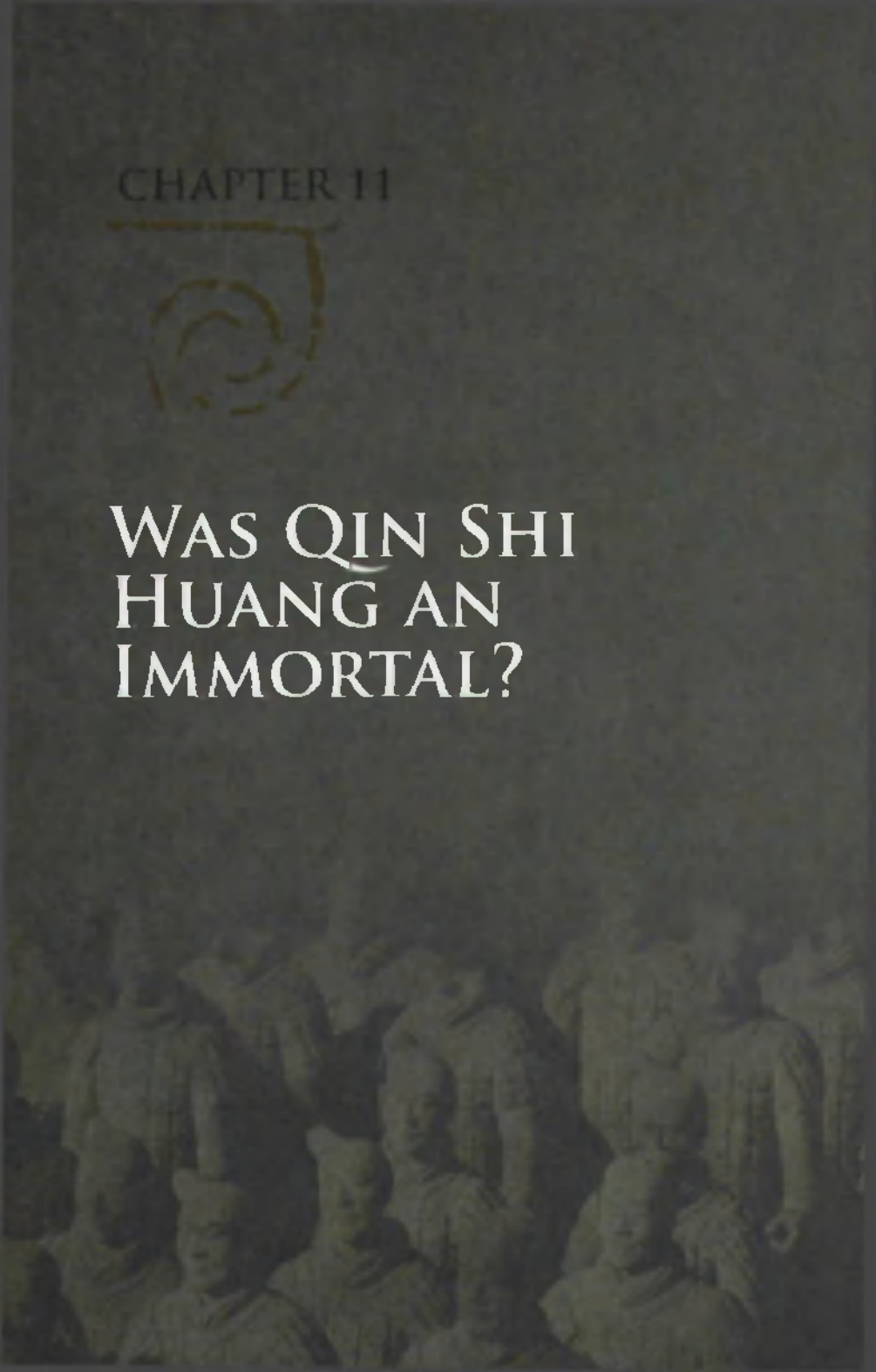
The Great Wall is still one of the world's most desirable tourist destinations. In peak season, sections at Badaling are as solid with people as is Nanjing Lu during Spring Festival. As a result, there are new approaches to marketing the wall. One recent idea is to make the wall available for overnight hiking and camping expeditions. There are many outdoor enthusiasts who would like to be able to say, "I camped on the Great Wall of China!"

Though Qin did not construct the present day Great Wall, it is nonetheless a real part of his legacy. His ambition to build the first wall, and its success in allowing the north to become secure, no doubt led to the construction of the subsequent walls.

If the wall was the making of China, it was the unmaking of the Qin Dynasty. Both Fu Su, Qin's intended heir (who, it can be argued, would have brought stable and good government to the nation and obviated the need for a revolution), and Qin's most loyal and capable general, Meng Tian, were in the north supervising work on the Wall when Qin died. Had they been in Xi'an, and therefore closer to the center of action, it is more likely that Qin's edict that Fu Su replace him as Emperor would have been obeyed.

