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The Horse in Pre-Imperial China

Abstract

This dissertation investigates the role of the domestic horse in pre-imperial China motivated by the rise of studies on the horse as an interdisciplinary field. Among archaeological finds of the pre-imperial era, horse corpses and horse harnesses have been an essential part of cultural relics. Documentary sources on the horse can be traced back to the earliest Chinese writings. In this dissertation it is suggested that the domestication was a long, staged process, and the transmission route of the horse from the Urals to China via Central Asia will be proposed.

A comprehensive survey of the archaeological remains related to the horse in the pre-imperial era constitutes the second main aspect of this dissertation, while documentary sources focusing on the use of the horse in civil and military affairs and the interaction of the horse and human beings. After comparing the role of the horse in China with that in other ancient civilizations, such as Greece, India and Persia, the discussion will end up with a summary of the contributions of the domesticated horse to pre-imperial China. Thousands of miles of roads were constructed for equestrian transport, and politically the horse accelerated the pace of militaristic expansion and consolidation of territory. The use of the horse also facilitated agriculture and trade, and thus propelled the society forward into the imperial era.

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**THE HORSE IN
PRE-IMPERIAL CHINA**

Xiang Wan

A DISSERTATION

in

East Asian Languages and Civilizations

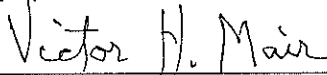
Presented to the Faculties of the University of Pennsylvania

In Partial Fulfillment of the Requirements for the

Degree of Doctor of Philosophy

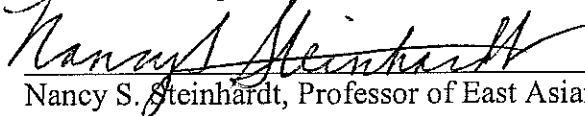
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To Qiqi, our companion

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ABSTRACT

THE HORSE IN PRE-IMPERIAL CHINA

Xiang Wan

Victor H. Mair

This dissertation investigates the role of the domestic horse in pre-imperial China motivated by the rise of studies on the horse as an interdisciplinary field. Among archaeological finds of the pre-imperial era, horse corpses and horse harnesses have been an essential part of cultural relics. Documentary sources on the horse can be traced back to the earliest Chinese writings. In this dissertation it is suggested that the domestication was a long, staged process, and the transmission route of the horse from the Urals to China via Central Asia will be proposed.

A comprehensive survey of the archaeological remains related to the horse in the pre-imperial era constitutes the second main aspect of this dissertation, while documentary sources focusing on the use of the horse in civil and military affairs and the interaction of the horse and human beings. After comparing the role of the horse in China with that in other ancient civilizations, such as Greece, India and Persia, the discussion will end up with a summary of the contributions of the domesticated horse to pre-imperial China. Thousands of miles of roads were constructed for equestrian transport, and politically the horse accelerated the pace of militaristic expansion and consolidation of territory. The use of the horse also facilitated agriculture and trade, and thus propelled the society forward into the imperial era.

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Chapter 1: Introduction

The present dissertation is intended to provide a panoramic view of the domestic horse in pre-imperial Chinese society, the first of its kind written in English. The three components of this dissertation topic: “the horse,” “pre-imperial” and “China,” all may be randomly defined. If standing alone, “the horse” should be replaced with the more precisely defined “the domestic horse.” “Pre-imperial” refers to the period between the literarily-attested late Shang 商 Period (beginning ca. 1250 BCE) centered at the Yinxu 殷墟 (lit. the Ruins of Yin) site in modern Anyang 安陽, Henan Province and the establishment of the Chinese Empire by the First Emperor of the Qin 秦 (Ying Zheng 嬴政) in 221 BCE; As for “China,” its borders change through history, so to define the term “China” is far beyond the scope of this dissertation.

Nevertheless, when the three terms above constitute the topic of this dissertation, “The Horse in Pre-Imperial China,” they redefine themselves in a mutual manner. As a customary term, pre-imperial China refers to both the documentarily and archaeologically confirmed era of “dynastic China” (that is, after the “legendary” dynasty of Xia¹ and the documentarily unattested early and middle Shang) before the imperial period. In this regard, the domestic horse is associated with the historical

¹ In recent years, many Chinese scholars tend to believe that the Xia dynasty, being ubiquitous in Chinese documentary sources, is represented by the Erlitou 二里頭 culture in Yanshi 偃師, Henan Province (see, for example, Du and Xu (2005), in which leading Chinese archaeologists express their various perspectives on the date and characteristics of a postulated “Xia culture”). The trend appears to be converse overseas, as summarized in Allan (2007).

background of the emergence and early development of the Chinese civilization, thus it pertains to the human exploitation and the relationship between the horse and humans rather than their wild counterpart does.

1, Outline of the dissertation

The domestic horse, *Equus ferus caballus*, is one of the most important domesticated animals in the history of human civilizations. The domesticated horse evolved in early Chinese civilization and served a variety of functions such as food, transportation, military affairs, communication, gift exchange and rituals. Relying upon both literary records and material evidence, in this dissertation I explore the roles that the horse played in pre-imperial China.

Here horse is strictly taken to refer to the domestic horses. Although wild horses, i.e., the Przewalski's horse, *Equus ferus przewalskii*, are still present in Northwest China and Mongolia, they are not discussed in this dissertation except in the relevant sections of Chapter 2.²

While a wide array of horse bones have been discovered in several Neolithic sites in Northern China,³ it is known that these bones represent wild rather than domestic horses. At present, most scholars believe that the horse was first domesticated on the Eurasian Steppe (Linduff 2003; Mair 2003; Anthony 2007: 196-199; Kelekna 2009:

² For a comprehensive study of the history of the Przewalski's horse, see Boyd and Houpt (1994); for the current status of the Przewalski's horse, see Wakefield et al. (2002).

³ For a complete list of horse bones unearthed from Neolithic sites in China, see Liu and Chen (2012: Appendix).

28-29; Warmuth et al. 2012). Therefore, the study of the domestic horse in early China concerns an imported animal. While there is some dispute as to whether this actually signifies imported horse herds, Levine (2006) and Forster et al. (2012) suggested that horses from wild populations were introduced to domestic herds as the original domesticated population expanded. Recent genetic studies do not preclude the possibility that ancient Przewalski horses contribute to the ancestry of the domestic horse in China. (Cai et al. 2009, Lippold et al. 2011, Liu and Chen 2012: 115) Although this makes the genetic origin of the domestic horse in China complicated, the fact that the technique of domestication, as well as herds of primal horse population, originated from the Steppe, is undeniable.⁴

In Chapter 2, I shall trace the origin of the domestic horse back to the Steppe, and to the age of the “pastoralist pioneers” (Kelekna 2009: 2) in the 4th millennium BCE. There I also will discuss transmission routes of the horse into China.

In Chapter 3, I will examine horse and chariot burials from the Yinxu period down to the Warring States period, along with social and historical issues informed by the archaeological discoveries. The first unequivocal evidence of the domestic horse in China is the horse and chariot burials at the Yinxu site of the late Shang period, where harnessed horses were buried for funerary or ceremonial sacrifice, often along with chariots. These burials constitute one the most lavish ritual assemblages of

⁴ It should be noted that the biological change undergone by horse population in adaption to human intervention is to be distinguished from human behavior that is the partial cause of that biological change. Strictly speaking, only the former is to be reserved for the term “domestication”. However, the process of horse domestication might have occurred by virtue of certain human behavior.

ancestral worship in pre-imperial China; they play a vital role in our understanding of the development of chariotry, burial type and bronze metallurgy. In the mid-late Western Zhou period, chariot and horse burials became an integral part of the institutionalized ritual reform (Shaughnessy 1999, Falkenhausen 2006, Wu 2009), and later they bespoke the ambition of the competitive monarchs of the Spring and Autumn feudal states. The discussion of these burials in this chapter, along with interred horses and chariots in the Northern Zone area, may shed light on the vicissitudes of Chinese society during the Shang-Zhou period.

Chapter 4 mainly is a discussion based primarily on documentary sources of the significance of the horse in civil and military affairs in pre-imperial China. Ritual and warfare are the principal events of a pre-imperial Chinese state. The horse is employed actively in various forms of ritual and warfare. The chapter will mention the exploitation of the horse in sports, hunting and agriculture as well. The legendary anecdote of Tian Ji's chariot races will be examined in detail as a reflection showcasing how the once ritually significant royal hunting became a game of leisure, illustrating transition in early Chinese society.

In Chapter 5, I focus on the relationship of the horse and the human being, discussing the reflection of the horse in the early Chinese breeding practice and philosophical and mythological treatises attributed to renowned thinkers. Firstly, I will rely on oracle bone inscriptions to review the institution of horse breeding and the use of the horse as tribute in the Shang dynasty. The introduction of the more

elaborate Zhou royal horse breeding institutions and gift bestowal, as well as horse breeding and the practice of popular horse husbandry in the feudal states, will also be reviewed. Other aspects of the human-horse relationship, such as the role of the horse in early Chinese philosophy, mythology and cosmology, will also be included in this chapter. I will survey the Confucian anthropocosmic view, the Daoist holistic view and the treatise on the white horse by the Logician Gongsun Longzi, and further discuss the ecological impact of human-animal relationship.

A more macroscopic view of the domestic horse and early Chinese civilization will be the main focus of Chapter 6. I will review the relationship of the role of the horse in the formation of early states and the expansion of urbanism in the Late Shang and Western Zhou period, and the adoption of cavalry and the rise of the Qin-Han Empire. The main thesis in this chapter is based on the widespread exploitation of the horse, along with a closely related factor, the road system. A comparative analysis with ancient Egypt, Anatolia, Mesopotamia and the Steppe in the Bronze Age, and with Greece, Persia and India in the early Iron Age will complete this chapter.

The last chapter will incorporate the horse in pre-imperial Chinese thought, horse sacrifice as a ritual and military tradition, and a summary of the contribution of the horse to early Chinese civilization.

2, Original contribution

There are three major original contributions in this dissertation. The first will be

an annotated translation of pre-imperial and Han texts relevant to the horse in the pre-imperial period. There are many sources, ranging from the oracle bone inscriptions to the *Shi jing*, and all the way to the *Han shu* that mention the horse; the biggest corpus is the *Zhou li* (*juan.* 33). In addition to studies such as the institution of Zhou horse breeding as reflected in the *Zhou li* and other texts, pre-imperial horse sacrifice as seen in the later *Shi ji* and *Han shu* will also be integrated into the dissertation. I will attempt to distinguish and to compare the idealized system of the *Zhou li* and the horse breeding practices based on archaeological evidence.

The second original contribution is the discussion of the horse and its relationship with early Chinese civilization. The rise of feudal states in Western Zhou⁵ constitutes the beginning of the expansion of Zhou civilization from the mid-Yellow River valley to the neighborhood of the Central Plains. At that time, the horse served as a means not only of transportation of humans and goods but also of communication of information. The utilization of horses thus supported the expansion of the Zhou rites and customs, as well as its administration into remote places, and facilitated communications. Subsequently, the development of horsemanship in the Warring States, namely the adoption of horse riding and cavalry in China, further strengthened the relationship between remote regions and the Central Plains, and eventually encouraged the establishment of the Qin-Han empire based on horse-drawn cart transportation, horseback communication (especially the postal system), and massive

⁵ Also, probably in the Shang dynasty already, see Chapter 6 for detailed discussion.

cavalry army.

The third original contribution is a survey of the archaeological remains relating to the horse in the pre-imperial era. I will both focus on horse and chariot burials, and review artifacts related to the horse. These include the horse harnesses and chariot fittings as evidence for horse domestication and the introduction of bronze metallurgy into China (cf. Wu 2002; Shao 2004; Jing 2010). This dissertation will utilize both literary sources and material evidence so as to form a clear picture of the role the horse played in pre-imperial China.

3, Previous scholarship

Academic research on domestic horses in pre-imperial China can be traced back to the middle of the twentieth century. The first comprehensive research on the history of horse breeding was conducted by Xie Chengxia 谢成侠 (1955), with two chapters on horse breeding of the Shang and the Zhou dynasties. It is a work primarily based on documentary sources. Hayashi Minao 林巴奈夫 (1959a, 1959b, 1960) finished the first survey of the horse in pre-imperial China based on both archaeological and documentary evidence. In the western world, Magdalene von Dewall (1964) first discussed problems of the horse as well as the chariot in the Shang and the Western Zhou dynasties, based on both documentary and archaeological sources.

Decades after these precursors, the study of the horse in pre-imperial China became prevalent in the 1980s and 1990s. Wang Yuxin 王宇信 (1980) first surveyed

the role of the horse and horse breeding in the Shang dynasty, relying chiefly upon the oracle bone inscriptions. Goodrich (1984) discussed the beginning of horse riding in China as well as early Chinese horse saddles. Another important study at this time was Olsen (1988), who compared the social influence of the horse imported into China from Ferghana in the Former Han period (206-9 BCE) and that of the horse introduced into China in the prehistoric period. The last noteworthy contribution to the study of the horse in pre-imperial China during the 1980s is Shaughnessy (1988), with a thorough, groundbreaking argument about the origin and development of chariotry in China and a discussion of possible horse riding in the Shang-Zhou period. Lu Liancheng (1993) provides the first general archaeological survey of chariot and horse burials in ancient China, along with analysis of the use of horse and chariot in the Shang-Zhou period. Also from unearthed materials, Sterckx (1996) studied an ancient horse ritual recounted in the *Shuihudi* 睡虎地 manuscript “Rishu 日書,” (Day books) as well as a general discussion on horse sacrifice. All these works utilized both archaeological and literary evidence, and focused on one specific aspect of the exploitation of the horse in pre-imperial China. Newly excavated manuscripts from the Tomb of Marquis Yi of Zeng 曾侯乙 also facilitate studies on Warring States exploitation of the horse, which has been studied by Ishiguro Hisako 石黒日沙子 (1998). In addition, a linguistic study of the horse in East Asia, Janhunen (1998), tentatively traced the origin of the word “horse” in major East Asian languages.

In the 21st century, more scholarly works about the horse in pre-imperial China

were published, and the relevant research became more specialized. Two leading archaeologists, specialists in zooarchaeology, Yuan Jing and Rowan K. Flad, collaborated on articles on the early development of horse breeding in China. Their works, such as Yuan and Xu (2001), Yuan and Flad (2002, 2003), Yuan (2004a, 2004b), Flad et al. (2009), among others, survey the domestication of the horse in late prehistoric and early historic China, the origin of the horse in China, the horse and the society, the use of the horse as a food source, as well as multiple techniques of horse breeding. Linduff (2003) provided an in-depth analysis of the appropriation of horses in Late Shang period China using archaeological and art-historical data from the East Asian Heartland and its Northern and Northwestern environs. Wu Xiaoyun 吳曉筠 (2009) comprehensively studied the horse and chariot burials in the pre-imperial era, proposing the periodization of these burials, as well as a discussion of the selection of buried horse and chariot. Zhao Haizhou 趙海洲 (2011) is a similar work focusing on the period from the Spring and Autumn period to the Han dynasty, characterized by its detailed stylistic and typological studies. Liu and Chen (2012: 386-388) proposed, contrary to most extant researchers, that the horse was domesticated locally, exhibiting biological heritage of Przewalski's horse, based on artifactual, inscriptional and zooarchaeological evidence.

Mainly based on historical sources, Yates (2003) surveyed the role of the horse in early Chinese military history as well as ritual, philosophy, mythology and veterinary manuals. This article also pays special attention to the development of chariotry and

cavalry in early China. With abundant data from early Sinitic and other Eurasian languages, Mair (2003) discussed the role of the horse in late prehistoric and early historic China from a linguistic perspective. A detailed monograph concerning the use of horse and chariot in the State of Chu 楚 by Xiao Shengzhong 蕭聖中 (2011) based on the scrutiny of bamboo strips unearthed from Tomb of Marquis Yi of Zeng extends the tradition of textual research.

Genetic studies focus on the scheme of the early domestic horse in China. Recent studies have found that both modern and ancient horses from China exhibit abundant genetic diversity within female-inherited mitochondrial DNA (Cai 2009; Lei et al. 2009). Lippold et al. (2011) argue based on the male-inherited Y chromosome that modern domestic horses in China display no sequence diversity. Thus, a possible scenario mentioned in Levine (2006) and corroborated by the archaeological study of Warmuth et al. (2012) is favored at present. This envisages that the horse was initially domesticated on the Eurasian Steppe and transmitted to East Asia, with newly domesticated local mares complementing and thus expanding the population.

There are also studies of the horse in ancient Eurasia and from a worldwide perspective. Kelekna (2009) is the latest study of the horse in human history. It includes a chapter on the horse in China and the role that the horse played in other parts of the world, and is a valuable reference. In Anthony (2007), the horse is depicted as the main companion of the Indo-Europeans when they spread across the Eurasian continent in late prehistory. This book also provides many thoughtful ideas

about the contact and interaction of ancient peoples along the Steppe. Drews (2004) incorporates a detailed study of the early stages of horsemanship in Europe and most parts of Asia, thus providing comparative information for the same topic in China.

Chapter 2: Domestication of the horse and possible transmission routes to China

1, The horse as domesticated animal

Animal domestication is not only regarded as a repetitive activity of reorganizing wild species into domestic forms according to the interest of people, but also a natural co-evolutionary process resulting from both intentional human intervention in the reproduction of other animal species and from selection operating in environments predominantly structured by humans (Albarella et al. 2006; Gifford-Gonzalez and Hanotte 2011). Many species of animals have successfully been domesticated during the course of their symbiosis with the humankind. The oldest and most phenotypically diverse domestic animal, dog (Dayan 1994; Germonpré et al. 2009), was perhaps first successfully bred in ca. 14,000 BCE in Southern China (Pang et al. 2009). Other major food mammals, pigs, goats and possibly sheep, were domesticated as early as 9,000 BCE (Flad et al. 2009; Gifford-Gonzalez and Hanotte 2011).

The horse, or *Equus ferus caballus*, was domesticated at some time later than major domestic food mammals. The domestication process of the horse began around 3500 BCE (see below), after other main domesticated mammals: dog, goat, sheep, pig, cattle, and cat, had been domesticated.⁶

It is unlikely that all animals were domesticated initially for food. For example,

⁶ Hunting and gathering tribes in the Old World began to domesticate dogs, sheep and goat in the Late Paleolithic Age and Mesolithic Age, and genetic evidence has indicated that pigs were initially domesticated in the Near East in around 9000 BP (Giuffra et al. 2000). As the human skill of animal domestication developed, cattle and cats were eventually tamed. However, the horse remained as a target of the human hunters until the end of the Chalcolithic Age, when early domestication began on the Steppe.

the prevailing theory concerning the domestication of the dog is that it became domesticated because of a mutualistic or commensal relationship with humans first in the hunting-gathering societies. Dogs (with their wolf ancestors) and humans benefit each other in this relationship. Humans' upright gait and color vision benefited dogs with larger range to see predators and prey, as well as better visual discrimination; camp dogs would also have benefitted from human tool use, as in bringing down large prey and controlling fire (Groves 1999). Camp dogs also benefitted humans a lot by cleaning up food scraps, alerting the camp to the presence of predators or strangers, and most significantly, using the sense of smell to assist with the hunt (Tacon and Pardoe 2002).

Likewise, cats were domesticated at the time of the agriculture revolution when rodents and birds became the main vermin to human food supply and health. Either by artificial selection or by natural selection, cats adapted to hunting the vermin found around humans in granaries and villages.⁷

Domestication of major food mammals developed in human societies no later than the rise of agriculture (Kuijt and Goring-Morris 2002; Simmons 2007). Early domestication of major food mammals is followed by the so-called "Secondary Products Revolution" (Sherratt 1981, 1983), and these secondary products brought about idiosyncrasy in some specific regions of the old world (Marciniak 2011). For example, pigs were domesticated for hides, bristles and bones. Similarly, goats and

⁷ See O'Connor (2007) and Driscoll et al. (2009) for detailed discussion.

sheep were kept for milk, hides and wool products (and also dung).