CHAPTER 11

Was Qin Shi Huang an Immortal?



Mankind has an on-going love affair with mysteries to be unraveled and codes to be broken. This love of riddles is far older than the Sphinx. One recent novel that enjoyed a long run on New York Times' best sellers list, for example, is Dan Brown's *The Da Vinci Code*. Brown's book is admittedly a novel, but in its preface he declares that the secret societies on which the book is based are indeed real. The premise of his story is this: a secret organization concealing important information has existed within the Catholic Church for over 2,000 years. Clues to both the truth and the existence of this information have, his story suggests, been encoded in artwork by such masters as Leonardo Da Vinci. We know Da Vinci loved riddles and puzzles as much as he did his intricate designs of weapons and machines, for he wrote a collection of riddles purporting to be prophecies of doom; however, each one had a commonplace solution. ("I foresee a time when all colors will be replaced by black", for example, referred simply to the coming of night.) Brown, in his book notes unusual hand positions in paintings and sculptures and ambiguous face shapes that also contain such messages. These new interpretations given to the artwork have piqued the world's interest. The book's popularity today arises not so much from its truth as from the startling idea it presents that treasures we have long regarded with familiar eyes can suddenly be seen in a new light, and that the ordinary and mundane can

take on new meanings as symbols and codes.

Other examples continue to emerge from the clay of time. Pottery figures unearthed in 2001 at Jinsha near Chengdu in Sichuan province are causing Chinese history scholars to scratch their heards. The pottery find dates to the late Neolithic Age, preceding the Xia and Shang dynasties, which were thought to be the cradle of Chinese civilization. These figures are from the legendary Ancient Shu Kingdom. The discoveries include exquisitely designed bronze sacrificial vessels and polished jade fashioned into axe heads, all work of a caliber far exceeding those from the Middle East at the same time. Furthermore, it was a culture that worshipped a sun god, and it was a culture that seemed to disappear shrouded in mystery. When asked if the pottery was the work of aliens, Jiang, a scholar who has studied the site for twenty years, would only say "Unlikely," as if wanting to keep his options open.

Secret codes are also the premise of Maurice Cotterell's work. Cotterell is no stranger to controversy and has a reputation as a writer who seeks extra-terrestrial answers to earthly puzzles. He has published nine books, including texts on the Mayan civilization and King Tutankhamen. In each, he claims to unlock ancient codes which have been hidden in the art and treasure of past cultures and which can offer us valuable information about our relationships with nature. In 2003, Cotterell, in his book *The Terracotta Warriors: The Secret Codes of the Emperor's Army*, included Qin Shi Huang on his list of gods who had understood the workings of nature and had played a role in encoding this vital information for future generations.

The secret that Cotterell believes is encoded in the works of Tutankhamen and the Mayans among others is a deeper understanding of the sun and how it is connected with and controls human civilizations. The sun, he says, like the earth, rotates on its axis. In the course of this rotation, the sun's equator must rotate more rapidly than its poles simply because a spot on the equator of the sun must travel farther than a

corresponding spot at the poles. Further, the poles are charged: the north pole, positively and the south pole, negatively. While the sun's equator is a region of zero charge, there are overlapping waves of charges generated as the sun rotates and these waves spill into the sun's equator. As a result of the center's traveling faster, the polar magnetic field of the sun becomes tightly wound up, and over a period of approximately 12 years it causes what we call sun spots, an explosion of magnetic solar radiation from the surface of the sun, radiation which pours down on the earth and affects all life there.

Cotterell further contends that the 12 year cycle of sun spot radiation is actually just one small part of a larger pattern that factors in the rotation of the earth and earth's relative position to the sun, and even to the planet Venus. These cycles have an accumulated effect, he argues, so that the sun's magnetic field actually *reverses* itself every 3,740 years (1,366,560 days). These magnetic reversals can have catastrophic effects on life on earth, he says, because they cause huge increases in solar radiation for a period of 374 years surrounding the catastrophic event of the sun's magnetic reversal. The flood of ionized particles disrupts fertility by increasing mutations and results in higher levels of infant mortality. If the shift is strong enough, it can even cause the earth to tilt on its axis. Further, Cotterell suggests that this number (1,366,560) was a number sacred to the Mayan people: they based their calendar on it, and even used it to predict the demise of their own civilization in AD 750. It is a number Cotterell also relates to Qin Shi Huang.

Thus, according to Cotterell, solar radiation, by causing changes in the presence of ionized (charged) particles bombarding earth, regulates the rise and fall of civilizations. It creates ice ages, influences fertility, affects personality development and even causes such mental disorders as schizophrenia. Cotterell graphs the major influenza pandemics of the last 80 years, and each coincides with peak periods of sun spot activities. (And, while his book does not mention the SARS pandemic, 2003 was,

according to his charts, another period of peak sunspot activity.)

There is a growing body of scientific research connecting the changes in magnetic fields caused by high voltage power lines and VDTs with health hazards. Many pregnant women therefore avoid VDTs for fear of harming their fetuses, and high voltage power lines and cell phones are also the subjects of debate and the scrutiny of research. Some see the human body as a large biological magnet which can be affected for better or worse by both ambient electromagnetic radiation and magnetism. (There are even health practitioners who use magnetism in their healing processes.)

It was not only the Maya, Cotterell claims, who knew of the importance of sun spots to life on earth. The Chinese also recognize the 12 year sun spot cycle in their astrological calendar. This calendar suggests that persons born in different years (rabbit, snake, dragon, rooster...) will have different personalities and different futures. Cotterell is merely concluding that these differences in personalities and fortunes are the result of the varying levels of solar radiation present at the time of conception during the different cycles.

So, Cotterell suggests, the knowledge of solar radiation and how it affects humans is indeed important and should be passed on from one generation to the next. One way of doing so would be to simply write it down into books in the same way that Confucius wrote down his beliefs about the ways of perfecting human nature. But, according to Cotterell, this is not what was done with the Maya, the Egyptians, and with Qin Shi Huang. Instead, they preferred to encode this vital information in a cryptic manner using familiar objects in a symbolic way to create an enormous puzzle for future generations to solve.

You could argue that if the information was so important, why conceal it? Perhaps their motivations were different. Maybe it was not so much that they wanted to conceal it, but simply that they valued it and were intending to honor it. It is a common practice to use favorite

numbers and initials in designing artwork. Chinese addresses which feature the number 8, for example, are prized and hotly contested for. Perhaps the simple answer is that in designing his own final resting place, Qin simply used the characters and numbers that he valued in laying out its design. We know that he believed the number 6 to have meaning for him, and for that reason divided China into 36 (6x6) prefectures. Perhaps Qin didn't know why he valued the number, but other cultures have also given the number the burden of added meanings. (666 in the Old Testament is, for example, the "mark of the beast" and is seen as representing Satan). It is universally common for people to use symbols they value and that they want associated with them (flowers, crosses, birds, for example) on their graves -- sort of their final word on their life.

The Encoding of Knowledge

The first clue that Qin is trying to tell us something, Cotterell says, is in the ten different face shapes found among the warriors. These shapes each resemble ancient Chinese characters: *shen* (a letter); *ri* (the sun); *jia* (the first of the ten characters of the decimal cycle); *you* (story or course of events); *yong* (covered corridor); *ji* (from ancient times up to now); *mu* (the eye, focus the eye on something); *feng* (see a point by clever analogy); *tian* (a field; the mind as a field for cultivation); and *guo* (country, national treasures). Put the characters into a sentence and this is what he gets: "Look at the soldiers in the tunnels carefully and decode the secret story of the sun and God from the beginning of time until now."

Granted, it seems a stretch. Most researchers only see eight face shapes, for example, and it is hard to relate the differences in face shapes to the different Chinese characters. It is almost as if Cotterell himself has been out in the sun a bit too long. But other examples are more intriguing. The square and the circle are important symbols in Chinese mythology. We are told that heaven is round, and earth is square. These

symbols were used as the basis of the design of ancient Chinese coins.

It is also the symbolism embedded in the design of Qin's bronze funeral chariot, with its round canopy covering a square carriage. But Cotterell takes the analysis farther. There are 22 spokes on the umbrella, and 30 spokes in each wheel. Multiplying 30x22 gives us 660. Since we know Qin valued the number 6 (remember the 36 prefectures), we would expect this number to be 666, but to achieve a result of 666 would require each wheel to have 30.2727 spokes: not a possibility. The remainder of 0.2727 is a sort of inconsistency, Cotterel thinks, but it is a mystery that has meaning. Dividing 0.2727 into 1, for example, gives 366, the number of days in 1 solar leap year. Coincidence? Not, according to Cotterell, who, after studying the second bronze chariot, *performed similar numerical gymnastics to yield similar results.*

There are other clues to draw our attention to the sun. We know that the hands of each warrior were made separately then inserted into the arms. Further, each warrior's hands are in slightly different positions. The general's hands, for example, are joined, with the right hand resting on the left hand and its forefinger slightly separated. To Cotterell this represents the number 9, (crossed hands mean 10, separated finger, 10 minus 1 equals 9). Nine is a number associated in many cultures with the gods. Archers, he contends, have hand positions that represent the other significant number, 6, signifying their lower status.