The domestication of cattle, including two main subspecies, *Bos Taurus* and *Bos indicus* (zebu), regarded as either two closely related species, or two subspecies of one species however, is a unique event because cattle not only provide meat, dairy, hides and dung like pigs, goats and sheep, but also serve as work animals, like dogs and cats. After the advent of agriculture, cattle pulled primitive scratch-plows across the fields (Anthony 2007: 162). When four-wheel wagons were developed in the Eurasian Steppe, cattle were first employed to pull heavyweight wagons (Fansa and Burmeister 2004).⁸

Like cattle, the horse was tamed as both a food mammal and a working animal, and the initial purpose of horse domestication is probably for food (Anthony 2007: 200-201). David Anthony pointed out that the horse provided humans on the Eurasian Steppe adequate supply of winter meat, and Levine (1998: 94 ff.) summarized that horsemeat and horse milk contain high protein and low fat, and are low in saturated and monounsaturated fat and high in polyunsaturated fat. Humans consumed wild horsemeat, and then attempted to tame them for food.

⁸ The earliest possible attestation of a four-wheel wagon is a motif shown on a pot excavated in 1976 at Bronocice, a village near Krakow, Poland. The absolute radiocarbon date of this pot is circa 3637-3373 BCE, with the median calibrated to 3520 BCE (Bakker et al. 1999: 785-86). This motif stemmed from the Funnel Beaker Culture, a north central European culture of late Neolithic Europe dated ca. 4500 – 2700 BCE. Despite a common acknowledgement that the motif represents a wagon, some scholars argued that the Funnel Beaker Culture obtained wheeled vehicles by 3500 BCE from the late Tripolye Culture northwest of the Black Sea, a strong candidate for the Proto-Indo-Europeans (Parpola 2008: 19). However, the calibrated date of the Bronocice pot made other scholars (e.g. Hälsler 1994) to suggest an independent origin of four-wheeled vehicles in Middle Europe.

Nevertheless, the horse was so strong and swift that it resisted domestication for a considerably long time. The Cro-Magnon hunters regarded the horse as a food source, as shown by evidence found at Salutre in France where the bones of some 10,000 horses were found driven over a cliff by the Cro-Magnon men with spearheads to hunt these horses (Parker 2012: 7). Also, the French caves at Lascaux and Pech-Merle are considered to have been painted around 17,000 years ago, and the Chauvet-Pont-d'Arc petroglyphs dating to some 31,000 years before present (Chauvet et al. 1996). The images of wild horses predominate the content of paintings in these caves (Curtis 2006: 96-97, see also Pruvost et al. (2011) for a detailed study that matches the genotype of the wild horses with the phenotypes in the cave arts at Pech-Merle as an example).

According to Anthony (2007: 200-201), it was not until 4800 BCE that the horse was tamed for food on the Eurasian Steppe, long after pig, goat, sheep and cattle. This period is only the first stage of horse breeding and domestication.

The next stage, logically speaking, could be horseback riding or chariot driving region-specific on the Steppe. Although the first undisputed evidence indicates that the horse was used to pull chariots at ca. 2000 BCE (see below), horses can be ridden without bits by using ropes or leather. Otherwise, the first use of horses was pulling a wagon, a cart or a plow. The familiar role of the horse as chariot-pulling animal and cavalry horse began later. However, transportation and military usage became the main role of the horse since the 2nd millennium BCE, and by that time food

consumption had become only supplementary in most of the Old World, as horses had been generally viewed as companions in the daily life of the pastoral tribes on the Steppe.

Scholars have long argued about the date of the domestication of the horse. However, it has been a consensus that there is no certain time point of domestication. The horses in Paleolithic petroglyphs as early as ca. 30,000 BCE are certainly wild horses, but until chariot and horse burials on the Steppe (ca. 2100-1700 BCE) can we say that the horse, as a means of transport, had already been domesticated. Evidence in between is mostly indirect, including dental evidence of laboring, skeletal samples by size and variability of horse populations, as well as the life patterns of human cultures. All in all, we are now able to determine two stages of horse domestication: taming for food and beginning of breeding (ca. 3500 BCE), and domestication for chariot pulling (ca. 2100-1700 BCE). The two stages are conjoined and concomitant with the advent of spoked wheels and bronze metallurgy in the Andronovo culture (Häusler 1994; Anthony 2007, see below).

2, The process of horse domestication on the Steppe

Although there has been a chronic debate about when and how the horse was domesticated,⁹ there is little dispute on the location of initial horse domestication: the

⁹ The main debate within the field of archaeology was between two outstanding scholars, David Anthony and Marsha Levine. Both of them, while often holding conflicting opinions, raised many valuable discussions and much decisive evidence for the scholarship of the domestication of the horse.

Eurasian Steppe. Specifically, two archaeological sites: Dereivka at Ukraine and Botai at Kazakhstan have attracted the interest of scholars. Both sites include plenty of horse skeletons buried with human tombs, and horses in both sites occupy the highest proportion of animals (Anthony 2007).

The Dereivka settlement on the Dnieper River was identified with the Sredny Stog culture dated from the 4500-3500 BCE. A head of a stallion was found at Dereivka. On the lower second premolars of it, a more than 3mm deep bit wear was discovered (Anthony et al. 1991). However, the radiocarbon analysis has shown that the date is much later, ca. 800-200 BCE. The horseman was not a Sredny Stog man but an Iron Age Scythian (Anthony 2007: 206-15)¹⁰.

Then David Anthony and other specialists on early horse domestication turned their attention to Botai culture in Northern Kazakhstan, as well as to some other Sredny Stog settlements to show bit wear on horse molars from these communities. They demonstrated that even organic bits, such as leather or rope, might lead to significant wear facets, which are not attested on the premolars of wild horses (Anthony et al. 2006). Nonetheless, Marsha Levine pointed out that the bit wear probably resulted not from the friction of the molar against a bit of a bridle but rather against opposing molars as a consequence of abnormal and poor occlusion (Levine 1999: 11). She also noted that the age structure of the horses slaughtered at Botai represents a natural demographic profile for hunted animals, not the pattern expected if

¹⁰ For a detailed summary of the arguments on Dereivka, see Drews (2004: 10-16).

they were domesticated and selected for slaughter. In his recent article in *Sino-Platonic Papers*, siding with Levine, John Didier rebuffed all other evidence provided by Anthony (Didier 2009: 16-18). Both Levine and Didier believed that horses at Botai were hunted for food, and the skeletal remains show that the horses buried at Botai were in fact wild horses.

Recent evidence that has been provided to buttress the claim for horse domestication at Botai is provided by Outram et al. (2009). They combined evidence from metric analysis of metacarpals, pathological analysis, and analysis of fatty acids from horse milk in ceramics, in order to prove that the horses at Botai were domesticated. Again Didier refuted all their arguments with meticulous examination (Didier 2009: 18-25). Therefore the thesis that the horse was finally domesticated in 3,500 BCE is far from accepted at present. As Didier says, it is just “the beginnings of human management of horses” (Didier 2009: 25). As of today we cannot preclude the possibility that later direct evidence appears, but so far we might just view horse domestication as a long process that began at Botai and matured in the stage of chariot pulling.

If we consider chariot pulling as full-fledged horse domestication, it is still clear that the domestication of the horse occurred on the Steppe. Thus far there is no direct evidence of horse-drawn vehicles before the chariots, although wheeled vehicles have long been considered to have been invented at around 3500 BCE (Parpola 2008:

6-7).¹¹ More than fourteen chariot burials were found southeast of the Urals between the upper Tobol and upper Ural Rivers in the 1970s, at two sites called Sintashta and Petrovka. These chariot burials were dated to ca. 2100-1700 BCE, at this time the oldest known chariots in the world. There are also remains of as many as eight horse sacrifices discovered at these graves (Anthony 2007: 371-75).

Anthony (2007: 397-405) critically challenged the orthodox view of the Near Eastern origin of the chariot. Essentially the oldest steppe chariots, with the radiocarbon dates of earlier than 2000 BCE, predate any of the dated chariot images in the Near East. In contrast, the earliest images of horse-drawn chariots in the Near East first appeared about 1800 BCE. Anthony has convincingly proved that any “chariot” images before this date were carts or wagons pulled by other equids such as asses or onagers.

In sum, if we accept both the most conservative view of Didier and Levine that the horse had just begun to be managed at the Sredny Stog culture and the Botai culture in ca. 4000-3500 BCE, and Anthony’s opinion on the advent of the chariot ca. 2100-1700 BCE, a long process of horse domestication is thus understandable. Semi-settled hunters at Botai first tried to corral horses and utilize their milk¹², as well as meat for food supply. This corresponds to the first stage of horse domestication mentioned above. With tribes developing, belligerence and fortification expanded, and the steppe people learned to use horse bits and employed horses to pull two-wheeled chariots for

¹¹ For the development and transition of the four-wheeled vehicles on the Steppe see Wan (2011a: 119-121).

¹² For corrals and horse dung see French and Kousoulakou (2003) and Olsen (2006).

waging battles. Pulling chariots, the first use of battling of the horse on the Steppe, constitutes the second stage of horse domestication.

There must have been a long, gradual development to fill the gap between the two stages above. Robert Drews (2004: 20) has mentioned a “secondary product” that tamed horses for food supply could provide: pack animals, that is, carrying loads on their backs. This may have occurred at the time of taming for food. At about the same time, wheeled vehicles were invented and spread to the Steppe. As Joseph Maran has highlighted, from 3500 BCE onwards, late Neolithic cultures in Europe and the Near East (including the Caucasus) formed a *Übernahmemilieu* that enables new technology to share among people (Maran 2004: 278).¹³ Therefore domesticated cattle, as well as tamed horses (corralled for meat), would be associated with wheeled vehicles.

Early wheeled vehicles are wagons with four solid wheels for residential purposes. Only oxen were used for pulling these wagons because of their heavy loads. Compared with the ox, the horse was not an effective draft animal. Burials of a wheeled vehicle drawn by paired equids were not found until the Sintashta invention of spoked wheels (Häusler 1994: 231).

Artifacts depicting the horse, such as carved figurines of horses or horse-heads, and incised or painted figures of horses on pots or stelae, appear on the Steppe as early as 4000 BCE. Drews (2004: 26-28) suggests that the first unequivocal artifact of a man

¹³ Before mentioning wheeled transport, Drews (2004: 24) indicated that oxen and horses were used to pull sledges prior to ca. 3500 BCE.

riding a horse be dated to ca. 2030 BCE in the Near East.¹⁴ From this evidence we find an interesting scenario that the horse was used about at the same time for pulling a chariot and for riding, and the date is late 3rd millennium BCE.

3, The genetic mechanisms of horse domestication

Genetic studies of the domestic horse have been the most prominent field of research in the present century. The first detailed physical map of the horse Y chromosome was drawn in 2004 (Raudsepp et al. 2004), two years after a milestone study of the mitochondrial DNA (mtDNA) of the domestic horse (Jansen et al. 2002), which for the first time proposed an evolutionary pattern of the domestic horse based on both genetic and fossil data.

Nevertheless, the paternal lineage and maternal lineage of the domestic horse exhibited by Y chromosome map and mtDNA, respectively, exhibit a high degree of asymmetry. Vilà et al. (2001), Jansen et al. (2002), Levine (2006) and McGahern et al. (2006) have provided a scenario from the perspective of mtDNA studies, claiming that the origin of horse breeds is a process of multiple and repeated domestication, although not necessarily independent. On the other hand, research of Wallner et al. (2003), Lindgren et al. (2004) and Wallner et al. (2004) suggest, drawing genetic data from the Y-chromosome, that the paternal lineages of the domestic horse is extremely

¹⁴ See also Owen (1991). Littauer and Crouwel (1979: 35) reported the first “crude representation of riding on an equid”, a sealing dated to 2400-2300 BCE in the Near East. Some later scholars such as Didier (2009: 17-18) believed this sealing to be the solid evidence for the riding of the horse.

homogenous.

One of the latest studies on domestic horses, Cieslak et al., (2010), after reviewing the apparently paradoxical phenomenon, concluded that the large diversity of mtDNA lineages is not a product of animal breeding but represents ancestral variability, drawing data suggesting multiple domestications and introgressions of females especially during the Iron Age. As they argue: “a breed does not necessarily have a straightforward history and only rarely is it genetically isolated from the rest of the remaining population.”

This view is further complemented by Warmuth et al. (2012), who adopt a new approach, gathering genotype data from a wide range of samples across northern Eurasia. They find a strong trace of an expansion of the domestic horse out of eastern Eurasia, and propose a scenario that horse domestication originated in the western part of the Eurasian Steppe and that domestic herds were repeatedly restocked with local wild horses as they spread out of this area.

4, The spread of domestic horse to China

By the end of the 3rd millennium BCE the domestic horse had spread from the Steppe to lowland Mesopotamia in one direction, and to China in another. This expansion was interconnected with the spread of copper-bronze metallurgy and spoke-wheeled vehicle.

Firstly, let us review the situation in China before the domestic horse was imported.

In mid- to late Neolithic sites of China, the earliest datable remains of wild horses, Przewalski's horses, were found. These were the two molars and first phalanx found at Banpo 半坡, Xi'an, Shaanxi (Yangshao period, ca. 4500-3000 BCE). At that time horses were just hunted as a diet supplement (Linduff 2003: 142). During a 2010 excavation at Xinjie 新街, Lantian, Shaanxi, about 13.9 kms from the Banpo site, a pit with an entire skeleton of a horse was discovered.¹⁵ It is certain from the stratigraphic data that this pit belongs to the late Yangshao period (ca. 3500-3000 BCE) when domestic horse was probably confined to the Steppe. Further judgment can be made only after systematic osteological and genetic research.

Horse remains excavated from several Longshan period (ca. 3000-2000 BCE) sites, such as Chengziya 城子崖 near Jinan, Shandong, and Baiying 白營 at Tangyin, Henan, are thought of as kitchen debris (Academia Sinica 1934: 90). These remains are merely fragmentary bones, and the paucity of these remains cannot support the idea that the horse had been corralled during this period (Yuan 2004a; Wang and Song 2001: 28-29).

Subsequently, in the first half of the 2nd millennium BCE, horse remains appear at sites in the North/Northwestern "peripheral" areas of the Central Plains. These sites include Zhuanlongzang 轉龍藏 near Baotou, Inner Mongolia, Zhangjiazui 張家嘴 in middle Gansu, Qinweijia 秦魏家 and Dahezhuang 大何莊 at Yongjing in eastern Gansu and Huoshaogou 火燒溝 at Yumen in western Gansu. Copper and bronze

¹⁵ Information retrieved from the website of The Institute of Archaeology, Chinese Academy of Social Sciences: <http://www.kaogu.cn/cn/detail.asp?Productid=12911>, accessed Dec. 15, 2012.

artifacts were excavated in most of these sites as well. The association of horse remains and metal working in these sites is significant, and it is noteworthy that at Huoshaogou the horses were intentionally sacrificed at burial (Linduff 2003: 144). Given the fact that the remains of a spoked wheel have also been excavated in the Dulan 都蘭 site at Nuomuhong, Qinghai, a place near Gansu (QPICRA 1963: 17-41), it is reasonable to suppose that the domestic horse was transmitted from the west to the Gansu/Qinghai region along with copper-bronze metallurgy¹⁶ and spoke-wheeled transport. As Kathryn Linduff summarized “this region hosted newcomers, or at least knowledge of their metallurgical technology, their tool, weapon and personal ornament types and even perhaps their horse-using life-style” (Linduff 2003: 147, see also Anthony 2007: 456-57).

The key region of the route whereby the domestic horse entered East Asia, subsequently, is Xinjiang, a vast land between the Sintashta-Petrovka complex and Gansu/Qinghai region. The archaeological culture that constitutes and succeeds the Sintashta-Petrovka complex is the Andronovo culture (ca. 1800-1200 BCE, Anthony 2007: 448-51),¹⁷ which developed a high and sophisticated level of horse breeding (Kuzmina 2008: 61).

Scholars have long proposed Andronovo association with archaeological cultures in Xinjiang.¹⁸ It seems that domestic horses were brought by Andronovo stock

¹⁶ See Wan (2011b) for a summary of the transmission of bronze metallurgy to East Asia from the West.

¹⁷ Until recently Sintashta-Petrovka cultures were not separated from Andronovo culture, e.g. see Kuzmina (2008: 99).

¹⁸ For a detailed up-to-date discussion see Kuzmina (2008: 99-107) and Potts (2012).

herders to Xinjiang. Horse bones have been found at many sites in Xinjiang, such as Sintash, Karakhoja, Qizilchoqa and Kïk-turaq (Kuzmina 2008: 106). Further research is still needed to determine whether these horses were domesticated as working animals.¹⁹

Now the transmission route of the domestic horse to China seems to be clear, but a question still remains here: why domestic horses only emerged during the late Shang period (ca. 1300-1100 BCE).²⁰ Horses were harnessed with chariots and displayed in burial there. Consequently, we should first discuss the chariot and horse burials at Yinxu and its environs, so as to answer the question above.

¹⁹ It is noteworthy that the Zhang Zhung language spoken in pre-Buddhist western Tibet at least as early as the first millennium BCE contain a word for “horse”, *hrang* (Stein 1971: 253). Guillaume Jacques (2009) has stated that while this word is comparable to OC. *m^hraʔ/mmraʔ, “horse”, it is a relatively late Wanderwort. To me it is possible that the horse had been transmitted to western Tibet via the Pamirs and Ladakh before or during the period of the Iron Age Zhang Zhung kingdom. It is not impossible that this word is a cognate of the OC word, suggesting a transmission route via the Qinghai region where early Tibeto-Burman language speakers marauded.

²⁰ For a recent archaeozoological review of the horse of the Yinxu 殷墟 site see Yuan (2004b), who confirmed that domestic horse was introduced into East Asian Heartland by nomadic people in Central Asia.

Chapter 3: Archaeological discoveries related to the domesticated horse in pre-imperial China

After the introduction of the domesticated horse and wheeled vehicles to the East Asian heartland, horse and chariot burials begin to appear in cemeteries, and occasionally in households. Horse and chariot burials are a very common phenomenon in early China beginning at the late period of the Shang Dynasty. During the Zhou and the Qin Dynasties, horse and chariot burials became widespread in China until the Former Han Dynasty. Horse and chariot burials are the earliest direct evidence of the use of domesticated horses in pre-Qin Chinese society. The focus of this chapter is an investigation of the archaeological finds, primarily horse and chariot burials. I also will provide discussion concerning the structure of Shang-Zhou chariots, and horse and chariot fittings.

At the very beginning of this chapter, I will briefly introduce the forms of horse and chariot burials. Independent horse and chariot burial pits, outside the main tombs with which they are affiliated, are of three basic kinds: horse-and-chariot pits, horse pits and chariot pits.²¹ In the horse-and-chariot pit, the chariot(s) and the attached horses could be buried jointly or separately. For the separately interred chariots, the chariots may have been disassembled or kept intact for burial. Besides independent pits, chariots, chariot parts and/or chariot fittings also are found inside tombs of the

²¹ According to Wu Xiaoyun (2009: 70), most of the horse-and-chariot pits are rectangular in shape, while the sizes are determined by the number of the buried horses and chariots.

Late Shang and Zhou elite. These artifacts are seen in the sloping entry ramps into the tombs proper, secondary platforms (*erceng tai* 二層臺),²² or above the cover of the outer coffin.

1. The discoveries of horse and chariot burials

Mass discoveries of horse and chariot burials began after the introduction of modern archaeology into China. In 1932, when the Institute of History and Languages of the Academia Sinica organized an excavation of Western Zhou cemeteries at Xincun 辛村, Junxian 浚縣, Henan Province, two horse-and-chariot pits were discovered.²³ This was the first discovery of horse and chariot burials in modern

China. The chief excavator, Guo Baojun 郭寶鈞, states that in tomb M1:

. . .the discovery of more than half of the crossbar and carriage box, as well as many sorts of horse and chariot ornaments, such as the tilting of the crossbar, the attachment of spears at the ends of the crossbar, the middle curve of the shaft, the shape of the armrest like a chairback, the uprightness of the keurboom below the armrest, the attachment of the tinkling bell on the yokes, the places of the wheels on the two walls of the carriages, the six divisions of the hub ornaments, etc. All this was unknown until first discovered in this tomb.