As well as seeing messages in their hand positions, Cotterell believes there are messages in the warriors' clothing. The rivet patterns on the warriors' tunics are also surprisingly varied. We know that clay was added to the finished warriors so that details of armor could be carved into it. We know further that each rivet was created by the drilling of a small hole into the platelet into which was inserted a small round ball. Why, Cotterell wonders, are not all the rivet patterns the same? Surely there must have been an optimum method of attaching a platelet of armor to the warrior. Again, he says, Qin is trying to call our attention to the

Note the different rival patterns for the same uniforms

numbers 6 and 9, both of which have astrological significance.

Cotterell also draws our attention to other instances of the occurrence of the numbers 6 and 9. The warriors' positions in the Pits, he says, also call attention to the esoteric numbers 666 and 999. Cotterell analyzes the formation of troops in Pit 1 by using a set of calculations that make Einstein's Theory of Relativity seem like child's play. Cotterell counts existing and non-existing soldiers, sometimes multiplying their numbers for no apparent reason, then at other times adding or subtracting them, to arrive at his tenuous conclusion that Qin Shi Huang wished to

"deliberately encode the figures 666 and 999". When the Emperor made each of the five journeys through his kingdom, for example, he was said to travel at the center of a retinue of 81 chariots. Yet another: researchers have uncovered the names of 80 craftsmen who worked on the various weapons. Cotterell argues that if we consider that the master craftsman was Qin Shi Huang himself; that too gives us the number 81 (9x9).

According to Cotterell, there are 7,029 troops in Pit 1. Why? In astronomical terms, the reason is clear – though the reasoning is convoluted. One sunspot cycle is 68,302 days. That number is the result of 781 time intervals of 87.45454545 days. Further, there are 9 microcycles of magnetic activity on either side the 781st time interval that are free from the sun's neutral warp. Nine times 781 is, of course, 7,029.

In case that evidence is not convincing, Cotterell asks us to examine the horses' tails. Their shapes are said to be drawn from the star configuration of the centaur of Sagittarius, so that Qin was the "archer that lived in the stars".

The arrangement of the warriors in Pit 2 receives the same careful attention from Cotterell. Among other calculations, we learn that 96 standing archers exactly equal the number of magnetic microcycles in one sunspot cycle of 187 years. In Pit 3, Cotterell manages to connect Qin Shi Huang with the planet Venus, the morning star.

When Cotterell combs through the hair styles of the warriors, he finds still more to ponder. How, he asks, did the warriors find time to arrange their hair in the heat of a battle? Were they attended by more thousands of hair dressers, or did these warriors braid each other's hair – it suggests a comic picture, doesn't it? Cotterell notes that the warriors' hair is plaited into three strands and that on each head there are three of these plaitings (3x3=9). Moreover, off-center hair positions repress the sun's polarized solar magnetic fields and hair positions are phallic in ways similar to hair styling associated with the tomb of Tutankhamen. These hair styles are to call our attention to the connections between sun spots

and fertility. And finally, if Qin was immersed in mercury in his final resting place, the result, according to Cotterell's reasoning, would provide the number 81 (which is, of course, 9x9). The atomic number of mercury is 80, and by adding Qin to the bath, we get to 81.

Cotterell's *Terracotta Warriors* is fascinating to read for anyone who has visited Xi'an or who is interested in its history and enjoys an imaginary romp through the realm of ideas. It is delightful speculation based on charts and calculations that are at times mind-numbing. There are, however, some problems with the book. In some cases his factual information is incorrect. He refers to Meng Tian (Meng T'ien) as the heir to the throne, when he was a loyal general; it was Fu Su who should have inherited the throne. In other places, he is just plain silly. He suggests that the archers are kneeling because their hands form the number 6 and that is a lower rank than the general, whose number, as represented by the position of his hands, is 9. But the simpler and better answer is that the archers were kneeling because they kneeled to fire their bows. He elsewhere claims that the vanguards had no weapons and were lightly armored because they symbolized the power of love and therefore had nothing to fear, when the historical fact is that these warriors were intended to move swiftly with light clothing and light weapons – probably they have no weapons today because the ones they did have were stolen when the tombs were raided.

The biggest problem with Cotterell's reasoning is that it is so arbitrary. He selects those numbers that can somehow be manipulated to fit his conclusions, but there is no consistency in his approach. Scientists work with formulas that show the relationships between related variables (matter and energy, for example: e = mc2). Cotterell has no such formula, however, and arbitrarily assigns significance to the spokes in one wheel but not another, or the number of joins in the rim because he needs that number. There is no foundation of theory to establish why or how these variables (sections in a wheel rim, for example) are connected.

Cotterell makes greater leaps than a prima dona ballerina. If it was Qin's intention to encode the number 81 by immersing himself in mercury, for example, it would have required that the ancients know of the atomic structure of elements, information which was only available some 2,000 years later. Unless they just "had a hunch".