(Guo 1964: 16)

Although he revealed the existence of chariots, the limited knowledge and technology prevented Chinese archaeologists from identifying the entire shape of the chariots at the time.

²² The platform raised above around the bottom of the shaft graves. Funerary objects normally were placed on the secondary platform. This platform is attested as early as the Yangshao Culture period (5000-3000 BCE) and lasted until the Western Zhou period.

²³ A detailed report of this excavation is documented in Guo (1964).

After the tumultuous age of WWII and the Chinese Civil War, new discoveries of horse-and-chariot pits began in 1950. Xia Nai 夏鼐, one of the foremost archaeologists of China, led an excavation team from the Institute of Archaeology, Chinese Academy of Sciences, and for the first time successfully excavated remains of dozens of wooden chariots at Huixian 辉县, Henan Province. The site is named Liulige 琉璃阁, consisting of a cemetery of the Warring States period.²⁴ Five horse-and-chariot pits were discovered, and a total of nineteen chariots were successfully identified during this excavation work. Some of the unearthed chariots were preserved so well that they could be reconstructed successfully (Fig. 1).

The discovery at Liulige opened the new era of the study of early Chinese horse and chariot burials as well as the classification of similar remains. After 1950, huge numbers of horse-and-chariot pits and fittings were discovered in newly excavated cemeteries. The time period of these burials is from late Shang to early Former Han.

Main pre-Qin excavations with such burials are listed below:

Late Shang: Yinxu, Anyang, Henan; Laoniupo, Xi'an, Shaanxi; Qianzhangda,

Tengzhou, Shandong; Qiaobei, Fushan, Shanxi.

Western Zhou: Henan, Shaanxi, Hebei, Shandong, Gansu.

Spring and Autumn: Shanxi, Shandong, Shaanxi, Henan.

Warring States: Hebei, Henan, Hubei, Shaanxi, Gansu, Anhui.²⁵

²⁴ For a detailed report on the Liulige cemetery, see Henan Museum (2003).

²⁵ For a complete list of pre-Qin horse and chariot burials, see Wu (2009: 1-2).

A). Horse and chariot burials of the late Shang period

The best studied horse and chariot burials of the late Shang period are from three places: Yinxu, Anyang, Henan; Qianzhangda, Tengzhou, Shandong; and Laoniupo, Xi'an, Shaanxi. Of the three, the Yinxu site, the remains of the late Shang capital, is considered to be the center of horse and chariot burials in the late Shang period (Wu 2009: 72, 183-84) It is generally held that during this period, horses and chariots were interred into the pit separate from the tomb or, less often, into the sloping entry ramps of the tomb,²⁶ and although most pits contained one two-horse chariot, a few pits held two or more disassembled chariots. As Wu Xiaoyun concludes, the burials of a full set of horses and chariots are limited only to a small number of large tombs, whereas the burials of horse and chariot fittings are attested mainly in mid-sized shaft graves. Although the horse-and-chariot pits of large tombs represent the high social status of the tomb occupant, the chariot and chariot fittings are not necessarily funerary objects, as are the bronze ritual vessels which reflect social hierarchy (Falkenhausen 2006: 141-149). Just because of this, horse and chariot fittings unearthed from mid-sized tombs more or less reflect the social status of these tomb owners as professional charioteers (Wu 2009: 108).

No horse remains have been discovered at earlier Shang sites such as those dating from the Erlitou 二里頭 culture or Erligang 二里崗 culture (or Zhengzhou Shang

²⁶ There had been, however, horse fittings interred in the tomb chamber. Although very rare, this custom became popular in the Zhou period.

Site).²⁷ Chariots and horse remains appeared abruptly, however, at Yinxu and other Yin period sites.²⁸ The most straightforward explanation of this sudden presence is that horses and chariots were imported from outside (Shaughnessy 1988, Linduff 2003). I will review this issue later.

Around 50 horse-and-chariot pits have been excavated at Yinxu. They are located at Xiaotun Northeast 小屯東北地, Xibeigang 西北岡, Dasikongcun 大司空村, Xiaomintun 孝民屯, Baijiafen 白家墳, Guojiazhuang 郭家莊, Liujiazhuang North 劉家莊北地, Meiyuanzhuang Southeast 梅園莊東南, etc.²⁹ The earliest published horse-and-chariot pit at Yinxu is Xiaotun M20, excavated in 1936 by the Academia Sinica. Before this discovery, chariot pits and horse pits had been excavated at Xibeigang, but M20 is much more significant because it is the first site where horses and chariots were placed in one pit, in tandem with organized relics such as human remains, horse remains and chariot artifacts (Fig. 3). Therefore, one of the main excavators, Shi Zhangru 石璋如, remarked in his diary: “This (M20) is an independent unit, more distinct, more regular and more important than those at Xibeigang.” (Wu 2006: 13)

²⁷ There has been still controversial evidence discovered at a walled city in Yanshi 偃師, Henan Province, dated to around 1700–1600 BCE, where two parallel ruts (with a distance of about 1.2 meters in between) probably made by the repeated passage of wheeled carts were found in the northeast corner inside the city wall. Between the ruts there is a very pitted soil, possibly the hoof tracks of the draught animal, which is too difficult to be identified according to the extant information. We might follow Barbieri-Low (2000:16) and preclude the possibility that the cart at Yanshi Shang city was horse-powered. For an up-to-date introduction to the Erlitou and Erligang cultures, see Liu and Chen (2012: 253-296).

²⁸ One of the most noteworthy recent discovery, though indirect, is that two pairs of wheel tracks were found at the late Shang site Shang City of Huanbei 洹北 just to the north of Yinxu. The width of the tracks are 2.2 meters and 2.0 meters each. The excavator He Yuling 何毓靈 and Yue Hongbin 岳洪彬 suggest that this could be the earliest evidence for the origin of horse-drawn chariots in China. (He and Yue 2011: 8-9) Since the possibility of oxen carts cannot be ruled out, this hypothesis remains inconclusive.

²⁹ For an available English survey of most of these horse-and-chariot pits, see Linduff (2003: 148-153). See Fig. 2 for a map.

Horse-and-chariot pits at Yinxu generally are situated in areas surrounding large and middle-sized burials. All these pits were found near royal or aristocratic tombs. In addition, some horse-only or horse-human pits are also found in settlements, especially under the foundations of ceremonial buildings.³⁰ For horse-and-chariot pits, some of them are arranged as groups, others are single. Inside the pit there are usually one chariot, two horses and a human body. All horses in the pits were harnessed and decorated with bronze fittings. There are groups of pits, often two, and rarely three to five. Inside a group, the size, orientation, and depth of the pits, as well as the orientation of the horse heads and dates of ceramics in the pits are basically similar. For instance, in 1988 two horse-and-chariot pits, M146 and M147, were excavated at Guojiazhuang Southeast. The diameter of the two pits is one meter, and orientations are both 105°. The depth, size and the structure of the bottom are almost the same. Unearthed artifacts also indicate that the date is the third phase of the Yinxu period. (Liu 2008: 44)

A smaller proportion of horse-and-chariot pits at Yinxu are buried within the main pit of large sized tombs. No matter if horse-and-chariot pits are in the same pits of the tombs, the procedure is: 1. digging the pit; 2. placing the deceased horses and human body into the pit; 3. placing the chariot into the pit. Horse pits and wheel tracks were dug in some pits. The horses usually were covered with straw or bamboo. (Zheng 1987: 466-467)

³⁰ Such as PNH36 at Miaopu Beidi 苗圃北地 where a horse is buried; (CASSIA 1987: 26) and H33 at Xiaotun Nandi 小屯南地 where a horse was buried together with five human skeletons. (Yang 2002: 117-118)

Four burial modes are present in Yinxu. 1. Burying the horse and chariot according to the status of horse use. The horse is attached to the chariot, and is deployed as in a state of use. Most horse-and-chariot pits are of this mode. 2. Disassembling the chariot. The horse is not attached to the chariot. The main parts of the chariot, e.g., axle and wheel, are buried separately in the pit. This mode is very rare and only seen in pits with more than one chariot. 3. A whole chariot and a disassembled chariot are buried in the same pit. This mode is seen only once. 4. For horse only pits, the horses are executed first, and then buried in one of four ways: back-to-back, back-to-abdomen, abdomen-to-abdomen, and curled. In those pits of more than two horses, more than one burial mode is used. (Zheng 1987: 466-467)

Chariot pits are independent pits or pits in the chamber or sloping entry ramps of large tombs. They are the earliest discovered horse-and-chariot pits at Yinxu, only seen in Xibeigang royal tombs and Hougang aristocrat tombs. So far, merely four examples have been discovered. Horse pits can be independent pits or pits in the sloping entry ramps of large tombs. They are located in Xibeigang royal tombs, Xiaomintun South, Baijiafen Northwest, Hougang and Xiaotun. Horse-and-chariot pits can be independent pits or pits in the sloping entry ramps of large tombs. They are located in Xiaotun, Dasikongcun, Xiaomintun, Baijiafen etc.

Independent pits and burials in tomb chambers/entry ramps differ significantly. According to Zheng Ruokui 鄭若葵 (1987: 464), the former are mostly for public sacrifice (*gonggong jisi* 公共祭祀) rather than funeral sacrifice (*xunzang* 殉葬). For

example, the large-size chariot pits and horse pits in Xibeigang royal tombs area might be a combined common public sacrifice; that is, the objects of sacrifice are not limited to one tomb, but to all the previous royal tombs and the spirits of the deceased kings. In contrast, chariot pits and horse pits in tomb chambers/entry ramps are mostly for funeral sacrifice. As for horse-and-chariot pits, some of them are for public sacrifice, and others are for funeral sacrifice depending on the context such as locus and manner of butchering.

Zheng (1987: 465) provides a thorough analysis for distinguishing the two types of horse-and-chariot pits. Yang Baocheng 楊寶成 (2002: 100-101) concludes that the number of horse pits for public sacrifice beside royal tombs is fifty, with 188 horses and a few people identified as breeders. Wu Xiaoyun (2009: 107) further points out that public sacrificial chariot pits, such as the five horse-and-chariot pits discovered at Xiaotun palace foundation Yi seven 乙七, function as a defensive array of the palace complex in the underworld.³¹ Besides, at Wuguancun Beidi 武官村北地 in Yinxu, orderly arranged sacrificial pits were discovered. In the 40 pits excavated thus far, the horse is apparently the main sacrificial animal. Within pits M22–M27 arrayed in a row, four to six horses were buried in each. Exact amount of cheek-pieces corresponding to the number of horses are discovered in all the above pits except M22 (Wu 2009: 109). The evidence from these horse pits, along with other

³¹ Cf. Shi Zhangru (1973) for a detailed discussion on this array.

horse burials with horse fittings unearthed in Yinxu,³² made the expert of late Shang history Song Zhenhao 宋鎮豪 believe that horse riding had been practiced:

At least those horses with fittings had been once employed as single riding or warhorses. The human corpses buried together with the horses were cavalymen, or common riders, or the servants of nobles, or horse-breeding slaves. It is rather that horse riding is celebrated in society at that time, therefore the ritual custom of horse sacrifice was prevalent.

(Song 1996: 206)

There have been enormous efforts to reconstruct Shang chariots. Based on the discovery from Xiaotun and neighboring sites, archaeologists have succeeded in building a modern model of the Shang chariot (Wu 2006: 30-31; also cf. Barbieri-Low 2000, Liu 2002). Archaeological evidence demonstrates that the Late Shang chariot is a mono-shaft (*duzhou* 獨軸) vehicle drawn by a pair of horses. The main components of this vehicle are one shaft (*zhou* 軸, corresponding to the term *yuan* 輦 in bi-shaft vehicles, namely the draught-pole),³³ one horizontal crossbar (*heng* 衡) attached to the front end of the shaft, one carriage box (*yu* 輿),³⁴ one axle (*zhou* 軸) and two wheels (*lun* 輪).³⁵ The horses' necks are tied to the two Y-shaped parallel

³² Song (1996: 205-206). He listed all horse pits from the very beginning of the Yinxu excavation in 1935 until 1989. Most horse remains were discovered together with bronze ornaments or cheek-pieces, and many of them also were buried with human sacrifices.

³³ The shaft is a part that extends forward from the bottom of the carriage and curves upwards so that the horses fixed on the crossbar are provided with enough space, and the height of the carriage is comfortable for the riders. In the Late Warring States period and the Qin Dynasty, a new type of horse-drawn carriage with two parallel draught-poles (*shuangyuan* 雙輦) was developed. This new type of vehicle is mainly used as means of transportation.

³⁴ The carriage is where the riders and their articles are carried. There is a wooden enclosure surrounding the carriage called a side board, except for an exit at the back side. The shape of the late Shang carriage experienced a transition from that of a dustpan to a rectangle, as indicated by the Xiaotun chariots as well as two newly excavated chariots at Qiaobei, Fushan, Shanxi Province. (Wu 2009:21-23; NBCR 2005: 61-62)

³⁵ The wheels of the Shang chariot are of sophisticated design. The felloe, *ya* 牙, is made from a long wood belt. At the center of the wheel hub, *gu* 轂, there is a round hole so that the axle can pass through. As for the ca. twenty spokes that connect the felloe and the hub, they are designed precisely and attached to the holes at the outside of the hub and the inner side of the felloe.

yoke saddles (*e* 軛) which are fastened to the crossbar. In order to keep balance, the number of horses tied to the crossbar must be even. Therefore, in the Western Zhou period, the four-horse-drawn chariot was developed, and in the Eastern Zhou period, the six-horse-drawn chariot began to appear.

The chariot fittings of the Late Shang period also appear to be highly developed. Most of them are made of cast bronze, with some decorative parts adorned with turquoise, a common byproduct of copper mining. The bronze axle caps (*wei* 轆) are fixed at both ends of the axle to protect the axles. There are holes on the top and bottom of the axle cap so that the wooden linchpin (*xia* 轄) can be fastened to the axle caps to hold the wheels and to prevent the separation of the wheels. On the tips of the shaft, the crossbar and the yoke saddle, are attractive protective (and also decorative) bronze accessories, mostly inlaid with turquoise. Along the crossbar and the side board there are also bronze adornments, also inlaid with turquoise, to increase the grandiosity and solemnity of the vehicle.

The bridle (*pei* 轡) is more meticulously designed than the chariot fittings. It is made of the following parts: the headstall (*luotou* 絡頭) is made of fine leather strings attached to the bronze cheekpieces (*biao* 鑣), which are used to fix the leather bit (*xian* 銜) in the mouth of the horse, and the reins (*jiangsheng* 韁繩) that are tied to the bit. Ornaments on the bridle are placed fastidiously: the so-called “bubbles” (*pao* 泡, a round-shaped bronze ornament, inlaid with turquoise or cast into beast-head form) are attached to the headstall, sometimes used together with seashells.

Besides these small ornaments, a conspicuous bronze artifact is fixed at the center of the horse's forehead, this brow ornament, *danglu* 當盧/當顛, with its turquoise-inlaid animal pattern illustrates the splendor of the Shang royal horse. Lying on the two sides of *danglu*, two temple ornaments *binshi* 鬢飾 add the proclivity of valor to the king's horse. Lastly, as part of the horse fittings, a tiny bronze bell is often worn on the neck of the horse. The shape of the bell is like two conjoined roll tiles, with a clapper inside.³⁶

Other main discoveries in the Shang horse-and-chariot pits pertain to the drivers. Generally these artifacts can be divided into two categories: driving devices and weapons. Jade ornaments of horse whips (*ce* 策) have been discovered at multiple pits at Yinxu. These ornaments, inlaid with gold foil, are attached to the two tips of the whip, which are made of bamboo and wood. Puzzling bow-shaped devices, *gongxing qi* 弓形器, were discovered in most Shang-Zhou chariot pits. It is shaped like a small-sized bow, and it can be further divided into a body and two arms. There are two bell-balls at the ends of the arms. There are two main opinions on the function of this device,: it could be a driving device hung at the waist of the chariot driver, with the two arms holding the reins; or it could also be the central part of a compact bow.³⁷

The charioteers of the Shang army normally were equipped with three types of

³⁶ An elaborate display of chariot fittings in English, mainly based on findings from the Western Zhou period, was recorded in the Table 2 of Barbieri-Low (2000: 86-92).

³⁷ The bow-shaped device also is attested in Southern Siberian Karasuk Culture (ca. 1500 – 800 BCE), as discussed in Lin (1998: 251). For a summary of typological study of the bow-shaped device discovered in China, see Gao (2007).

weapons. For distance shots, they used bows and arrows. Many arrows, contained in quivers, were unearthed in the horse-and-chariot pits at Yinxu. The arrowheads are made mostly of bronze, and extremely sharp. The fine quivers were decorated with jade handles. Dagger-axes, whose heads were made of bronze, were used mainly for defense. There were also jade arrowheads and dagger-axe heads unearthed. Both symbolize the royal power rather than real military prowess. The last group of weapons is a knife and whetstone. They are attached to a jade ring so that they could be worn on the armor of the charioteers.

There are a few other Shang sites outside of Yinxu where horse and chariot burials are found. A characteristic Shang settlement outside Yinxu is the site Qianzhangda 前掌大, located in Tengzhou, Shandong province. During the excavations in 1994-1999, five horse-and-chariot pits and four horse pits were discovered at Qianzhangda (CASSIA 2005: 124-38). Among the chariots placed in the five horse-and-chariot pits, four are buried with fully assembled chariots, each drawn by two horses. The fifth burial contains a disassembled chariot directly interred in the main tomb, with the horses in the pit beside the tomb chamber. This phenomenon is rarely seen in the late Shang period but prevalent in the Western Zhou period. Two of the five horse-and-chariot pits, M40 and M131, were better preserved than the other three. A variety of weapons were unearthed together with sacrificed charioteers, who were executed before burial; one charioteer per pit was buried at the

back of the chariot carriage.³⁸

The *danglu* of different shapes (heart-shaped or round-shaped), bronze “bubbles,” and ornaments made of seashells were found in most pits. In pit M45, a decorative gold foil inlaid with seashells was unearthed. Bits and cheek-pieces are all well preserved in these pits.

The Qianzhangda horse pits showcase little difference from the Yinxu horse pits, except for the evidence that the two horses interred in pit MK2 were bound before placing in the pit, which is rarely seen in the Yinxu horse pits. (CASSIA 2005: 136)

Another site in Yinxu is at the western frontier of the Shang dominion. Located in Xi'an, Shaanxi, Laoniupo 老牛坡 dates to the Shang culture and is considered contemporary with the sites of Erligang and Yinxu (Huang 2003). In 1986, in area III of the Laoniupo cemetery, identified as belonging to Phase IV of the Laoniupo culture,³⁹ one horse-and-chariot pit (M27), one horse pit (M17) and one funerary sacrificial pit (M30) with a human body, a horse and a dog buried inside were excavated. In the horse-and-chariot pit, one chariot and two horses were buried. The horses were slaughtered and buried first, after that the chariot was placed. Above the horse remains and the chariot shaft, vestiges of a covering mat were found, but neither weapon nor human remains were found in this pit. It is worth mentioning that bronze

³⁸ The only exception is M41, where two male humans were buried at the front and the back of the chariot, respectively. The human remains at the back of the chariot were buried with two bronze vessels as well as three seashell ornaments and a turquoise ornament. He also wore headgear made of seashells. This perhaps indicates his distinctive social status (Fig. 5).

³⁹ See Liu (2002: 329-335) for the periodization of this site. His team mainly dated the area III cemetery to the Phase IV of the Laoniupo culture, namely, the late Shang period (Yinxu Phase IV). The original report states all Laoniupo culture phases generally as Shang culture.

horse head ornaments, crossbar ornaments, axle caps and carriage ornaments were preserved intact in the pit. (Liu 2002: 272) In the horse pit, two horses were buried after execution and wrapped in a mat. Excavated artifacts include two bronze ornaments placed at the foreheads (identical with the bronze head ornaments in the horse-and-chariot pit) and two bronze bits. The funerary pit, M30, is considered to be a sacrificial pit. Except for the remains of a male human skeleton, 13–15 years old, a horse skeleton and a dog skeleton, all showing no sign of binding, no funerary object was found. The chief excavator, Liu Shi'e 劉士義 (2002: 271), speculates that this pit is affiliated with a main tomb. That main tomb, however, has not been identified thus far. Song Zhenhao proposes that the horse-dog pit represents a phenomenon in which the warhorse and the hound were buried together with the deceased cavalryman, a situation common in the late Shang period (Song 1996: 206).