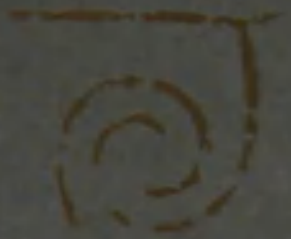
Then there are the chariots found in the pits. Each chariot wheel, Cotterell argues, contains 30 spokes, and each rim is made from 6 pieces of hardwood. Six times 30 is 180. Double that (2 wheels) and you get the 360 angular degrees of the radiating sun. But it could simply be anything round, and if you count the pieces of hardwood in the first rim, why ignore them for the second wheel?

To the suggestion that the horses' tails contain clues consider this: The horses' tails more closely resemble the crank handles used in the early days of the automobile than they do the centaur star pattern. Could it be that Qin was foretelling the design of the automobile?

Finally, there seems to be no evidence that Qin Shi Huang had divine insights. He was indeed a capable administrator who ran his country ruthlessly but efficiently. He took advice from those around him like Li Si, whose idea was to unify the script. There is no record of Qin offering special ceremonies to the sun, though all societies have understood the sun's importance – although sometimes intuitively – and worshipped it. Sun bathers prostrate on the beach: it is a kind of bonding with the sun.

Perhaps the Beatles said it best: "Here comes the sun, here comes the sun, and I say it's all right..."

CHAPTER 12



Who Built the Terra Cotta Warriors?

The terra cotta armies are universally attributed to Qin Shi Huang. Well, almost universally. There is at least one dissenting voice, and it is an interesting one. It is the voice of Chen Jingyuan.

First, consider this: history tells us that upon the death of Qin's father in 247 BC, Qin, just thirteen years old, commissioned the construction of an army of terra cotta warriors. It seems such an unlikely action for a thirteen-year-old. Where did the idea come from? Ask Chen Jingyuan.

Chen, 69, is a scholar of architecture who worked for the Jiangsu Territories Resources and House Administration Bureau. As such, he contends that the study of Qin's Mausoleum should begin with a study of its architecture. Chen argues that the location of the warriors (1.5 kilometers to the east of Li Shan Ling) is too far from the Mausoleum.

Chen first saw the Mausoleum in 1957, when he enrolled in the Xi'an Institute of Architecture. Architecture, he says, relates to culture, history, and custom, so one must study the humanities before he studies architecture. In 1961, when the Mausoleum was given the status of a national cultural relic, Chen and his classmates, led by his professor, studied the site with a view to establishing the parameters of the tomb so that proper preparations for its protection could be made. They zoned off an area of between 30 and 40 square kilometers.

In 1974, when the terra cotta armies were unearthed, these figures

were said to belong to the Mausoleum, but Chen was filled with doubt. Why, he wondered, would the warriors be buried so far from the tomb? Including them would make the Mausoleum incredibly large, even containing Mount Li to the south. Furthermore, if they were to be included, they should have been on a direct eastern axis. The Mausoleum and its surrounding walls sit on a NNE axis, and the Pits are located to the north of Qin's tomb. (This arrangement might have been dictated by the position of Mount Li, however, and the Pits are on a direct axis to the east through the center of the Mausoleum city walls, of which the pyramid walls are but a part.)

Further, he concludes, it is a location that has auspicious feng shui: Mount Li, the river, jade, gold. It would have appealed to many Qin rulers, and indeed it was the burial area for other Qin rulers.

Chen's visit to the museum of the warriors in 1976 raised further questions. First, with the chariots. Qin had legislated the width of the chariot axle to be a standard 1.97 meters; the axles of chariots in the pits, however, are not a standard width. Chen reasons that since the axle width was dictated by Qin's law, if the chariots were created for Qin Shi Huang, they would be proper monuments to his legacy and conform to his laws. Secondly, since the time of the famous Emperor Huangdi, each dynasty had had its own official color (see Appendix, page 162). The color of the Qin Dynasty was black; yet the terra cotta armies wore red and green uniforms and purple and blue trousers. As well, Chen has other issues with the chariots and with some of the weapons found in the pits too.

Chen contends that the decision to attribute the terra cotta warriors to Qin was a hasty one. Consequently, he began to submit his writings to the academic journals of CASS (the Chinese Academy of Social Sciences), hoping to attract further discussion on this issue in the academic circle; but no academic journals would take the risk of publishing his work. In 1983, however, his views were permitted to be published as a draft report.

In 1984, "Probe in Nature (Issue 3)" published the full text of Chen Jingyuan's article. In it, Chen argued that based on his own textual research, the real inspiration for those terra cotta warriors and horses should be the Empress Dowager Xuan, who ruled as the Queen of Qin until her son came of age – and for many years after as well. Records in *the Annals of Xi'an Prefecture* relate that Queen Xuan was buried in Li Mountain, 7 kilometers from Xinfeng County, and also near the boundary of Lintong County. *The Annals of Lintong County* also relate that the Tomb of Queen Xuan was in the south of Xinfeng County. It is therefore quite near to the place where the terracotta warriors and horses were unearthed, says Chen.