The discoveries in Qianzhangda and Laoniupo indicate that Shang style horse-and-chariot burials are found not only in the Yinxu area but also areas far from the center of the Shang from modern Shandong to Shaanxi. Recent discoveries, such as the Qiaobei 橋北 cemetery in Southern Shanxi and the Ximufocun 西木佛村 tomb at Zhengding in Western Hebei, mark the northern frontier of the Shang territory.⁴⁰ At the Qiaobei site, chariots are buried inside the sloping entry ramps to the large tombs M1 and M18, oriented towards the other side of the tomb chamber (Qiaobei Archaeological Team 2006: 350-353, 363-364). Although most of burials

⁴⁰ Discovered bronze vessels and ceremonial implements of the Shang style and weapons of the local style suggests this “frontier” characteristic between the Central Plains and the Northern Zone.

discovered at Yinxu are for the royal house, whether funeral or public sacrifices, as Song (1996:191-197) suggests, discoveries in sites like Qianzhangda and Laoniupo indicate that some local elite could employ funerary horses and chariots as well.⁴¹ Especially in the Qianzhangda case, the chariot in pit No. 4 appears almost the same as the Yinxu model. As discussed in Chapter 5, the Shang royal house established a special institution for horse breeding. The question is if there are also horse-breeding institutions in the peripheral areas, e.g., Shandong and Shaanxi. If not, the horse and chariot must be used as a means of transportation for the local elite buried in places far from the Shang ruling center. These elite might have been the most important leaders at these frontier areas, paying allegiance to the Shang king.⁴²

In sum, most Shang horse-and-chariot pits contained one chariot, and in rare examples, two chariots, either disassembled or overlying on each other. The chariots usually were arranged as if they were being driven, and one to three sacrificial charioteers were placed beneath the back of the carriage. Full chariot burials are more common than disassembled chariot burials. (Wu 2009: 70) Horses normally were placed at the yoke, saddle or crossbar. In contrast, chariot burials inside tombs are uncommon, only attested in Qiaobei M1 and M18. Very rare examples, such as the

⁴¹ Examples from both archaeological and literary sides are cited in Song (1996: 197-200), whereby Song Zhenhao concludes “A state’s (*fangguo*) design and manufacture of chariot, and the skills of driving, as well as the amount of chariots it possessed, was on one hand utilized by the power of its elite ruling class, on the other hand became an important criteria for its prowess.”

⁴² One literary evidence from the *Shi jing* is noticeable here. In the *Shang song: Xuan niao* 商頌·玄鳥, a verse reads 武丁孫子、武王靡不勝。龍旂十乘、大糝是承。 “The descendant of Wu-ding, Is a martial king, equal to every emergency. Ten princes, [who came] with their dragon-emblazoned banners, Bear the large dishes of millet.” (translated by James Legge) According to the commentary by Zheng Xuan 鄭玄, at the time of Shang King Wuding’s grandsons (Linxin 廩辛 or Kangding 康丁), the local lords of the four directions entered the Shang capital to show their allegiance, residing on ten chariots decorated with dragon banners.

Xiaotun M5 (the so-called Fuhao 婦好 tomb), indicate that during this period horse fittings, usually cheek-pieces, bits and bronze ornaments, began to be placed in tomb chambers.

As for horse-and-chariot pits discovered outside Anyang, there are some local features. For example, chariots unearthed at Qianzhangda in Shandong show a distinct structure of the carriage that is different from Yinxu chariots. While the chariot in Laoniupo M27 exhibits a striking resemblance to the Yinxu archetype, in several ornaments (such as those at the ends of the crossbar and the carriage, see Liu 2002: 294-295) the Laoniupo chariot fittings use the pattern of concentric circles, which is atypical at Yinxu. It is also worth mentioning that the predynastic Zhou culture developed their own system of horse and chariot fittings characterized by *luanling* 鑾鈴 bells⁴³ and horn-shaped *danglu* ornaments. This reveals that the Zhou people began to form their own culture as the Shang influence gradually retreated from the Wei Valley in Late Yinxu period.

B). Horse and chariot burials during the Western Zhou period

During the late Shang period, the predynastic Zhou culture formed its own chariot and horse burial customs. Archaeological evidence has demonstrated that the Western Zhou period, especially early to mid-Western Zhou, is the period when horse and chariot burial are most numerous. (Wu 2009:186) During this period, horse and

⁴³ This type of bell is a decorative ornament placed on the crossbar near the attachment for the yoke saddle. It was first attached on the chariots of the Western Zhou period.

chariot burials are found in association with major royal, elite and professional⁴⁴ tombs in modern Shaanxi, Henan and Shanxi provinces, as well as peripheral areas such as modern Beijing, Shandong⁴⁵ and Gansu.⁴⁶ Hundreds of horse-and-chariot and horse-only pits have been discovered. Most of them are adjacent to, but separate from, the main tombs in the clan cemetery. Horses usually were positioned side-by-side, buried under the yoke and along either side of the shaft, along with the harness and parts of chariots (Lu 1993: 835).

In most of the early Western Zhou horse-and-chariot pits discovered so far, there are two types of deployments of the horses and the chariots: one is a full set of assembled horses and chariots buried together with all horse and chariot fittings; the other is separate horse pit and chariot pit, with a full set of chariot fittings buried in the chariot pit but few horse fittings in the horse pit. Another new feature of the early Western Zhou horse and chariot burials is that chariots, usually one or two, were interred inside the tomb chamber, rather than in an independent pit. At the same time, horse-and-chariot pits with multiple chariots became widespread, and these multiple chariots were arranged into a fleet inside the pit; this was in contrast to the late Shang deployment that each chariot of the fleet was placed within its own pit. It is noteworthy, however, that the style of chariot burial did not make a sudden change

⁴⁴ Here it refers to working people engaged in horse breeding or chariotry.

⁴⁵ E.g., Chenzhuang 陳莊 site near Gaoqing, Shandong (SPICRA 2010).

⁴⁶ Wu Xiaoyun (2009: 2) lists 40 sites with field materials related to the horse and chariot. In spite of the multitude of archaeological sites, I will focus on some typical and well-studied examples, such as Xincun site, Junxian, Henan; Beiyao 北窯 site, Luoyang, Henan; Zhangjiapo 張家坡, Chang'an, Shaanxi; Zhougongmiao 周公廟, Qishan, Shaanxi; Huangdui 黃堆, Fufeng, Shaanxi; the cemetery of the Yu 虢 State at Rujiashuang 茹家莊, Baoji, Shaanxi; the cemetery of the Jin 晉 State at Tianma-Qucun 天馬-曲村, Quwo, Shanxi; Liulihe site at Beijing; and a brief mentioning of Baicaoopo 白草坡 site, Lingtai, Gansu.

but just a prolonged transition during the time of the Zhou's conquest of the Shang. Moreover, the horses were placed in front of the chariot or the bottom of the pit, not directly attached to the yoke or near the crossbar.⁴⁷ If the pit were filled with more than four chariots, it is quite likely that the chariots were disassembled and placed above the horse that had been positioned at the bottom of the pit. Through the predynastic and early Western Zhou period, horse and chariot fittings were attested widely in large- and mid-size tomb chambers as funerary artifacts buried within tomb chamber or the entry slopes attached to it. (Wu 2009: 73-74)

Later, beginning in mid-Western Zhou period, a huge number of disassembled horses and chariots were buried directly inside many large tombs. Disassembled chariots, mainly one or two in number, also are commonly unearthed in mid-size shaft graves. The horse and chariot fittings as funerary artifacts significantly decreased in this period, with a conspicuous phenomenon that the horn-shaped *danglu* prevalent in the early Western Zhou period gradually disappeared in late Western Zhou tombs. At the transition of Western Zhou to Eastern Zhou, a relatively fixed assemblage of five tripods (*ding* 鼎), four *gui* 簋 vessels and four *luanling* bells developed into the standard funerary ritual objects within the tomb chamber. (Wu 2009: 184)

Western Zhou horse and chariot burials are found at the earliest regionally inhabited center of the Zhou clan, Zhouyuan 周原 or Zhou Plains, located in the

⁴⁷ Typical evidence is the horse-and-chariot pit excavated at the Baicaopo site, as reported in Chu (1977: 104-106). In this single-chariot pit, the chariot was buried after dismantling, and four horses were buried in front of the chariot after execution, and wrapped with mats. An additional axle and a crossbar also are placed with the disassembled chariot. The pit is affiliated with an early Western Zhou elite tomb which is identified with Shang clan. (Chu 1977: 124, 129)

western part of modern Shaanxi Province between the cities of Xi'an to the east and Baoji to the west. I will survey a typical site of this area, Huangdui Laobuzi 黄堆老堡子 cemetery.

Huangdui Laobuzi cemetery at Fufeng, Shaanxi Province, was one of the most representative Zhouyuan burials that exhibit Western Zhou style horse and chariot burials in Shaanxi. It was excavated three times, in 1992, 1995 and 1996. The latter two excavations are relevant to our discussion here. The 1995 excavation team at Huangdui Laobuzi discovered two horse pits, as well as a rectangular shaft grave with four wheels and a carriage buried inside. The two horse pits included three and four horses, respectively, conspicuously different from the Shang horse pits which usually contain one horse. Also unlike the Shang custom, the horses were interred alive instead of executed before burying. Inside the shaft grave, wheels and carriage were placed on a secondary platform around the outer coffin. This is also a very typical Western Zhou custom, though beginning as early as the predynastic period. In fact, the excavators have identified this cemetery as belonging to the series of Western Zhou royal tombs dating to the Mid-Late Western Zhou period (Luo and Wei 2005).

In 1996, the cemetery was excavated again.⁴⁸ Two large horse-and-chariot pits along with three tombs with funerary chariot parts/fittings were discovered. One of the horse-and-chariot pits, No. 96FHK38, is the largest horse and chariot burial in the

⁴⁸ This is named “rescuing excavation” (*qiangjiuxing fajue* 抢救性發掘) in official terminology due to some imminent construction work. Usually, the site no longer exists after this type of excavation due to succeeding construction work.

Zhouyuan area; it included 10 disassembled chariots and 96 horseheads. In both pits, the disassembled chariot parts were placed above the horses (in 96FHK67, also a dog) that were buried alive (Zhang and Luo 2005). The excavators conclude that all the horses were buried alive, and all the chariots were buried after being dismantled. This custom, according to them, is similar to the burial custom at the Xincun site mentioned at the beginning of this chapter (see further discussion below). Since the Xincun site is identified with the cemetery of noblemen from the Wei 衛 state, (Guo 1964: 72 –74) that was a vassal state of the Zhou court exclusively for nobles of the same Ji 姬 surname,⁴⁹ it is quite likely that the arrangements of horse and chariot burials at both sites indicate some common feature of the Zhou royal family.

Now let us turn the focus eastwards to typical early Western Zhou burials excavated at Zhangjiapo 張家坡 site in Chang'an County near Xi'an. This site is located on the western bank of the Feng 豐 River in the Fengxi 豐西 region where the western capital of the Western Zhou, Fengjing 豐京, is believed to have been situated. The excavation at this area can roughly be divided into two periods. From 1955 to 1967, the excavation process is usually called the Fengxi excavation; 306 tombs, 9 horse-and-chariot pits, and 3 horse pits were discovered. The report for this work is CASSIA (1962) and Fengxi Team (1980). The second period, from 1983 to 1986, usually named the Zhangjiapo excavation, includes 365 tombs, 3 horse-and-chariot pits, and 22 horse pits. The report is CASSIA (1999).

⁴⁹ The first generation of the lord of Wei, Kang shu 康叔, was the younger brother of King Wu of Zhou. See *Shi ji* 4, 132 for reference.

The Fengxi excavation is important in Western Zhou archaeology because it provides a relatively accurate stratigraphy for predynastic and Western Zhou period. In the first excavation (CASSIA 1962: 110-111), horse and chariot fittings were discovered among household remains. Besides two bronze “bubble” ornaments, other chariot fittings found here, such as axle caps, cheek-pieces, and chariot ornaments are made from bone and ivory. These new discoveries indicate that the Zhou chariot production technology may have been more advanced than the Shang, as they were able to use organic components for horse and chariot fittings.

Four horse-and-chariot pits were excavated before the 1962 report, and the excavators considered them to be of the early Western Zhou period (CASSIA 1962: 130, 141). M167 is a simple one-chariot pit with two horses and a charioteer. The only uncommon feature is a skeleton of a pig at the left-front of the carriage. Unlike the dog who could serve as a military/hunting partner of the cavalryman and the warhorse, very few pigs were interred together with horses. Here my theory is that the pig has some ritual or religious significance, and may have served as a sacrifice before the horse and chariot burial. In the best preserved pit, M168, two chariots were discovered. One of them was among the earliest excavated and reconstructed four-horse chariots in the history of Chinese archaeology. The two horses on the left of the shaft were placed in a rectangular shallow slot,, and the two horses on the right were placed in another shallow slot. The horses were wrapped with mats, and their heads were inserted in four niches scooped out of the east wall of the pit. The other

two-horse chariot was positioned parallel to the four-horse chariot. The horses are also in shallow slots, but there is no niche for containing their heads.

Clearly, this more meticulous handling of the horse-and-chariot pit shows the feature of Western Zhou style full-chariot burial, which is more elaborate than the simple placement of the Shang burial. It is also of note that one human sacrifice is buried underneath the carriage of the four-horse chariot. In order to protect the preservation of the chariot, the human remains were not fully examined. But this special location may indicate that the custom of human sacrifice in horse-and-chariot pits in the Western Zhou period also differs from the Shang. The other two pits, M185 and M192, were destroyed partially by tomb looters. There are some important discoveries, such as bronze dagger-axes found on two chariots in M192, indicating that these chariots were mainly for military, not ritual usage.

In 1967, the excavators discovered 124 tombs, 5 horse-and-chariot pits, and 3 horse pits (Fengxi Excavation Team 1980). Only one horse-and-chariot pit, No. 35, was found intact (Fig. 6). This pit is almost trapezoid in shape; the walls off the ends of the axle and the rear of the wheels expanded outwards. Still, the two horses were placed in a shallow slot and wrapped with mats. No human remains were found in this pit. In the three horse pits discovered, the horses (interred in pairs) were buried after execution, without any horse fittings. In one of the main tombs, M135, however, *luanling* bells and cheek-pieces were unearthed. This phenomenon indicates a new custom that horse fittings were interred in main tombs while horses placed in

independent pits. According to the excavators (Fengxi Excavation Team 1980: 491–492), M135 belongs to Late Western Zhou period. Therefore it is not difficult to understand the emergence of this new custom.

The 1983–1986 excavation brought about many new instances concerning the Western Zhou custom of horse and chariot burials in the Fengxi area. The excavation of Jing Shu 井叔 family cemetery in 1984 through 1986 made it possible for the researchers to trace the development of a cemetery based on noble lineage.⁵⁰

Although only three horse-and-chariot pits were discovered, numerous (22) horse pits provide new discussion topics.

The largest and the first-generation tomb in the cemetery, M157, is a double-ramp shaft grave tomb (Fig. 7). Aside from other funerary objects on or surrounding the outer coffin, chariot parts were found on top of it: two shafts, two crossbars with yokes and two carriages in total. It is certain that there were two chariots placed on it.⁵¹ At each sides of the coffin lie scattered accessories of the chariots, such as bronze bits, cheekpieces, horsehead ornaments and axle caps. In the south entry ramp, 26 wheels, 6 carriages, 4 shafts and 1 axle were interred. Several fairly well-preserved chariot parts are found covered with coats of paint. In the north entry ramp, 4 wheels, 4 carriages, 2 shafts and 1 axle were discovered (CASSIA 1999: 16-22). A similar situation is seen in three other large tombs with single entry ramps,

⁵⁰ We may then compare family cemeteries such as Guo state cemetery, Yu state cemetery, and Jin state cemetery for regional characteristics and spatial distributions, as well as diachronic change.

⁵¹ No axle or wheel, however, is attested above the outer coffin.

M152, M168 and M170. These tombs, however, were severely looted. Despite this, at least five sets of horse fittings including bits, cheekpieces and, the so-called, “bubble” bronze ornaments discovered inside the fillings east of the tomb chamber of M170 (Fig. 8) demonstrate that the chariot fittings were placed in the sloping entry ramp or on a secondary platform (as attested inside M170), whereas the horse fittings were buried independently from chariot fittings (CASSIA 1999: 34-35). Since M170 is dated to ca. 900 BCE (CASSIA 1999: 375), this custom may have come into being during the mid-Western Zhou period.

Due to widespread looting of the horse-and-chariot pits, it is not important to discuss them here as they are of little archaeological value as their context was destroyed. As for horse pits, those affiliated with the earlier tombs (M152 and M157) feature the horses buried alive and also a large number of horses (15 to more than 45). The horses in pits affiliated with later tombs (M170 and some other smaller tombs), however, were buried after execution in orderly placement, and small in number (less than 10). It is worth mentioning that the excavators provide a chronological order for nine horse-and-chariot pits (CASSIA 1999: 373-375).

The Jing Shu family cemetery is dated to Mid-to-Late Western Zhou period. A prominent feature of horse and chariot burial during middle Western Zhou period is that the horses are placed in pits in disarray, while horse and chariot parts were dismantled and buried inside the main tombs, as M157 and its affiliated horse pits indicate. Yet later, as shown in M170 and its affiliated horse pits, fewer horses were

buried in orderly fashion, whereas horse fittings were buried independently from the dismantled chariot parts.

The complete process of excavation at Zhangjiapo site provides a reasonable example for the comparison of early Western Zhou horse and chariot burials and their form in middle through late Western Zhou period. To summarize, early Western Zhou horse and chariot burials still follow the Shang prototype: a separate pit containing horses and chariot(s) (admittedly, the number of horses and chariots increases, and the four-horse chariot emerges). The most widespread burial custom from the mid-Western Zhou period, however, is the dismantling of the chariots into separate parts and placing them on the cover of the outer coffin, on the secondary platform, or in the tomb sloping entry ramp(s). The number of horses and chariots peaked at the mid-Western Zhou period and during late Western Zhou period, as I will discuss below.

The Jin state cemetery, usually called the Tianma-Qucun cemetery, provides another example for early Western Zhou horse and chariot burials. In 1984, three horse-and-chariot pits were discovered at the J4 area where the main tombs were dated to early Western Zhou. Only two chariots were preserved intact as a full set in one of the three pits, No. 3.⁵² One of these chariots is a typical Western Zhou chariot with rectangular carriage; the other chariot, however, has a unique carriage shape,

⁵² Though they were buried as full sets, the chariots were placed above a layer of all the buried horses. Therefore, it is strikingly different from the Shang tradition that the horses and chariots were buried together in the same layer. In one of the pits, No. 2, there are vestiges of mats between the horses and the chariot. In pit No. 4, the horses were buried alive before placing chariots above them. These variances indicate some temporal/spatial difference of the Tianma-Qucun site from other Western Zhou sites.

albeit also rectangular. There is only one more example of this type of carriage attested at Waliu 洧劉 cemetery in Zhengzhou, Henan of this period (Wu 2009: 31). This shape of carriage became popular in later period, however, and developed into the double-room closed carriage prevalent in imperial China.⁵³

At another area, K4, however, a trapezoid horse-and-chariot pit was discovered in 1982.⁵⁴ It is very uncommon to find non-rectangular pits (see the trapezoid pit in Zhangjiapo as another example, above) in Western Zhou cemeteries,⁵⁵ but the arrangement of the horses and chariot in this pit is very conservative, like Shang ones (Zou 2000: 932-933). A trapezoid horse pit (with two horses and a dog in it) and a rectangular horse pit also are reported.

It is noticeable that Lu Liancheng points out a change of the burial patterns in the mid-Zhou period (c. 900-850 BC). He asserts that whereas bronze chariot parts still were placed in pits independent of the tomb, bronze harnesses and the horses were buried in the tomb proper. Then he cites Rujiazhuang 茹家莊, a site near the Baoji, Shaanxi, and Liulihe 琉璃河 chariot pits near Beijing to demonstrate that both show such an arrangement. (Lu 1993: 835)

At the Rujiazhuang site, there are two horse-and-chariot pits near tomb BRM1, considered by Lu and Hu (1988: 270) to be affiliated to that main tomb. Whereas

⁵³ One may recall the No. 2 bronze chariot discovered at the Mausoleum of Emperor Shihuangdi of the Qin, for instance.

⁵⁴ Wu Xiaoyun (2009: 47) claims that all the seven horse-and-chariot pits known in this area are trapezoid in shape.

⁵⁵ Whereas Wu Xiaoyun (2009: 184) acknowledges that this trapezoid pit is a unique characteristic of the Tianma-Qucun cemetery, the authors of Zou (2000: 933) hold that trapezoid pits are widespread in other Zhou single-chariot pits. This latter statement seems to be a problematic opinion. As summarized in Wu (2009: 47), trapezoid pits mostly are attested in the Shang period and Qin cultural area in Eastern Zhou period, and Tianma-Qucun is a quite distinct exception.

chariot fittings and horse harnesses, along with four wheels, were indeed discovered in BRM1, it is not reasonable to assume that the horses also were buried in the tomb proper (Lu and Hu 1988: 388 –407). Conversely, even the two horse-and-chariot pits near tomb BRM1 are doubtful to be affiliated to the tomb, according to later comparative studies (e.g., CASSIA 1999: 380).

If we turn to the Liulihe site, it is also groundless to claim that horse harnesses were present inside mid-to-late Western Zhou tombs. The most persuasive example, pit M202CH, held 4 rows of 42 horses covered with 14 chariots. By contrast, no horse and chariot fitting was found in the main tomb (BCRRI 1995: 16 –23). Although this pit is dated to the early Western Zhou period, it is still not reliable to adopt it as an example to buttress the idea that there has been an increase of buried horse fittings inside the tomb proper since the mid-Western Zhou period. In fact, Wu Xiaoyun (2009: 184) emphasizes that horse and chariot fittings diminished after the mid-Western Zhou period, which also has been demonstrated in CASSIA (1999: 380). Furthermore, at the change from Western Zhou to the Spring and Autumn period, the horse and chariot burials, such as the Shangcunling 上村嶺 Guo 虢 state cemetery discussed in the next section, began to show signs that restored the late Shang and early Western Zhou custom of full-chariot burial, which was inherited and expanded even into the Warring States period.

At last, a special cemetery, the Beiyao site at Luoyang, Henan Province, draws my attention. It is the only Western Zhou site surveyed in this dissertation with only

horse pits and no chariot pit. Not a single chariot fitting is found in the seven excavated horse pits, many of which were filled with horse remains. Two of them are large pits, with 61 (MK107, Figs. 9-11) and 56 (MK693, Fig. 12) horses buried inside. Only a few horse fittings were unearthed from these two pits, whereas other smaller pits have 4 to 16 horses. Horses in all except one pit were buried alive, and the only pre-executed horses were piled up without order. This exhibits sharp distinction with later large-scale horse pits, which I will mention below. Also, in tombs near the horse pits, neither whole chariot nor chariot parts were buried. Only bronze horse and chariot fittings were found, and it is noteworthy that many of them are found in a set and intact.⁵⁶ Since this site is predominantly and exclusively a clan cemetery of Zhou noblemen, it demonstrates clear differences from the Shang burial.⁵⁷

C). Horse and chariot burials during the Spring and Autumn period

Archaeological finds indicate that the range and scale of chariot and horse burials are further enlarged as the ruling center of the Zhou dynasty moved eastwards. This is a period when the Zhou royal power weakened, and the feudal lords began to play the dominant role in history. As for the horse and chariot burials during this period, Lu Liancheng concluded: “In the Spring and Autumn period, the dukes competed to display their wealth. The size of chariot pits, and the numbers of buried chariots and

⁵⁶ For a list of the extant horse and chariot fittings, see LMAT (1999: 120-147; 231-241; 282-293).

⁵⁷ We can find other differences in funerary customs such as using dog sacrifice instead of human sacrifice, as summarized in LMAT (1999: 368-369).

horses, became a focus of such competition.” (Lu 1993: 837) Besides chariot and horse burials at large tombs of feudal lords, horse-and-chariot pits appear in several family cemeteries of local ministers.

In tandem with the fact that regional supremacy gradually replaced central royal power, regional variation of horse and chariot burials appeared. The burial of multiple full, intact chariots reemerged as a fashion in most of the cultural spheres except Qin 秦 and Qi 齊. Horse-and-chariot pits in the Jin 晉 cultural sphere, where the resources of horses are abundant and the utilization of horses are most elaborate, are mostly divided into sub-pits of horses and sub-pits of chariots. The chariots were arrayed in orderly rows. One arrangement is that the horses were placed in front of the chariots, and a sub-pit for horses formed another part of the pit—the sub-pit of chariots look like a secondary platform. Another possible arrangement is to dig an “L”- or “T”-shaped pit, with horses in one arm, chariots in the other.

To illustrate the first arrangement, I take the Shangma 上馬 cemetery at Houma, Shanxi as an example. In 1987, three horse-and-chariot pits at this cemetery were excavated; two of them, No. 1 and No. 3, are dated to the early Spring and Autumn period. In pit No. 1 (Figs. 13-14), three chariots were buried in a tight row; immediately in front of the first chariot, a rectangular horse sub-pit was dug, 1.06 meters deeper than the bottom of the chariot sub-pit. Five horses were buried without order after execution, and then the chariots were buried. A quite similar situation is attested in pit No. 3 (Figs. 15-16), where six horses were buried in the horse sub-pit,

3.60 meters depth, in front of the chariot sub-pit of 2.36 meters depth, in which three chariots were placed in a row. Dog skeletons were discovered in both pits. (SPIA 1994: 238 –260) As this burial custom developed, in the Shangma horse-and-chariot pit No. 2 (Figs. 17-18), commonly considered to be a late Spring and Autumn period burial, a partition beam made from raw soil separates the horse sub-pit and the chariot sub-pit (SPIA 1994: 264). This new practice decisively influenced the horse and chariot burials in the Warring States period Jin cultural sphere, as will be discussed in the following section.

The other type of Jin horse and chariot burial are characterized in the Chengcun 程村 cemetery at Linyi, Shanxi Province and the pit at the late Spring and Autumn period Tomb of Minister Zhao 趙卿 at Taiyuan, Shanxi Province. In 1987-1988, three large “T”-shaped horse-and-chariot pits, M1009, M1058 and M0026 at Chengcun cemetery, were excavated.⁵⁸ In M1009 (Fig. 19), the horse sub-pit is deeper (2.9 meter) and dug in front of the chariot pit; the chariot pit (2.4 meters in depth) is surrounded by a secondary platform, the front part of which separates the two sub-pits. Twelve executed horses and five intact chariots were buried into this pit. Whereas the chariots were buried one after another in an orderly fashion, the horses were buried alive. This also is attested in the other two pits of this site. Six horses and three chariots were buried in M1058 (Fig. 20). The shape of this pit is rectangular, but because there is a raw soil partition beam (95 cm higher than the bottom of the chariot

⁵⁸ A chariot-only pit, M1076, also was excavated at this site. A secondary platform surrounds this pit.

sub-pit) between the horse sub-pit (3.25 meters in depth) and the chariot sub-pit (3.1 meters in depth), and there is secondary platform at the sides and back of the chariot sub-pit (50 cm higher than the bottom of the chariot sub-pit). The combination of the horse sub-pit and the chariot sub-pit still looks like a letter “T.” The chariot sub-pit of the largest of the three pits, M0026 (Fig. 21, with eighteen horses), is not very well preserved. But M0026 shows similar traits to M1009 (CASSIA et al. 2003: 161-198).

The horse-and-chariot pit affiliated with the Tomb of Minister Zhao was discovered in 1988 with 44 horses and 15 chariots interred inside (Fig. 22). This is a typical “L”-shaped pit where the horses were placed in front of the chariots in a parallel array. Quite different from previous practice, the heads of the horses were oriented towards the chariots (Tao et al. 1996: 194-198). This arrangement also is attested in some Warring States period horse-and-chariot pits within the Jin cultural sphere discussed in the next section.

The horse-and-chariot pits in most of the modern Henan Province are characterized by the cemetery of the Shangcunling 上村嶺 Guo 號 state near Sanmenxia, Henan, a very important site. In 1955-1956, 234 tombs, 3 chariot-and-horse pits, and 1 horse pit were discovered. In two pits (No. 1051, see Fig. 23 and No. 1811), 10 chariots and 20 horses were buried. In another pit (No. 1727, see Fig. 24), 5 chariots and 10 horses were interred (CASSIA 1959: 42-47). The chariots were laid one after another in one neat row. The horses were buried right underneath the fully, intact buried chariots. Wu Xiaoyun (2009: 75) mentioned a

variant form of this type of burial at pit No.1 in the Former City of Zheng Han 鄭韓故城; there the horses were placed under chariot carriages, with the wheels detached and leant against the walls of the pit, and other parts of the chariots placed in three rows front-to-rear. A similar phenomenon is attested at the Guojiamiao 郭家廟 site at Zaoyang, Hubei Province, almost the southern boundary of the Central Plains. A one-chariot pit with two horses in it, along with two chariot-only pits, was discovered in 2002-2003. These three pits were dated to early Spring and Autumn period (Chen 2005: 310-321). In the horse-and-chariot pit, the horses and the disassembled wheels were buried first at the bottom of the pit, then the carriage and the shaft were placed above them. Like other Spring and Autumn period tombs, decorative chariot fittings were unearthed very rarely here. Only two axle caps and three beast-form bronze buckles (identified as ornaments of the crossbar) were found in this pit. Likewise, in one of the chariot-only pits (GCHK1), the wheels of the three chariots were buried underneath the chariot bodies. The three chariot bodies also overlay each other. Unlike the chariot in the horse-and-chariot pit, these chariots are embellished with many decorative bronze ornaments and finely coated with lacquer. The other chariot-only pit also follows a similar arrangement (Chen 2005: 201-220).

Among the Chu 楚 state horse and chariot burial discoveries, the most typical are the horse-and-chariot pits in Xiasi 下寺 cemetery at Xichuan, Henan Province. Excavated in 1979, the Xichuan cemetery consists of 20 tombs, and 5 horse-and-chariot pits. The orientation of this cemetery is very unique in that the

tombs are situated in a north-south row, and slightly parallel to the west of them are the horse-and-chariot pits in the shape of long rectangles. Each pit belongs to a nearby tomb where horse and chariot fittings are also unearthed (Fig. 25). The tomb of the highest rank located at the middle part of this cemetery, M2, is accompanied by the horse-and-chariot pit M2CH (Fig. 26) of 21.1 meters long and 4.5 –4.6 meters wide. Six chariots were juxtaposed horizontally, and the horses were set driving the chariots, facing west. Only a small proportion of the horse and chariot fittings, most of them are highly-developed structural components made from bronze, were buried in this pit, while most were placed inside the main tomb (HPICRA 1991: 208 –212). A similar situation is attested in other pits smaller in size (Fig. 27). Wu Xiaoyun (2009: 165 –167) correlated the amount of funerary goods in the tombs with the type and style of horse-and-chariot pits, concluding that only large and mid-size tombs of male aristocrats have the privilege of containing horse-and-chariot pits, and the noble rank is obviously exhibited in this cemetery.

The custom of burial at Shandong, namely the Qi cultural sphere, differs markedly from that of the Jin, the Central Plains and the Chu. Long horse pits with huge amount of horses, regardless whether or not chariots are present in the tomb proper, is the most prominent characteristic of Qi burials. The most significant example is the huge horse burial at Tomb No.5 of the Former City of Linzi 臨淄, the capital of the Qi state, generally recognized as the tomb of Duke Jing of Qi 齊景公 (r. 547 – 490 BCE). The tomb was excavated in 1964; 145 horses were unearthed in

the 215-meter-long horse pit north, east and west of the main tomb (Fig. 28-29).

During the second excavation in 1972, 83 more horses were discovered. It is estimated that the number of all buried horses could be around 600 (Zhang and Luo 1984). All the horses were buried after execution and placed in neat order. The horse heads were oriented outwards (Zhao 2011: 59). This horse burial is unparalleled anywhere else in China and exhibits the extreme of funeral horse sacrifice in China.

In 1990, another representative horse and chariot burial of the Qi state was discovered at the Zihedian 淄河店 site, Linzi, Shandong Province, considered to be the royal tombs of the Tian 田 family of the Qi state (who ruled this state from 386 BCE to 221 BCE). Again, a very long horse pit (Fig. 30) of 45 meters was affiliated with the tomb LZM2. The 69 horses buried in it were placed in parallel order, oriented to the north (since the pit is situated to the north of the tomb proper, the horses are facing outwards). It is of note that the easternmost part of this pit, containing six horse remains, is of 7.4 meters depth, which is 0.5 meters lower than the other part of the pit. Also there is a slope at the eastern side so that the horses may have been driven into the pit therefrom (see Fig. 31 for a panoramic view of the pit, and Fig. 30 for its relative position to the main tomb). (SPICRA 2007: 380–382)

Being different from the burial affiliated to the Tomb No.5 of the Former City of Linzi 臨淄故城, the tomb chamber of LZM2 contains more than 22 chariot bodies. The wheels were detached from the chariot body, and most of the chariots were placed on the secondary platform (Fig. 32, SPICRA 2007: 335–338). This tomb is

dated to the early Warring States period, and its inherited features from the Tomb No.5 of the Former City of Linzi are evident.

The other distinct cultural sphere is the Qin state region. Wu Xiaoyun (2009: 75) summarizes that most Qin horse and chariot burials are single-chariot pits with two-horse-drawn chariots buried as a full set as if being driven; a sacrificial charioteer often was buried at the back of the chariot carriage. This arrangement is very similar with the old custom of the Yinxu site. A typical pit, No. 98LDK1 at Yuandingshan 圓頂山, Lixian, Gansu Province, excavated in 1998, has been demonstrated convincingly to be of late Shang affinity (Yin 2012, see Fig. 33). Early Spring and Autumn period Qin burials, such as pits AS4, BS26 and BS 101 at the Baqitun 八旗屯 site, Fengxiang, Shaanxi Province; pit M2 at the Zhoujiaping 周家坪 site, Lingtai, Gansu Province; and later Spring and Autumn period Qin burials, such as a pit at Shangmengcun 上孟村 site, Changwu, Shaanxi Province discovered in 1978-1979 (Fig. 34), all belong to this burial tradition (Zhao 2011: 173 –174).

Another Qin state horse-and-chariot pits at Dabuzishan 大堡子山, Lixian, Gansu Province, is also worth mentioning because it is associated with the mausoleum of a duke of Qin, identified by the excavators as Duke Xiang of Qin 秦襄公 (r. 777-766 BCE). The size of this pit is so large that it contains 12 four-horse chariots placed in a 4 × 3 array. The excavator states that before the regretful looting, many gold-inlaid ornaments were present. Yet during excavation, only bronze and iron chariot fittings were discovered. There were still bronze funerary objects that remained in the

severely looted main tomb, but none of them are reported to be horse and chariot fittings. (Dai 2000) This indicates that the Qin horse and chariot burial custom differs greatly from other states. Despite the possible Shang association, the use of gold ornaments may well suggest influence from the North(west)ern nomadic tribes (cf. Shelach and Pines 2005).

Although varying greatly in regional custom, these Spring and Autumn period horse and chariot burials show a common feature: they were buried independently outside the main tomb, and the once prevalent dismantled chariot burial almost ceased to appear. Liu Yundong summarizes three distinct features of horse and chariot burials in the Spring and Autumn period: Firstly, the methods of burying are diverse. Some were laid juxtaposed, others one after another, and, more commonly, horse pits and chariot pits were separated. Secondly, the difference of social strata as shown in the horse and chariot burials is still conspicuous. The symbolism of the social estate is demonstrated strictly in horse and chariot burials. Thirdly, the spatial and temporal difference of horse and chariot burials is evident. Both uniformity and individuality existed in the Spring and Autumn horse and chariot burials (Liu 2008: 46-48).

D). Horse and chariot burials during the Warring States period

According to Lothar von Falkenhausen, from the middle Spring and Autumn period onward (starting approximately 600 BCE), the distinction between the lower elite and unranked commoner gradually was dissolved. The development of the tomb

structure and the pervasiveness of *mingqi*⁵⁹ reflect the demise of the tiered aristocratic ranking order (Falkenhausen 2006: 365-369, 394-399; which provides an in-depth analysis with ample archaeological data). Clay, bronze or wood models of horses and chariots and even *mingqi* horses and chariots became prevalent, and the use of real horses and chariots gradually diminishes.

One of the most representative horse and chariot burial at this time is the Jiuliandun 九連墩 burial at Zaoyang, Hubei Province (HPICRA 2003). The horse-and-chariot pit No. 1 features an assemblage of 33 chariots and 72 horses, with one of the chariots driven by 6 horses, with a length of 52.7 meters and a width of 9.5 meters (see a panoramic photo of this pit in Fig. 35). This is clearly an overstepping of the authority of the tomb owner, incompatible with his *dafu* 大夫 status.⁶⁰ At the same time period, the famous Zhongshan King Cuo 聿, sometimes also read Xi (r. 327-ca. 310 BCE), possessing status of a feudal lord 諸侯, was buried only with fewer than 10 chariots (Liu 1979, see Fig. 36). This phenomenon indicates that horse and chariot burial during the Warring States period lost the character of strict order, and instead it was employed to boast of the wealth of the tomb owner.

It is worth mentioning that the spatial diversification in the Warring States period became more distinct. This style was seen only in the Shang burials, but almost never before attested in Zhou burials. In the Warring States period, most Qin

⁵⁹ Vessels made specifically for funerary use, in miniature size and/or from inferior materials. See Lothar von Falkenhausen (2006: 537).

⁶⁰ A similar burial is Zihedian 淄河店 M2 at Zibo, Shandong Province, where more than 20 chariots and 69 horses were unearthed (SPICRA 2000).

horse-and-chariot pits with single chariot are trapezoid (such as pit S1 at Xicun 西村, Fengxiang, Shaanxi in Shang and Li 1986, see Fig. 37); Zhao pits are “L”-shaped or “T”-shaped (such as pits No. 3 and 4 at Baijiacun 百家村 site, Handan, Hebei Province, see Fig. 38, HPBCCWT 1962); long rows of juxtaposed chariots were found in Chu pits (such as the Luogang 羅崗 pit M1CH in Yicheng, Hubei Province, see Fig. 39, HPICRA 1993); whereas Qi tombs, such as the Zihedian cemetery discussed above, were often accompanied by horse-only pits with large number of horse burials. (Liu 2008: 48)

Among Qin culture sites, Warring States horse-and-chariot pits still show distinct, often old-fashioned features. A typical case of very old style of horse and chariot burial, burying one chariot and four horses as if they were driven inside each of the two tomb chambers, was discovered at the Miaozhuang 廟莊 site, Pingliang, Gansu Province, in two late Warring States Qin state tombs (Figs. 40-41, see Wei 1982).

Generally speaking, the use of horse and chariot burials in the Warring States period was disordered. Horse and chariot burials were no longer a necessity of showing off social rank. Also, the spatial diversification of Warring States horse and chariot burials reflects the theme of thought contending and decentralization.

2. Related issues

A). Social status and horse and chariot burials

The horse and chariot burials summarized above, mainly funerary sacrifices, are

associated closely with the social status of the owner of the tomb. Therefore, it is necessary to glance at the social status as reflected in horse and chariot burials.