Empress Dowager Xuan

After the death of her husband, Wu Wang, Dowager Queen Xuan had a relationship with the King of the Yiqu Statelet in today's northwestern Shaanxi Province. She had two sons with him, but then had the King killed so that she could incorporate his lands in the north. One of her sons became Zhao Xiang Wang of Qin, who ruled 306-251 BC.

In 306 BC, Zhao Xiang Wang ascended the throne of Qin. He was just a youth, so his mother the Dowager Empress Xuan acted as the Regent. She was no ordinary person, being a cunning and astute politician who is credited for creating the forge from which Qin would build China. She is said to have clung to power for 41 years, long after her son had become an adult. When Queen Xuan was on her deathbed, Chen suggests, she gave the order that all monarchy subjects were to be buried with her. To his credit, Zhao Xiang Wang was not willing to accommodate such a terrible last wish. Instead, according to Chen's theory, in order to show filial obedience to his mother, Zhao Xiang Wang gave an order to create sacrificial warriors and horses which were the size of a true man. Further, he ordered the construction of objects which

symbolized Queen Xuan's return to the Kingdom of Chu, her native country. Interestingly, Chen says, the hairstyles and costumes of the warriors are similar to those of minority ethnic groups from Chu.

Chen's writings have sparked a vigorous academic debate, one which culminated in a seminar at Xi'an. At the end of the day, however, an article in the December 11th, 1984 *Shaanxi Daily* entitled "Qin Shi Huang, the Ownership of the Terracotta Warriors and Horses: A Summary of Terracotta Warriors and Horses Seminar" attempted to put a lid on the controversy. Indeed, the warriors were the legacy of Qin Shi Huang, the seminar had concluded.

Meanwhile, perhaps driven by the need to swim against the current, to be an individual, Chen Jingyuan continues his research. Moreover, the discussion he began will not easily go away. Yuan Zhongyi, the Director of the Museum at Xi'an and a renowned scholar on the subject of the warriors with many articles to his credit, has also refuted Chen's claims.

In his article in the March 1, 2006 issue of the *Xi'an Daily* ("Mystery of the Terra Cotta Warriors' Identity"), Yuan takes aim at Chen's four main points. For the first point, that the distance of the warriors from the tomb is greater than the customary 300 zhang (690 meters), Yuan argues that the mausoleum, including all the minor tombs, comprises 56.25 square kilometers, a distance that places the warriors well within its boundaries. For the contention that the warriors should have been dressed in black, the official color of the Qin dynasty, Yuan argues that black was the color associated with nobility, not a color worn by the common people, including the warriors.

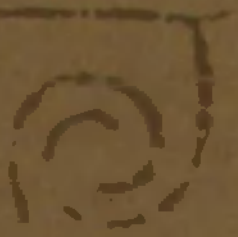
The Empress Dowager Xuan was originally from Chu. Chen uses this fact to explain the similarity of the hair styles and clothing of the warriors to the local Chu minorities and also why the warriors are located close to her tomb. Finally, he suggests that the presence of the character X on some of the warriors' bodies was a traditional character that suggests a further connection to the Empress. When Yuan examined the same

character, however, he found that it was a composite character, and was in fact the name of one of the craftsmen who built the warriors.

Finally, Yuan points out, according to Sima Qian, Empress Xuan died in the October of her son Qin Zhao Wang's 42nd year, in 265 BC, and was buried at Zhiyang near present day Hongqing, a location unrelated to the warriors.

Chen's fourth point is more difficult to dismiss, however. Referring to the varying widths of the wheel axles, Yuan argues that the different styles of the chariots in use would possibly have had differing wheel widths, but his rebuttal does not sound convincing. It is perhaps an area that needs more investigation – as do so many questions related to China's first Emperor.

CHAPTER 13



The Museum at Xi'an

The warriors of the Emperor have been like seeds. Planted over two thousand years ago, these seeds have grown into one of the world's finest and most prestigious museums; as well they have given birth to branches of industry, research, craftsmanship, manufacturing and publication that have spread world-wide.

The discoveries of March 1974 were followed by three years of study. In 1977, Pit 3 was uncovered, and in 1978, Pit 1. In 1980, the museum became officially the "Emperor Qin's Terra Cotta Warriors and Horses Museum". In 1987 it was designated as a UNESCO World Heritage Site.