The horse and chariot burials in the Shang Dynasty have been discovered mainly at the site of Yinxu. Wu Xiaoyun (2009: 93 –110) has made a case analysis based on copious data from three main sites: funerary remains at the Western Area 西區 of the Yinxu site (five horse-and-chariot pits), the Guojiazhuang site (four horse-and-chariot pits, two horse pits) and the sacrificial pits in front of the foundation of Yi Seven 乙七 building complex at the Xiaotun site (five horse-and-chariot pits). Her conclusion is not beyond all expectations: horse and chariot burials mainly concentrate in the tombs of the highest social class. In the Western Area of the Yinxu site, only those tombs with sloping entry ramps are accompanied by funerary horses and chariots (either buried in individual pits or the sloping entry ramps). Horse and chariot fittings were discovered in very few graves in the Western Area of the Yinxu site as well as in the large tombs such as Xiaotun M5 (Fu Hao Tomb), Wuguancun M260, Huangyuanzhuang M54, and Guozhuang M6. Most of the fittings buried are horse fittings, not chariot fittings. Wu takes M216 and M217 at the Western Area as an example and lists the unearthed funerary horse fittings in them. She also suggests that sacrificial horses in these tombs indicate that the tomb owners belong to a clan or tribe related to horse management (Wu 2009: 100).

In fact, M216 and M217 are the most prominent tombs in cemetery 4 of the Western Area, as has been acknowledged in Wu (2009: 94). These tombs are located

at the center of the cemetery, and are separated relatively from other tombs. The size, number of coffins, and funerary objects are all much more than in other tombs. Thus, it is necessary to claim that these tombs are related to higher social status rather than a distinct clan/tribe origin.

Wu (2009: 176 n13) also cited other sources to support her opinion that horse and chariot burials in this area accompany tribal difference, here explicitly, “related to the Northern areas” 與北方地帶相關. The “Northern” may refer to the Ordos and other (semi-)nomadic cultures, but still, given that most of the funerary objects in the large tombs she enumerates, Fu Hao Tomb, Wuguancun M260, and Guozhuang M6 are Shang indigenous artifacts, it is not possible to suppose that they are associated with the North. A more likely scenario is that the Shang elite buried in these large tombs had more privilege, so as to possess these valuable and rare objects (such as the beast-head-hilt knives and bronze mirrors) during their lives and after death.

Still, Wu (2009:108) has made an accurate conclusion that full horse and chariot burials only are affiliated with large tombs at Yinxu, while horse and chariot fittings mostly are attested in mid-size shaft-grave tombs. She then proposes that the horse and chariot fittings in mid-size tombs reflect the career relationship of the tomb owners with horses and chariots, which I deem as much more relevant than tribal diversity.

By painstaking spatial analysis of horse and chariot burials in three major Western Zhou cemeteries, the Beiyao, Zhangjiapo and Tianma-Qucun sites, Wu

Xiaoyun (2009: 111-146) repetitively underscores that horse and chariot burials in the Western Zhou period cannot serve as criteria for judging the social status of the tomb owners. Although horse and chariot burial became prevalent and reached its peak in the mid-Western Zhou period, and even some lower stratum of the nobles (the *Shi* 士 stratum) could enjoy (public)⁶¹ horse and chariot burials, it is nonetheless difficult to distinguish social classes of tomb owners solely based on horse and chariot burials. In stark contrast, large, exquisite funerary vessels, such as the *ding* and the *gui*, are reliable mostly in determining the rank of the tomb owner.

This phenomenon changed at the transition of the Western and Eastern Zhou Dynasties, as demonstrated in the Shangcunling Guo state cemetery, where the burials of chariots, horse gear and chariot fittings can be associated with the number of coffins and funerary objects to form a clear hierarchical scenario (Wu 2009: 153-154; Zhao 2011: 65, as reflected in CASSIA 1959: 42-44). The most representative fittings are numerous *luanling* which are paired with seven bronze tripods *ding* in the tomb of the Lord of Guo. Also, four *luanling* are paired with seven *ding* in the tombs of the princes, and with five *ding* in the tombs of the ministers and the wife of the Lord. Three *ding* and two *luanling* were found in the tombs of the wives of the ministers. The number of horses and chariots in corresponding pits shows this hierarchy as well.

Beginning in the early Spring and Autumn period, horse and chariot fittings even appeared in tombs of lower elite *shi*. By contrast, those high level elite, such as

⁶¹ Liu and Xu (2002: 46), see also Wu (2009: 146).

Minister of Zhao of the Jin state, enjoyed the company of a large-scale horse-and-chariot pit with fourteen chariots. As the funerary paraphernalia, including horse and chariot fittings, began to exhibit less and less exceptionality, however, contending elites tended to disregard its importance in their afterlife. Instead, more elaborate, sophisticated horse-and-chariot pits with sub-pits (in Jin cultural sphere) or extravagant parades (in Chu and, for horse-only pits, Qi) were chosen to demonstrate the distinctive prestige of the social standing of tomb owners. Along with this trend, the once widespread use of chariot fittings diminished from the mid-to-late Spring and Autumn period as these fittings ceased to reflect the social rank of the tomb owners.

B). Horse remains in the Northern Zone and related issues

In the previous section, I mentioned and discussed Wu Xiaoyun's association of horse and chariot fittings excavated in Yinxu with the Northern Zone. We cannot preclude, however, the deep, chronic relationship of the Northern people as the major providers of horses to the East Asian Heartland. By analyzing horse remains in the graves, we can learn some clues about the funerary use of the horse and horse-related materials developed in a more extended horizon.

The Dahuazhongzhuang 大華中莊 cemetery at Huangyuan, Qinghai Province, a site of the Kayue 卡約 culture (dated to 900-600 BCE) was excavated in 1983. One hundred and seventeen vertical-pit graves were excavated. About one-third of the graves were interred with animal remains such as horses, cattle, sheep, dogs and pigs

inside. Only the skulls and hooves of the horses were found. The skulls usually were placed at the secondary platform to the head side of the tomb occupant(s), whereas the hooves were placed at the four corners of the secondary platform. The same arrangement is attested for cattle bones, but the remains of other animals were scattered inside the coffin. It is interesting that the horse remains mainly were discovered as funerary goods for males, while cattle remains were for females (see Fig. 42 for example). Horses, outnumbering any other animal, are the major funerary animal offering (Qinghai 1985).

Excavated in 1989, a similar situation is attested at the Yanglang 楊郎 site at Guyuan, Ningxia Hui Autonomous Region, dated back to the Eastern Zhou Dynasty. In the 49 excavated graves, 43 were buried with horse skulls and hooves. Multiple horse remains were discovered in one chamber with the largest number of horse skull being ten, together with chariot fittings, as well as heads of other livestock (Fig. 43). Located in the Ordos cultural complex, bronze horse and chariot fittings are seen widely in these graves. While small fittings such as the *danglu* and horse head ornaments were placed near the heads of the tomb occupants, bigger fittings such as axle ornaments, shaft ornaments and bells were interred together with animal sacrifice (NICRA 1993).

If we turn to a site of later date and further to the east, the Xiaobaiyang 小白陽 cemetery at Xuanhua, Hebei Province (excavated in 1985), which belongs to the Upper Xiajiadian culture (1000-600 BCE), clearly exhibits a different scenario.

Among the 48 excavated graves, only nine were found with skulls and hooves from cattle and horses. In fact, only two were interred with horse skulls. This is quite different from the Qinghai and Ningxia cemeteries described above. Whereas no horse or chariot fitting is found in this cemetery, horse-shaped bronze plaques were found in five graves (ZMIMCR 1987). Since the grave style and the funerary goods of all graves do not indicate obvious dissimilarity, it is unlikely that the scarce evidence of animal sacrifice can be associated with social stratification. Therefore, the most acceptable explanation for the difference in horse burials between the three cemeteries is regional diversity, and this explanation is compatible with the archaeological evidence. The Ordos region, being advanced in both bronze technology and horse breeding, developed complicated horse gear and chariot fittings. The Kayue culture, situated in the fringe of the Tibetan Plateau, were off the main route of the transmission of bronze metallurgy (see Chapter 1); therefore, there are only horses and a very small number of bronze artifacts no real evidence for chariot technology. In the case of the Upper Xiajiadian culture, it is not that the horse is unimportant in daily life, but certainly this more advanced culture with closer interaction with both the Central Plains and the Steppe has its own perspective of the underworld. Even in its earlier stage, Upper Xiajiadian cemeteries are not characterized by the presence of animal sacrifice. We can take the Nanshangen 南山根 cemetery at Ningcheng, Liaoning Province, dated back to the Spring and Autumn period as an example. Fine animal-style funerary goods were found in graves, yet no animal bone is present

(CASIA 1975). The prevalence of animal-style bronze artifacts, such as plaques, could be a parallel to the contemporaneous practice of *mingqi* as funerary goods on the Warring States Central Plains. A strikingly refined bronze ring with two rabbit hunters riding on horseback from grave M3 at the Nanshangen site (Fig. 44, cf. Shelach 2009: 56) might be a typical representation of the exquisiteness of the other world among these Northern people.

In sum, the presence of horse-related materials in the cemeteries of the Northern people is ubiquitous, which highlights the aristocratic monopoly of horses in the cultural spheres of the Shang and the Zhou. In the deeper stratum, this phenomenon indicates the contrast between a more egalitarian pastoral society and a hierarchic sedentary one. For the Northern people, horses are not the badge of their identity but an integral part of their lives.

As Shui Tao (2001: 292) and Gideon Shelach (2009: 49-54) have demonstrated, there was a trend of transition to pastoralism among the Northern people by the late 2nd millennium BCE. The era before this transition is characterized by the dearth of horse remains among funerary animal sacrifices in the vast lands north and northeast of the Central Plains. It is remarkable that among these northern cultures of the 2nd millennium BCE, the Qijia culture generally is considered to be the first one that shifted to a more specialized pastoralist economy (Shui 2001: 291). At the same time, the Qijia culture also was the first one attested with horse remains in burials, whereas not a single piece of horse bone was unearthed from contemporary Ordos sites such as

the Zhukaigou 朱開溝 site at Ejin Horo Banner, Inner Mongolian Autonomous Region (Huang 2000). Therefore, Shelach asserts that the “pastoral shift” that occurred in the Gansu region had not begun by the end of the 2nd millennium BCE (Shelach 2005: 50). In view of both Shui and Shelach’s analysis, it is convincing to suggest that the domesticated horse, entering Gansu in the 2nd millennium BCE, triggered the pastoral shift of the Northern peoples. In the following centuries, the horse finally was introduced to the Ordos region around the end of the Zhukaigou culture, i.e., ca. 1200 BCE (see Shelach 2009:17),⁶² when the newly equipped Northern people encounter the lately developed Shang kingdom. Indeed, the horse (and possibly, the chariot) eventually was transmitted to the ruling center of the Shang, Anyang, via both commercial and aggressive interactions. While we still need more future archaeological evidence in the Northern Zone to confirm the above scenario, paleogeographical evidence provided in the next chapter will buttress this route from the Shang perspective.

⁶² Linduff (2003:144) reports that horse bones were discovered at the Zhuanlongzang 轉龍藏 site at Baotou, Inner Mongolia. In the archaeological report (Wang 1957), however, it is only briefly mentioned that horse bones were found in an ash pit. It is, therefore, quite possible that these bones are from *equus przewalskii*.

Chapter 4: The significance of the domesticated horse in pre-imperial China

The horse was used in many ways during the period of pre-imperial China.

Generally speaking, its use can be categorized in two ways: civil and military. In the present chapter, I will discuss the role the horse played in the civil and military realms, respectively.

1, The civil exploitation of the horse

A). The horse as a ritual animal in the Shang and Western Zhou Dynasties

Among the many state activities in pre-imperial China, rituals and military affairs were the most important ones, just as illustrated in the *Zuozhuan* (578 BCE, 13th year of Duke Cheng of Lu 魯成公, r. 590-573 BCE): 國之大事，在祀與戎 “The vital event of a state is sacrifice and warfare.”

The horse is used in both rituals and warfare, and its use is exceedingly important.

As early as the Shang Dynasty, the horse was involved in ritual activities. In the Shang period, the ancestral cult was dominant in the state ritual ceremonies. At the same time, a supreme god Di 帝⁶³ was worshipped together with natural gods such as the Sun 日, the Moon 月, the Mountain 山⁶⁴ and 岳⁶⁵ and the River 河 and

⁶³ Di is considered to be at the top of the Shang pantheon and its origin might be astronomical. See Pankenier (2004) and Didier (2009) for instance.

⁶⁴ Along with a series of graph bearing the “mountain” semantic classifier such as, most notably, 岳.

水.⁶⁶

The Shang people left enormous divination records on ox scapulae and turtle shells. The majority of these records are about various rites and sacrifices. In the sacrifices, food and wine were offered, as well as domesticated animals, such as oxen, pigs, sheep and dogs,⁶⁷ captures wild animals, and even human beings.

Although not frequently seen, there is evidence showing that the horse was sacrificed in the ancestral cult of the Shang court, such as *Heji* 19847 (Fig. 45):⁶⁸

甲子卜，扶，𠄎⁶⁹馬至祖乙。

Cracking made on *jiazi* (day 1), Fu (divined): Offer horse as sacrifice to Ancestor Yi. (Unless otherwise noted, all translations in this dissertation are by the author)

A similar divination record is attested in *Heji* 19813 front (Fig. 46), along with *Heji* 19847, from the earliest period of Yinxu oracle bone inscriptions (Shi 師 group, period I):

丙申卜，𠄎，𠄎⁷⁰馬大丁。用。

Cracking made on *Bingshen* (day 33), Fu (divined): Continue to offer horse as sacrifice to Great Ding. Used.

Whereas the horse is not used commonly as a sacrificial offering by the Shang court, the Shang king valued it extremely; in the divination records, importation of horses

⁶⁵ Instead of the commonly used traditional form of the character 嶽 *yu è* here I use the simplified homophone 岳, because its similarity with the Oracle Bone graph suggests the simplified form might probably be the original graph. For a thesis about the related topic see Peng (1982).

⁶⁶ For a complete list of the reconstructed Shang pantheon in the oracle bone inscriptions, see Wang (2007a: 308).

⁶⁷ For an archaeological study of Shang sacrificial animals, see Okamura (2004).

⁶⁸ All citations mentioned with the name *Heji* in this dissertation refer to Guo and Hu (1982).

⁶⁹ These pictographic fonts are from CHANT database of the Chinese University of Hong Kong.

⁷⁰ Note that both this graph and the pictographic graph in *Heji* 19847, are verbs indicating offering sacrifice to ancestors. This can be seen from its pictorial graphic structure showing a hand holding an offering (a small animal or a fish) to the ancestral tablet.

from outside tribesman is repeatedly requested (Shaughnessy 1988: 235–36; Qiu 1992: 232). In these records, a personal name is often associated with the graph 馬 “horse”, and the verbs linking the name with “horse” are 來 “bring,” 取 “take” or 以 “send,” for instance:

甲申卜，穀貞：以馬 (*Yibian* 7647)

Cracking made on *Jiashen* (day 21), Que divining: “send horses.”

己巳卜：雀取馬，以 (*Yibian* 4718)

Cracking made on *Jisi* (day 6), “Que will take horses and send them.”

古來馬 / 不其來馬 (*Heji* 945 front)

Gu brings horses./

He will not bring the horses.

These records might indicate that the horse was mainly brought as tribute by the allies of the Shang, and the import of the horse was so important that divinations should be made to see whether the horse would be brought in successfully. Among these imported horses, white horses were especially favored, as has been shown in Qiu (1992) and Wang (2007a: 329-31). Certain divinations were made to ask whether white horses would be brought in by the tribesmen. For instance, *Heji* 9177 front (Fig. 47):

甲辰卜，穀貞：奚來白馬……王固曰：吉，其來 / 甲辰卜，

穀貞：奚不其來白馬五

Cracking made on *jiachen* (day 41), Que divining: “Xi brings with him white horses...” The king prognosticated and said, “Auspicious; he will bring with him the horses.”

Cracking made on *jiachen*, Que divining: “Xi will perhaps not bring with him five white horses.”

(translated by Wang 2007a: 329)

Other divinations were made to ask if unborn horses might be white. For these records,

Wang Tao suggests that they indicate that the white color symbolizes good fortune:

小駝子白， 不白 (*Heji* 3411)

The foal born to the little mare will be white. (Verification) It was not white.

(translated by Wang 2007a: 330)

Furthermore, Wang Tao pointed out that in the divinations to determine the cause of illness or death of horses, the horses concerned always are white.

Also, different colored horses are mentioned in the oracle bone inscriptions.

Wang (2007a: 350-351) listed three examples of divination records belonging to the

He-group⁷¹ to ask if the horses for driving the king's chariots were good and tame.

Here, yellow and reddish horses were mentioned. In the examples Wang Tao

enumerated, *Heji* 28195, 28196 and 29418, the horses were brought in by various

people and were described as "left" and "right." This indicates that the horses

mentioned here are chariot horses, for normally the Shang chariots were driven by

two juxtaposed horses.

One divination record of particular interest is *Heji* 37514 belonging to the

Huang-group of inscriptions, considered to be the last stage of the divination records

at Yinxu. In this group, there are records concerning royal hunting, and this

inscription deals with which assortment of horses should be used for expeditions:

⁷¹ For the grouping and periodization of the oracle bone inscriptions, see Shaughnessy (1981-82), see also Wang (2007a: 315-321).

戊午卜，在潢，貞：王其罽大兕；車駮暨駮，亡災，罕（擒）

/車駮暨駮子，亡災/車左馬暨駮，亡災/車駮暨小駮，亡災

/車駮暨駮，亡災/車竝駮，亡災

Cracking made on *wuwu* (day 55) at Huang, divining: “The king will perhaps intercept a big buffalo.⁷² For the chariot it should be X-horse paired with dark horse, there will be no misfortune, and catch the animal”.

It should be black horse paired with X-horse, and the prince will then have no misfortune.

It should be the left horse paired with right-horse (?), and there is no misfortune.

It should be X-horse paired with small dark horse, and there will be no misfortune.

It should be X-horse paired with dark horse, and there is no misfortune.

It should be X-horse paired together, and there is no misfortune.

(translated by Wang 2007a: 365)

Here the horses’ names are not all deciphered. Some of them suggest the color of the horse, others might be different features;⁷³ but as Wang Tao surmises, they probably refer to chariot horses of different kinds in the context of royal hunting. Again, divination is made for the matching of the two chariot horses to ask if there will be misfortune.

Among the non-royal divination records found at Huayuanzhuang 花園莊 in Yinxu, roughly contemporary with Period I of the royal records, many mentioned horses. These undeciphered names may suggest horses were used in sacrifice

⁷² Here Wang Tao translated it *si* 兕 as a big rhinoceros. However, according to Lefevre (1990), the animal referred by the graph here should be identified with buffalo.

⁷³ Various horse names are later mentioned in Warring States manuscripts such as those on the Zenghouyi Tomb bamboo strips, as discussed in Xiao (2011: 185-193).

(CASSIA 2003: 403, 513), though still not persuasive:

辛未，歲祖乙黑牡一，祐鬯一；子祝，曰：云兕正祖惟？
曰：錄盍不斫醕/乙亥夕，歲祖乙黑牝一，子祝。

(*Huayuanzhuang* 161)

On *xinwei* (day 8), we will perform the slaughtering sacrifice to grandfather Yi of one black bull, and offer one jar of aromatic wine. The prince makes the prayer, saying: “The ancestors are not pleased,” saying: “should Yun Si make correct sacrifices to the ancestors?” saying: “Lu Tai will not perform the dismembering rite⁷⁴ of X-horse”.

At dusk on *yihai* (day 12), the slaughtering sacrifice is performed to Grandfather Yi of one black cow; and the prince makes a prayer.

(transcribed and translated by Wang 2007b: 555)

丙午卜，其敕火勺寧馮。用/弜丐/丁未卜，惠邵乎勺寧馮/惠虎庚乎勺寧馮/弜勺黑馬。用。(*Huayuanzhuang* 179)

Cracking made on *bingwu* (day 43), perhaps Chi Huo will make a pledge for the tamed X-horses. Used.

We should not pledge [for the horses].

Cracking made on *dingwei* (day 44), it should be Shao who is called to make a pledge for tamed X-horses.

It should be Hu Geng who is called to pledge for tamed horses.

We should not pledge for black horses. Used.

(transcribed and translated by Wang 2007b: 557)

And especially, the butchering of black horses:

癸酉卜，惠召……鬻馬/癸酉卜，弜鬻新黑馬，又剝/癸酉卜，弜鬻新黑[馬]。(*Huayuanzhuang* 239)

Cracking made on *guiyou* (day 10), it should be Zhao to ... slaughter the horses.

Cracking made on *guiyou*, we should not slaughter black horses for Xin, and to stab them.

Cracking made on *guiyou*, we should not slaughter black [horses] for Xin.

⁷⁴ Here the character *zhe* 斫 means dismemberment. However, the character after it, a *hapax*, may indicate no affiliation with domestic horse.

(transcribed and translated by Wang 2007b: 558)⁷⁵

It is interesting that horses were used by the princes as sacrificial offerings at ancestral cult ceremonies. As Wang Tao suggested, color is an important feature. Whereas white horses were considered an auspicious omen, yellow and reddish horses were used as chariot horses, black horses were not pledged and were used as sacrificial offerings. We do not know if these black horses (as well as the X-horse in *Huayuanzhuang* 161) were domestic or wild/hunted; but given the knowledge that the king also used horses for sacrificial offerings, it is possible that the horses for sacrifice were domesticated.

During the Western Zhou period, the use of the horse in rituals is much more widespread. Archaeological data convincingly indicates that the horse was used for sacrificial offerings along with the chariot, as seen in Chapter 3. Here, I add examples of documentary sources.

Among the bronze inscriptions, several mentioned the horse as reward from the king or the lord to a subject or vassal. The *Zuoce Da fangding* 作册大方鼎, a set of four bronze tetrapods made in the reign of King Kang (1005–978 BCE) unearthed from Luoyang,⁷⁶ recorded a bestowal of white horses by Duke Shi of Shao 召公奭, contemporary of King Wu 周武王 (r. 1049-1043 BCE)⁷⁷ of Zhou (*Jicheng* 2760,

⁷⁵ The transcription and translation of the graph 鬻 “butcher” is thanks to a suggestion from Matthew Anderson (personal communication, March 2012) who followed the explanation of Zhu Qixiang 朱歧祥 about the transcription.

⁷⁶ Two of the tetrapods are preserved in Central Museum at Taipei now. One is preserved at the Freer Gallery of Art in Washington, DC, and another in Norfolk, VA.

⁷⁷ All reigning dates of Western Zhou kings are cited from Shaughnessy (1991: xix).

Fig. 48):⁷⁸

公來鑄武王、成王異(祀)鼎。佳(惟)四月既生霸己丑，公賞
乍(作)册大白馬，⁷⁹大揚皇天尹大僕宦。用乍(作)且(祖)丁寶
隣彝。鬯册

The Duke came and cast the sacrificial tetrapods of King Wu and King Cheng. It was in the fourth month, after the growing brightness, *jichou* (day 26), the Duke bestowed white horses to Zuoce Da, greatly extolling the beneficent fame of the August Heaven's Helper, and thus making the precious sacrificial vessel of Ancestor Ding. (Clan emblem)

Zuoce Da, the maker of this bronze vessel, then praised the benevolence of the Duke, and made this tetrapod. This is a clear example that the bestowal of horses can be an important ritual in the Western Zhou period. Mention of the bestowing white horses is not uncommon in Western Zhou bronze inscriptions. A similar scenario is found, for example, in the *Shao you* 召卣 (*Jicheng* 5416), a bronze vessel dating to the reign of King Zhao of Zhou 周昭王 (977–957 BCE). The vessel maker Shao 召 was given a white horse along with other rewards. The significance of the inscription on the *Zuoce Da fangding*, however, is that only the bestowal of white horses could lead to the making of bronze vessels as a commemoration of this gift bestowal. Just like their value in the Shang Dynasty, white horses were regarded as exceptionally auspicious gifts among Western Zhou elites.

In later times, horses are often bestowed as a team of four, from the Zhou king to

⁷⁸ All citations mentioned with the name *Jicheng* in this dissertation refer to CASSIA (1984-94).

⁷⁹ See Shirakawa (1962:440) for a detailed explanation of this inscription.

the military officials or feudal lords, as a sign for exerting the Heaven's mandate to the remote areas. An often cited typical example is the inscription on the *Guoji Zibai pan* 虢季子白盤 (*Jicheng* 10173, Fig. 49), dating to the reign of King Xuan of Zhou 周宣王 (r. 827/25 – 782 BCE),⁸⁰ stating:

王易(賜)乘馬，是用左(佐)王；易(賜)用弓，彤矢其央；易(賜)用戍，用政(征)蠻方。

The king bestowed [on Zibai] a team of four horses and herewith to support the king, bestow a bow therewith and brilliant scarlet arrows; bestow an axe and herewith to subjugate the barbarian regions.

Parallel formulaic usage is attested in the *Xi Jia pan* 兮甲盤 (*Jicheng* 10174, Fig. 50), also from King Xuan's reign:

王易(賜)兮甲馬四匹、鞵車。王令甲政鬲(司)成周四方責(積)，至于南淮尸(夷)。

The king bestowed Xi Jia four horses and a carriage. The king ordered Jia to administer the Cheng Zhou capital⁸¹ and in charge of the taxation of the four directions, till the Huaiyi in the South.

During King Xuan's reign, the bronze vessel with the longest inscription consisted of 499 graphs, the famous *Maogong ding* 毛公鼎 tripod (*Jicheng* 2841), also contains a long gift list with a team of four horse and horse gear: 馬四匹、攸(鑿)勒、金羸、金雁 “a team of four horses, with bits and bridles, bronze frontlets and gilt

⁸⁰ This has been generally agreed since Tang Lan's (1950) periodization, see also Shirakawa (2000:230-233). The vessel is preserved at National Museum of China.

⁸¹ Cheng Zhou is the Western Zhou name of Luoyi 洛邑, modern Luoyang, Henan Province.

girthstraps.”⁸² This list of horse team is widely attested elsewhere as paraphernalia for a legitimized elite, usually a clan leader,⁸³ from bronze inscriptions dated back to King Yi 周懿王 (r. 899/97-873 BCE) such as the *Xing xu* 癯盥 (*Jicheng* 4462) and the *Wu fangyi gai* 吳方彝蓋 (*Jicheng* 9898), King Li 周厲王 (r. 857/53-842 BCE) such as the *Sannian Shi Dui gui* 三年師兌簋 (*Jicheng* 4318) and the *Shi Ke xu* 師克盥 (*Jicheng* 4467), down to the inscriptions in King Xuan’s reign.

To be concluded, horses and chariots, among other precious gifts, were often bestowed by the king and the grand ministers to feudal lords in the Western Zhou period, as recorded in bronze inscriptions.

B). The horse in the Spring and Autumn period

In the Spring and Autumn period, horses were used extensively as gifts within the elite class, not only limited to the king and the feudal lords but also expanded to the senior officials and ministers. Several records are attested in the *Zuozhuan*. Firstly, the Zhou king still bestowed horses onto the feudal lords. For example, in 676 BCE, the eighteenth year of Duke Zhuang of Lu (魯莊公, r. 693–662 BCE):

This spring, the duke of Guo and the marquis of Jin appeared at the king's court. The king feasted them, supplying them with new, sweet spirits, and conferring gifts on them to encourage their festivity. To each of them he gave five pairs of jade ornaments and three horses; —which was contrary to propriety. When the king bestows his favors on the princes, as their titles and rank are different, so also should his offerings be.

⁸² For a transcription and translation of the complete list see Shaughnessy (1991:81).

⁸³ Cf. Falkenhausen (2006: 53-56) for the function of bronze inscription in the study of Western Zhou elite.

He does not take the offerings of one, and, as it were, lend them to another.

(translated by Legge 1872)⁸⁴

The Zhou king (King Xi of Zhou 周釐王, r. 681-677 BCE) bestowed five pairs of jade ornaments and three horses on both the duke of Guo and the marquis of Jin. The author of the *Zuo zhuan*, Zuoqiu Ming 左丘明 (556-451 BCE) commented here as “contrary to propriety” 非禮也. After this, he elaborated that the king should offer different gifts to the duke and the marquis. From this we can see that in the Spring and Autumn period the king’s obedience to the rites was not as strict as before and could be criticized by the historian. This might infer that the king’s authority was not as stable as in the Western Zhou Dynasty.

In the Spring and Autumn period, the horse was also used commonly as a gift between the elite. This is recorded in the *Zuo zhuan* as well. For instance, in 638 BCE, the twenty-second year of Duke Xi of Lu (魯僖公, r. 659-627 BCE), when the prince of Jin, Chong’er 重耳 (later became Duke Wen of Jin 晉文公, r. 636–628 BCE), who had just escaped from a coup d’état in his own state, arrived at the state of Song, Duke Xiang of Song (宋襄公, r. 650-637 BCE) presented him with 20 teams of horses. Before that, in 644 BCE in the state of Qi, Duke Huan of Qi (齊桓公, r. 685-643 BCE) also offered him 20 teams of horses, and gave him a lady of his own surname to take as a wife. These horses were added to the expedition of Chong’er and eventually helped him to become a hegemon of China.

⁸⁴ All quotations from the *Zuo zhuan* in this dissertation are from the online version of translation and transliteration with some slight emendations from the author: <http://goo.gl/PDy1s>. Accessed Dec. 2011.

Horses were not only conferred at formal occasions but also in private relationships.

An example is in the *Zuozhuan* in year 536 BCE (the sixth year of Duke Zhao of Lu 魯昭公, r. 541-510 BCE):

Prince Qiji went to Jin, — to return the visit of Hanzi. As he was passing by [the capital of] Zheng, Han Hu, Gongsun Qiao, and You Ji followed the Earl of Zheng to pay him the compliments of the journey at Zha; but he declined and would not presume to see them. [The earl], however, earnestly begged that he would do so, [which he did], behaving [to the earl] as if he were having an interview with [his own king]. [Afterwards] he had a private audience of [the earl], with eight of his chariots [as his offering]; he saw Zipi, as if he were seeing the highest minister [of Chu], with an offering of six horses; Zichan, with four; and Zitaishu with two. He forbade his foragers, grooms, and fuel-collectors to go into the fields. No trees were to be cut down for fuel; no grain nor vegetables were to be gathered; no houses were to be unroofed; there was to be no violent begging. He made a declaration that whoever should violate his orders, if he were an officer, he should be dismissed, and if he were a smaller man, he should be reduced still lower. His men were to exercise no oppression where they lodged; hosts should not be troubled by their guests. In going and returning he observed these rules. The three ministers of Zheng all knew that he would [yet] be king [of Chu].

Just as depicted in the above passage, horses were widely used as private gifts and the rite of bestowal was gradually lost in the course of time. At the end of the Spring and Autumn period the flow of horses between the elite became almost free, thus opening an age of horsemanship in the Warring States period.

In the *Zuozhuan* there is also a record of horse sacrifice in ritual:

In 564 BCE, the ninth year of Duke Xiang of Lu (魯襄公, r. 572-542 BCE),

In the duke's 9th year, in spring, there was a fire in Song.

Yue Xi (Zihan) was then minister of Works, and made in consequence [the following] regulations [for such an event]. He appointed the officer Bo to take charge of the streets where the fire had not reached. He was to remove small houses, and plaster over large ones. He was to set forth baskets and barrows for carrying earth; provide well-ropes and buckets; prepare water jars; have things arranged according to their weight; dam the water up in places where it was collected; have earth and mud stored up; go round the walls, and measure off the places where watch and ward should be kept; and signalize the line of the fire. He appointed Hua Chen to have the public workmen in readiness, and to order the commandants outside the city to march their men from the borders and various stations to the place of the fire. He appointed Hua Yue to arrange that the officers of the right should be prepared for all they might be called on to do; and Xiang Xu to arrange similarly for the officers of the left. He appointed Yue Chuan in the same way to prepare the various instruments of punishment. He appointed Huang Yun to give orders to the master of the horse to bring out horses, and the chariot-master to bring out chariots, and to be prepared with buff-coats and weapons, in readiness for military guard. He appointed Xi Chuwu to look after the records kept in the different repositories. He ordered the superintendent and officers of the harem to maintain a careful watch in the palace. The masters of the right and left were to order the headmen of the 4 village-districts reverently to offer sacrifices. The great officer of religion was to sacrifice horses on the walls, and sacrifice to Pan'geng 盤庚⁸⁵ outside the western gate.

In the above paragraph, horses were killed at the four city gates as a sacrifice to ancestors for extinguishing a huge fire. Why the horse was used here is of interest, for most ancestral sacrifices use oxen and sheep/goat. Perhaps it is because the horse is related to the all-*yang* 陽 or the *qian* 乾 hexagram, and the killing of the horse

⁸⁵ The King of the Shang and the ancestor of the Song state. He is traditionally believed to move the Shang capital to Yin 殷, the last royal residence and the place from where most of today's information of the Shang Dynasty is gathered.

symbolizes the elimination of the *yangqi* 陽气 that assisted the fire.⁸⁶

In the Spring and Autumn period, the horse was used more often as funeral sacrificial offerings than before, especially in the state of Qi (for archaeological evidence, see Chapter 3). At that time, Qi was a prosperous state, and many kinds of music, games and gambling flourished in the capital of Linzi 臨淄. As the *Zhanguo ce Qi ce yi* 戰國策 齊策一 describes: “In the city of Linzi are seventy thousand households. . . . Linzi was so wealthy and well supplied that all of its inhabitants play the flute or strum the harp, pluck the zither or strike the lyre. They match gamecocks, race their hounds, gamble and play ball.”⁸⁷ Qi was then viewed as a state of extravagance and epicurean life.

The state of Qi also contained large areas of pasturelands. The semi-nomadic Laiyi 萊夷 tribes originally dwelled there, living in the region that is today the Shandong peninsula.⁸⁸ During the Western Zhou Dynasty (1046-771 BCE), the citizens of Qi fought with the Laiyi for more than 200 years; in the Spring and Autumn era, they battled against the Shanrong 山戎 and Di 狄 people (Northern China semi-nomads)⁸⁹. The state of Qi obtained plenty of horses from these nomadic tribes, and formed a tradition of breeding and using horses (Zhang and Bian 2002: 82-83).

⁸⁶ The horse is associated with the all-*yang* hexagram Qian in the *Yi zhuan* 易傳說卦傳 as preserved in the *Zhou yi zhengyi* 周易正義 by Kong Yingda 孔穎達.

⁸⁷ Crump (1970: 137-38). As Shi (1988: 121) has pointed out, Linzi was the biggest metropolis in the Warring States China and even in the Former Han period (206 BCE-9 CE).

⁸⁸ *Shi ji* 2, 55.

⁸⁹ See Di Cosmo (2002: 93-126) for a comprehensive discussion of the various non-Chinese ethnic groups living in Zhou Dynasty China.

The Qi aristocratic elite were deeply attached to the horse. For example, Duke Jing of Qi (r. 547-490 BCE) was depicted as “being fond of building palaces, gathering dogs and horses, extravagant, taxing and punishing heavily.”⁹⁰

Archaeological evidence also indicates that the Qi elite buried many horses in their tombs.

Also, at the southeast of Linzi, a large-size horse-and-chariot pit dated to the mid-Spring and Autumn period (6th c. BCE) was unearthed. This pit has a length of 32 meter and contained 10 chariots and 32 horses (Zhang 2001: 132). Another remarkable archaeological discovery is a horse pit at the Qi royal tombs of the Warring States period with 69 horses, along with a chariot pit with more than twenty chariots (Luo 1993).

According to the *Yanzi Chunqiu* 晏子春秋 “Spring and Autumn of Master Yan” (Inner Chapters miscellaneous 6. 2), a special charioteering game, “hubcap bumping,” used to be popular among the Qi elite. The point of the game was for the charioteers to bump each other’s hubcaps. Because it was too dangerous, the Qi chancellor Yan Ying 晏嬰 (578-500 BCE) prohibited this game.

C). Tian Ji’s Chariot Races – a case of the horse’s use in games

The Qi elites’ fondness for horses is also a reason for massive sacrifice of horses as recorded in documentary sources. In the Warring States period, chariot races

⁹⁰ *Shi ji* 32, 1504.

became extremely popular among the Qi elites. A famous story recorded in the *Shi ji* (65, 2162-63) vividly depicts the Qi elites' enthusiasm for this sport:

As the envoy of Qi arrived at the capital of Wei, Daliang 大梁, Sun Bin 孫臏, when a prisoner of Wei, privately met him and lobbied the envoy. The envoy of Qi thought him unusual, and secretly carried him to the state of Qi. General Tian Ji 田忌 of Qi was friendly to Sun Bin and treated him as a guest.

Tian Ji often participated in high stakes chariot races with Qi princes. Sun Bin noticed that the strength of the horses' legs was similar, and that there were upper, middle and lower classes of horses. He thus said to Tian Ji: "Please just place a high stake. I can help you win." Trusting him, Tian Ji bet 1,000 pieces of gold with the king and princes.

Just before the start of the game, Sun Bin said, "Now pit your lower class team of four horses against their upper classes, your upper class against their middle classes, your middle class against their lower classes." After the end of three rounds, Tian Ji lost once and won twice. In the end, he had won 1,000 pieces of gold from the king.

Therefore, Tian Ji recommended Sun Bin to King Wei of Qi. After King Wei asked him about the art of war, he was appointed as the king's military counselor.⁹¹

Given that the strengths of the horses in the same class were similar, there was no assurance that Tian Ji was certain of winning. Yet Sun Bin must have calculated the probability of winning before the competition began. If we assume that all the horses of the same class had similar strength, as the text indicates, and the number of princes participating was n , then the probability of winning one round is: $1/(n + 2)$. This means that the more participants there were, the less chance for Tian Ji to win.

Sun Bin's arrangement is a must-win strategy, however, even though in the first

⁹¹ *Shi ji* 65, 2162-63.

round Tian Ji's lower-class horses caused him to lose 1,000 pieces of gold. Here, we mark his payoff as -1000. In the second round, his upper-class horses surpassed all middle-class horses, and he won 1000 pieces of gold from all other participants including the king. The payoff for this round is $(n + 1) \times 1000$. Likewise, he won the third round with his middle-class horses, with the payoff of $(n + 1) \times 1000$. He won 2,000 gold pieces from the king in the second and third rounds, but the text records that Tian Ji won 1,000 pieces of gold. This infers that the king won the first round. Below are the actual payoffs of all the participants in the races.

Table 1: Payoffs of the participants

	King Wei of Qi	Tian Ji	Princes (n)
1 st round	$(n + 1) \times 1000$	-1000	-1000
2 nd round	-1000	$(n + 1) \times 1000$	-1000
3 rd round	-1000	$(n + 1) \times 1000$	-1000
Total	$(n - 1) \times 1000$	$(2n + 1) \times 1000$	-3000

We may infer several critical points from the text. First of all, the elite of the state of Qi, or at least the ruling Tian clan, were enthusiastic about chariot races. In the decisive games, King Wei of Qi attended the races and placed a high stake. Additionally, princes and more distant relatives of the Tian clan, such as General Tian Ji, frequently placed bets on the games. It is not clear if chariot races were permitted outside the Tian clan, but its popularity among the elite is manifestly depicted in the text.

Secondly, any of the upper-class horses were superior to any of the middle-class horses, and any of the middle-class horses were superior to any of the lower-class

horses. In contrast, the gap between superior and inferior horses within each class is not significant.

Thirdly, the rule of the chariot race is fixed but loose. Thus, Sun Bin's arrangement was not viewed as "cheating."⁹² In the first round, Tian Ji's horses must be inferior to the king's and other princes' horses, thus he lost his 1,000 gold piece stake. In the second and third rounds, however, Tian Ji's horses were superior to all the others, and he won back twice the amount he had lost. We can infer from the text that the king won 1,000 pieces of gold in the first round. This implies that the king's horses were superior to those of the princes, at least in the upper class. Besides, Tian Ji also must have won stakes from the other princes who did not win a single round.