Restoration

Putting Humpty Dumpty back together is proving to be more than just time consuming; it requires the development of new technology as well. The warriors on display appear dull because their bright glazes have disintegrated in the open air. Qin's craftsmen lacquered then colored the figures with mineral paints. Unfortunately, exposure to the air evaporates the water trapped in the lacquer, causing the paint to flake. Technicians today have two ways of solving this problem, but the preferred one is the use of a stabilizing chemical (HEMA) and an electron beam which then seals the paint. The museum is in no hurry to unearth all the treasures at Xi'an. Many more warriors remain underground than have been restored,

and technicians have allegedly yet to stick a shovel into Qin's tomb, that pyramid-shaped repository of legendary treasures.

What has already been restored is remarkable. You could even say that the job at Shanghai Number 9 Hospital, where each day eyelids and noses go under the knife, is routine compared to the work at Pit 1 in Xi'an. There, 10 columns of warriors, with each figure weighing better than 100 kilograms, stretch into what seems like eternity. Each has emerged from the pieces of itself, so that today, except for their faded colors, the warriors look very much like they once did.

It is not a job for someone in a hurry. Some figures were more or less intact, but most are not. One horse was in 1,500 pieces, and a chariot in 3,000. Each fragment is first labeled to indicate where it was found, then sorted and taken to the head of Pit 2 to be reassembled with epoxy resin. Imagine a jigsaw where the contents of several large puzzles have been scrambled together. Now imagine assembling the puzzle without a picture to follow. Now suppose the edges were not cleanly die-cut, so that it is hard to tell if pieces really match. This is what the workers at the pits must face. Some days, if a worker places only one piece, it is a good day. It takes on average three months to rebuild one warrior.

Famous Visitors

The Museum has hosted some famous visitors. The first dignitary, on May 5,1976 was Indonesia's Prime Minister, Li Guang – appropriate, since it would have been the meeting of kindred spirits. At the opposite end of the political spectrum, and demonstrating how the warriors have sparked a widespread interest, was Mahatma Gandhi. The museum has also welcomed many U.S. Presidents, Queens and other dignitaries and heads of state from around the world.

As well, since 1994 the museum has regularly assembled collections for touring. The Xi'an warriors have set their terra cotta feet in cities from

Pieces from Pit 3, showing the enormity of the task facing the technicians

Restoration work

California to Rome and they have crossed the East China Sea to Japan several times.

Conclusions

Qin Shi Huang was a great man among other great men. His life was bracketed on one side by Alexander the Great, who died just 64 years before Qin was born, and Julius Caesar, who was born just 110 years after Qin died. Comparisons between Alexander and Qin leap from the pages of history. Alexander, like Qin, took power when he was just twenty, and both men led successful military campaigns, conquering much territory in a little space of time. Qin subjugated all the known areas of China; Alexander conquered Asia. In building their empires, each man had a vision few could comprehend, and as a result, each leader made such

heavy demands on his people that toward the end of their reigns, there was growing dissent in both China and Asia. Finally, before his death, Alexander was designated as a god; Qin, through the terra cotta warriors, hoped to become immortal – indeed many see him in that light.

Caesar and Qin are more different, yet there are striking similarities. Caesar was never the King of Rome, though according to most, he desperately would have liked a crown. He lived during a time of unrest and factions, a time of intrigue. He waged five successful military campaigns, and then waged a civil war to oust Pompeii and gain control of Rome. He was perhaps close to achieving his goal when he was assassinated in Rome at the age of 56.

Today, the remains of Alexander's legacy are less visible. His name endures in Alexandria, a city whose culture 2000 years ago shone like a beacon for the world; but today that light is dimmed. Rome's place in the world, too, has diminished with time. After the death of Caesar and the civil wars that followed, Rome was never able to hold on to the territories she conquered. Only China still feels the seemingly timeless grip of ideas that have endured beyond the life of Qin. Perhaps one reason is that as well as creating a country, Qin unified it with a common language, common standards, and transportation links and an administrative structure.

I began with the question Why? But at the end of the story – if there is an end – what still sits like a large stone in this lake of information is "If...". I think how history turns on small decisions: if Li Si had not agreed to support Zhao Gao's treachery, what would China have looked like today? If Lv Buwei had not been conducting business in Handan.... If Prince Ying was executed in Zhao.... What remains for me, too, *is a deep respect for ancient cultures and their inventiveness* in the undertaking of tremendous projects, especially without the resources that we have today.

I am also mindful of the technologies and achievements (the chrome

At Qin's Great Wall near Baotou in Inner Mongolia
Today's China rests on a foundation that Qin established over 2000 years ago

plating of steel, for example, and the use of wormwood in the effective treatment of malaria) that were developed by past civilizations only to become lost, covered by the dust of time; how important ideas must wait for some future farmer's shovel to strike into them and bring them to light. It has only been 30 years since the farmers uncovered the first of the statues.

What else is hidden by a few meters of soil?

APPENDIX

Development of the Calligraphy Paintbrush

Meng Tian improved the design of the calligraphy paintbrush. Previously, bristles had been attached outside the shaft. Meng Tian altered this design by inserting the bristles inside a hollow bamboo shaft to improve on the performance of the brush.

Symbols of Dynasty

Throughout the different dynasties, emperors favored different **colors**.

Huangdi: yellow
Xia: green
Shang: white
Zhou: red
Qin: black
Han: yellow

With the **Han** dynasty, **yellow** became permanently fixed as the color of the Emperor, and its use was restricted exclusively to him.

Trees were also related to rank.

pine: emperor
cypress: lords
poplar: officials
elm: bureaucrats and non-commissioned officers, those just above common soldiers.

Huangdi

Since the Han dynasty, the official color of the emperor has been yellow. Emperors wanted to re-establish their connection with the legendary Huangdi.

Huangdi, who ruled 4,000 years ago, was a famous leader in Ji Shui in the Northwest of China. The son of a leader, he showed early signs of brightness. He could speak at an early age and knew all – like a god. There were five elements, and Huangdi worshipped the earth which was yellow. He overtook Yandi to eventually become the leader of the entire land. Huangdi introduced improvements in agriculture and ranching

His tomb is 180 kilometers from Xi'an.

Sima Qian

The philosophers Confucius and Mencius believed that people were basically good, and if given the proper environment and instruction, their behavior would be appropriate. However, the state of Qin, influenced by Shang Yang, Han Fei and Li Si, adopted the legalist view: people were not perfectible; instead, they were motivated by fear and greed. Legalism dominated the state of Qin, but during the Han dynasty which followed it, that philosophy was replaced by a blend of Confucianism and soft legalism.

When the great Han historian Sima Qian spoke out in defense of his friend General Li, who had led a mere 5,000 troops north of the Great Wall to battle 80,000 Xiongnu soldiers, and was forced to surrender, Emperor Wudi gave Sima Qian these options as punishment for his dissent: execution or prison and castration. Fortunately for history, Sima Qian chose castration, trading his testicles for the right to complete his text. (About half of his *Shi Ji* was completed in prison.)

Naming the Emperor

Although he was formally the Son of Heaven, the power of the emperor varied between emperors and dynasties, with some emperors being absolute rulers and others being figureheads with the actual power lying in the hands of court factions, eunuchs, the bureaucracy or other noble families. The king, or Wang (王), was the Chinese head of state from the Zhou to Qin dynasties. After that, Wang (sometimes translated "prince") became merely the head of the hierarchy of noble ranks. The title was commonly given to members of the Emperor's family and could be inherited.

The title of emperor was transmitted from father to son. Usually the first born of the queen inherited the office, but this rule was not universal and disputes over succession were the cause of a number of civil wars. Unlike the situation in Japan, where the Emperor had nearly divine status, Chinese political theory (Mencius' the "Mandate of Heaven") allowed for an overthrow of a dynasty: it was appropriate that an emperor who did not rule wisely be replaced by a rebel leader. It was generally not possible for a female to succeed to the throne and in the history of China there has only been one reigning Empress, Wu Zetian of the Tang dynasty.

Until the time of Qin Shi Huang, Emperors had different names in life than they had in death.

Some helpful tips (from *Wikipedia*) for reading a list of sovereigns.

Qin Hui Wen Wang 秦惠文王 (Ying Si 嬴駟)	337-311 BC
Qin Wu Wang 秦武王 (Ying Dang 嬴蕩)	310-307 BC
Qin Zhao Xiang Wang 秦昭襄王 (Ying Ji 嬴稷)	306-251 BC
Qin Xiao Wen Wang 秦孝文王 (Ying Zhu 嬴柱)	250 BC
Qin Zhuang Xiang Wang 秦莊襄王 (Ying Chu 嬴楚)	249-247 BC
Qin Shi Huang 秦始皇 (Ying Zheng 嬴政)	246/221-210 BC

All sovereigns starting from the Tang Dynasty are referred to by using their temple names. They also had posthumous names but these were less used, except in traditional historical texts. The situation is reversed before the Tang as posthumous names are used. For example, the posthumous name of Tang Taizong Li Shimin was Wen Di (文帝).

For emperors before the Tang dynasty, use the name of the dynasty plus the posthumous names (Han Wu Di).

For emperors between the Tang dynasty and the Ming dynasty, use the name of the dynasty plus the temple names (Tang Taizong).

Before the time of Qin Shi Huang, the characters *huang* (皇"god king") and *di* (帝 "sage king") were reserved for mythological rulers and were used separately and never consecutively. After Qin Shi Huang, the emperor or *Huangdi* of China then became the title of the head of state of China from the Qin dynasty (221 BC) to the fall of the Qing dynasty in 1911.

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