From the abovementioned points, we can reconstruct a scene of chariot racing in the state of Qi in general. The participants⁹³ are aristocrats of the Tian clan, the ruling class of the Qi state since 386 BCE.⁹⁴ In the historical texts, they are called "princes," *gongzi* 公子, which originally meant the "son of a vassal." Nevertheless, Tian Ji, a general and a distant relative of the king, also could participate in the chariot racing. It is likely that the reference of "princes" might be all male along with the aristocrats who belonged to the direct lineage of the Tian clan. Historical evidence indicates that most of the Tian clan aristocrats did not participate in military and bureaucratic affairs,

⁹² It is noteworthy that the Chinese "incorporated philosophical and moral qualities to their sports" (Crowther 2007: 2). Thus, Sun Bin's strategy would first have been assessed for philosophical and moral value. Even though he broke the rule of the races, he was viewed as shrewd and wise. This reflects on the Chinese value that will be mentioned below. Cf. Lau and Ames (2003: 8) for the appreciation from a philosophical perspective.

⁹³ "Participants" refers to the players who placed bets in the game, not the charioteers who participated in person. It is quite likely that they did not drive the chariots themselves.

⁹⁴ Qi was founded by the Jiang 姜 clan in 11 c. BCE. The Jiang clan lost the throne to the Tian clan in 481 BCE (Lewis 1999: 598).

and even King Wei of Qi mainly relied upon the newly risen scholar-knights.⁹⁵

Several four-horse chariots were arranged to compete on the racecourse. It is quite possible that only the driver was on board, without archer and halberdier. Three classes of horses were employed in three rounds of competition. The total number of chariots in each round is unknown, but at least several princes joined the races. According to the text, we may assume that their horses (including Tian Ji's horses) were of similar rank within the same class. Moreover, retainers could act as advisors to the participants, as Sun Bin did.

In such a situation, normal competitors could not be certain to defeat the king in any of the three rounds, especially when the text implies that the king's horses were relatively superior. As the king only decided to compete in the normal order of Upper, Middle, and Lower classes, Tian Ji could have employed six different strategies. Apparently the one with the order of Lower, Upper and Middle classes assured his victory.

Actually, Tian Ji had only a 1 in 6 chance of winning; yet Sun Bin could secure victory within his grasp even before the match. His successful strategy was based on the information about the horse classes and his observation of the racetrack. Sun Bin knew the competition order and the actual strength of the players, but the king and other princes did not realize that Sun Bin could change the competition order. By utilizing this information, Sun Bin's strategy became fully effective. As a brilliant

⁹⁵ See for example, *Shi ji* 126, 3197, where King Wei of Qi was said to “entrust the political affairs to the ministers and officials”.

strategist, Sun Bin practiced the teaching of his alleged ancestor Sun Tzu: “. . . one who knows the enemy and knows himself will not be endangered in a hundred engagements.”⁹⁶ As D. C. Lau and Roger T. Ames have noted, this anecdote “. . .reflects several crucial tenets of Sun Bin’s military philosophy” (Lau and Ames 2003:7). On the contrary, other participants, including the king, always followed the same competition order. Therefore, their information was transparent to Sun Bin. Their immutable strategy led to their eventual defeat.

The reason why chariot racing did not fully develop in China is worth discussing. It has a place in the historical background of the transitional age of China. From the mid Spring and Autumn period onwards, the city-states of the Zhou world began to transform into territorial states (Hsu 1999: 572-75). The new state was centered on the absolute monarch and his capital (Lewis 1999: 597-98). This trend peaked when the First Emperor of Qin (r. as King of Qin 246-221 BCE, as emperor 221-210 BCE) unified China and established a centralized empire. During the time of the transitional age, political turmoil and military conquest became the main theme of Chinese history. The aristocrats ceased to learn the Six Arts, and they relied mainly upon the scholar-knights who provided civil and military service as well as entertainment. Nevertheless, although the leading aristocratic clans, such as the Tian clan in the state of Qi, did offer philanthropic activities for the populace of the capital (Lewis 1999: 599), no evidence suggests that they ever allowed ordinary people to attend the

⁹⁶ *Sun Tzu* 3.6, translated by Sawyer (1993: 162).

prestigious chariot races. Since the spectators at the chariot races were all from the ruling clan, the chance to popularize this game was minimal.

Later on, during the Qin-Han Empire (221 BCE-220 CE), the wealthy elite still showed fervor at horse races. In the *Yan tie lun* (35. 3) 鹽鐵論 授時 “Discourses on Salt and Iron,”⁹⁷ an official said “. . . those who play chess and horseback racing are wealthy juniors, not people in poverty.” This source clearly indicates that equestrianism was only among the elite in the Qin-Han Empire. During this period, chariot racing was replaced by horseback riding as a popular recreation, and eventually disappeared from the stage of Chinese history.

D). The horse in agriculture

In pre-imperial China, oxen were used mainly as animals for farming. According to the *Guoyu* 國語·晉語九, ox plowing began in the Spring and Autumn period: 宗廟之犧為畎畝之勤 “sacrifices in the ancestral temple became services in the fields”.

Ox plowing became common in the Warring States period. In the *Xinxu: Ci she* 新序 刺奢, it is recorded that the people in the Zou 鄒 state 飽牛而耕 “fed the oxen and let them plow” at the time of Duke Mu of Zou 鄒穆公 (contemporary of Mencius). The *Zhanguo ce Zhao ce yi* 戰國策 趙策一 also depicts that the state of Qin has 牛田, 水通糧, which means “ox plowing and transporting grain by water.”

At the same time, the horse’s use in agriculture also is mentioned in the classics.

⁹⁷ *Yan tie lun* is a compilation of the court debate on the policy regarding salt and iron in 84 BCE. An abridged English translation of chapters 1 through 28 is Gale (1967).

In *juan 46* of the *Dao de jing* 道德經, it appears 天下有道，卻走馬以糞. Gu Zhengkun (1995: 198-99) translated it as “When the Tao prevails in the world, the battle steeds are returned to farmers for tilling the fields.” You Xiuling (2002) disagreed with the translation of 以糞 as “tilling the fields,” pointing out that the character 糞 means “sowing seeds.”

As for other attestations of the use of the horse in agriculture, in the third chapter of the *Yan tie lun: Weitong* 鹽鐵論·未通, it is recorded that in the ancient past of the time of Yu 禹, legendary founder of the Xia Dynasty, 農夫以馬耕載，而民莫不騎乘；當此之時，卻走馬以糞. The first half of this sentence can be translated as “farmers used horses for plowing and carrying, and people all rode them.” This seems to be evidence of horse plowing. Another piece of evidence also is shown in the *Yan tie lun: San buzhu* 鹽鐵論·散不足, in the ancient times the horses 行則服輓，止則就犁 “while traveling the horses were under the yoke, while stopping they were attached a plough.”

Nevertheless, the records in the *Yan tie lun*, compiled after the Conference on Salt and Iron (81 BCE), mainly consisted of discourses of the Confucians who often exaggerated the comfortable life of the ancient times. Since there is no archaeological evidence showing the use of the horse before the Shang Dynasty, and all evidence from the Shang Dynasty limited the use of the horse to the elite, it is not possible to locate any horse plowing practice in China before the Zhou Dynasty.

During the Western Zhou Dynasty, the *Chengma fa* 乘馬法 was implemented as

a method of military tax (see below and Chapter 5). Common people began to share the right of keeping horses. This provides the possibility for the horse to be used in agriculture.

Assembling all the information above, we may conclude that the horse was first used in agriculture in the Zhou Dynasty, after the implementation and enforcement of the *Chengma Fa*. Both mounted sowing and horse plowing might have occurred during the Eastern Zhou Dynasty, especially in the Warring States period.

Compared with oxen, however, horses were much less used in agriculture in the later history of China. There are many reasons for this phenomenon. First of all, a unified authoritarian empire in the later Chinese history calls for state requisition of horses in wartime. Horses in the rural areas were often expropriated and thus were not as secure as oxen for agriculture. Secondly, within the typical self-sufficient small peasant farm in China, the core of producing is the family. Family production tends to control the cost. Whereas horse plowing is more efficient than ox plowing, its cost is much higher. Therefore in the small-scale family farm, ox plowing has a big advantage. Thirdly, the horse enjoyed a special status in traditional China as the most important livestock. Because of the crucial use of the horse in warfare, it became a consumer of grains, while the ox provided service to the economy. Such a division of labor further augmented the outstanding position of the horse in the world of livestock in ancient China.

2, The Horse in Warfare

A). Horse-drawn chariots in military affairs

The earliest documentation of the horse in military affairs is in several oracle bone inscriptions, though most of them were ambiguous. Just as Edward Shaughnessy has observed, horse “occurs far more frequently than does the word *che* (chariot), but an even greater percentage of these occurrences refers to proper names rather than to horses *sui generis*” (Shaughnessy 1988: 233). Shaughnessy (1988: 218) analyzed three inscriptions. He argued that two of these inscriptions, both belonging to the Bin 賓 group of period I, record the same event:

□午卜，爭[貞]...吾方...馬...于唐

Cracking on –*wu*, Zheng ...: “Gongfang... horses... at Tang”
(*Heji* 8588 = *Xubian*⁹⁸ 3.8.7, Fig. 51)

癸未[御][吾]方于...奚馬廿丙又...二月才(在)鼻卜

On *guiwei* (day 20), defended against the Gongfang at...,
tethering twenty pairs of horses and..., second month, divining
at Bi.

(*Heji* 1098 = *Qianbian*⁹⁹ 2.19.1, Fig. 52)

Shaughnessy concluded that the inscriptions attest to “a limited military usage” of the horse and chariots by the Gongfang 吾方, a “marauding people”¹⁰⁰ who probably lived north(west) to the Shang dominion (Shaughnessy 1988:219). As for the southern geographic limit of the Gongfang people, it is believed to be in the modern

⁹⁸ This abbreviated book name is for Luo (1970b).

⁹⁹ This abbreviated book name is for Luo (1970a).

¹⁰⁰ See Thorp (2006:216) for the discussion of –fang people in oracle bone inscriptions.

northwestern Henan and southern Shanxi provinces, and the battlefield is in this area west of the Taihang range (Keightley 1999:288; Shaughnessy 1988:218). The Shang army probably captured twenty pairs of horses after victory over the invading Gongfang. Another possible horse-powered enemy of the Shang is Mafang 馬方, named after the horse.¹⁰¹

Here it is notable that horses and chariots were booties in the warfare between the Shang and Weifang 危方, another neighboring tribe:

...小臣牆比伐，卑危美...人二十人四，而千五百𠄎，隤
百...丙，車二丙，𠄎百八十三，函五十，矢...用虫白麋于
大乙，用𠄎白印...隤于祖乙，用美于祖丁，𠄎甘京易...
...the Minor Minister Qiang was an ally in the campaign. We captured Mei of Weifang ... 24 men ... 1570 victim heads, and 100 (or more) prisoner of war, [several horses], two chariots, 183 crossbows, 50 quivers, and ... arrows ... We made sacrifice of a white unicorn to Da Yi; and made sacrifice of Chef Yin and X ... to Zu Yi; and made sacrifice of Mei himself to Zu Ding. X said that Jing should be rewarded. ...
(*Heji* 36481 front = *Xucun Xia*¹⁰² 915, Fig. 53. Translated by Wang 2007a: 368, slightly emended)

This record is significant because the horse is attested to be used in warfare between the Shang and other states. It is possible that the horse was not employed by the Shang, however, but only used by its rivals. Also, because of the low number of captured chariots, it is reasonable to suggest that horses and chariots had not yet been

¹⁰¹ Appeared in *Heji* 6 and 6664 as enemy of the Shang.

¹⁰² This abbreviated book name is for the second volume of Hu (1955).

“a prominent part of the military, nor a deciding factor in military success” (Shaughnessy 1988: 220). Furthermore, there is no documentary evidence that the Shang ever used the horse and chariot in battle. Finally, as Magdalene von Dewall (1964: 175) has pointed out, horse-drawn chariots excavated from Yinxu suggest that “they served primarily as elevated and mobile command platforms” (Shaughnessy 1988: 198).

Thus it can be concluded that the use of the horse by the Shang army was very limited. Yet their enemies to the north and west often employed them in battle. One of the mightiest enemies of the Shang, the state of Zhou, rose to power with its abundant reserve of horses and chariots.

According to the extant data, four-horse chariots started to appear in the Western Zhou Dynasty (Yates 2003: 31). Yang Hong 楊泓 (1985: 88-90) summarized four characteristics of chariot battles during Zhou times: Firstly, the chariots were deployed as one single horizontal line, or two horizontal lines with the latter line of chariots deployed at the shoulder back of two chariots of the former line. Secondly, to avoid a head-on crash, the horses could not run straight into each other, instead the fighting only occurred at the time when two chariots ran to the opposite direction side by side. Thirdly, chariot battles relied mainly upon pole weapons such as *ge* 戈 (dagger-axe), *ji* 戟 (halberd) and *mao* 矛 (spear), since the reach of swords and sabers was too short for chariot combat. Fourthly, when the chariots were damaged and the horses were injured, short-range weapons were adopted, and chariot combat

turned to a hand-to-hand fight.

This is evidenced in the description of *Guo Shang* 國殤 “The fallen of the state” by the famous poet Qu Yuan 屈原 (339-278 BCE) of the Chu state:

We grasp our Wu shields; we put on rhinoceros hides;
The wheels of our chariots interlock; our short swords touch.
Our banners obscure the sun; our enemies rise thick as clouds.
Arrows twine in the air; warriors race headlong.
The ranks are thrown back; the lines are menaced.
A near wheel horse dies; an off wheel horse lies wounded.
Two wheels are buried deep; four horses are entangled in reins.
I raise the jade stick and beat the sounding drum.
Heaven's hour grows dark; the august spirits are enraged.
The dead lie on the field; they are abandoned in the wilderness.
They go their way without returning; depart without seeing
their homes.
The battlefields are afar; the journey home is long.
With long bows at their sides, Qin bows at their shoulders.
Their heads were slashed from their bodies, yet their hearts
were undaunted.
They were courageous and bold; they were filled with martial
ardor.
Unyielding to the end, we cannot condemn them.
Their bodies are dead; their spirits still powerful.
Their souls were resolute; they were heroes among the ghosts.

(Translated by Shen Yu-ting, in Qu 1947: 92)

This poem vividly reflects the battle scene of a typical Warring States chariot combat.

On the chariot, soldiers were armed with shields and armor. Both shields and armor were mainly made of hides. Small bronze parts were added to the shield in order to strengthen it (Yang 1985: 86). Horses were also covered with hide armors.¹⁰³

Only elite soldiers could ride in the chariots. In each chariot there were three men

¹⁰³ This is documented in the *Zuozhuan*, year 28 of Duke Xi: the Chu general Xuchen 胥臣 covered horses with tiger hides.

standing: the archer on the left, the halberdier on the right, and the driver in the middle. A flag and a drum were attached on the chariot of the commander. The flag indicated the position of the commander, and the drum is used for commanding the army. Other chariots advanced following the drum of the commander. In the military classic, *Taigong liutao: Wucheshi* 太公六韜 武車士 “Taigong’s Six Secret Teachings,”¹⁰⁴ criteria for selecting charioteers was recorded:

. . . to pick men under forty years of age, seven feet five inches or taller, whose running ability is such that they can pursue a galloping horse, race up to it, mount it, and ride it forward and back, left and right, up and down, all around. They should be able to quickly furl up the flags and pennants and have the strength to fully draw an eight-picul crossbow. They should practice shooting front and back, left and right, until thoroughly skilled.

(Translated by Sawyer 1993: 100)

Guo Shang depicts the entire battle process from long-range archery attack, to chariot combat, until the damage of chariots and the death of soldiers. The poem also narrates the performance of the three soldiers respectively: the halberdier at the right who wore armor and carried sharp weapons, the driver who drove under arrows and entangled the reins, and the commander who persisted on beating the drum until his last breath. This shows a fabulous vision of chariot battling.

Nevertheless, chariot combat has its inherent disadvantages. One apparent drawback is that the chariot is limited by the terrain. Only on the plains can the chariot exert its maximum power. Mountains, forests and marshes certainly defeat its

¹⁰⁴ For a comprehensive introduction to the *Taigong liutao*, see Sawyer (1993: 23-79).

combat efficiency. Another weakness is the weight of the chariot. According to Yang (1985: 91), three soldiers and their paraphernalia weigh more than 250 kilograms, and the square measure of the chariot exceeds 9 square meters. This seriously impaired the mobility of the chariot.

Subsequently, chariot warfare based on the elite class inevitably was replaced by infantry battles along with the rise of the new *shi* 士 class (for the reason see Lewis 1990: 60 and Yates 2003: 34). This new social class was recruited from the corps as well as the bureaucracies; the infantrymen were better armed during the Warring States period. At last, the elite in frontier China learned horse-riding from their neighboring alien nations, and then they began to adopt the new form of army – cavalry.

B). Horse riding and cavalry in pre-imperial China

Evidence for horseback riding first appeared in the Near East in late third millennium BCE (see Chapter 2). In China, however, the first evidence of horseback riding occurred very late. It is on a bronze buckle ring featuring two horse-riding figures hunting a hare (Fig. 44), unearthed at Nanshangen 南山根 in Ningcheng county, Inner Mongolia (CASIA 1975). This site is dated back to the Upper Xiajiadian Culture (ca. 1000-600 BCE), which is contemporaneous to the date of the Western Zhou Dynasty. Given that the horse was important to this culture as evidenced by the massive remains of horses and horse paraphernalia found at Upper

Xiajiadian sites,¹⁰⁵ it is conceivable to assume that horseback riding did become widespread in this area.

Compared with the archaeological evidence, the first documentary record for horseback riding was found in the *Shi jing* (Mao 237). In the poem Mian 緜 among the *Greater Odes* 大雅, the verse goes:

The ancient Duke Danfu
Came in the morning, galloping his horses,
Along the banks of the western rivers,
To the foot of mount Qi,
And there, he and the lady Jiang,
Came, and together looked out for a site on which to settle.
(Legge 1871: 438)

Ancient Duke Danfu, or Gugong Danfu 古公亶父 is the legendary founder of the Zhou clan. Thus this record in the poem may suggest that the ancestors of the ancient Zhou elite, who were often associated with the alien people dwelling in Northwest China, had learned horseback riding before they migrated to the Zhou plains in modern Western Shaanxi.

The origins of the Zhou clan still remain an enigma¹⁰⁶. All their possible provenances, however, are adjacent to the pastureland of the North(west)ern “barbarians.” Furthermore, it was the nomadic barbarians Hu 胡¹⁰⁷ that inspired the Chinese to introduce cavalry.

Long after the time of Gugong Danfu, the Chinese people though perhaps having

¹⁰⁵ For a detailed discussion of horse-related discoveries at these sites, see Shelach (1999: 162).

¹⁰⁶ See Shaughnessy (1999: 302-07) for a discussion regarding the origin of the Zhou people.

¹⁰⁷ As Nicola di Cosmo summarized (Di Cosmo 2002: 129), Hu was used as a generic name for “mounted nomads”.

learned horseback riding, did not use cavalry in the army. In Western Zhou and the Spring and Autumn period, conflicts were relatively small in size, and mounted nomads were separated from the Chinese states by other non-Zhou “barbarians” such as the Rong 戎 and the Di 狄. In the Warring States period, however, more and more large-scale combat occurred, and powerful states annexed adjacent “barbarian” clans so that they became open to the pasturelands of the horseback nomads to the north. Threats from the north made the northern states Yan, Zhao and Qin build up defensive walls in the frontier.

On the contrary, the nomads in the north developed prosperous trade with the Chinese states (Di Cosmo 2002:132-33). Horses were imported via this trade from Dai 代, a Di 狄 state that was annexed in 475 BCE by the state of Zhao (modern Northwest Hebei and Northeast Shanxi province). That Dai became a trading center of horses promoted the emergence of cavalry in the state of Zhao.

The famous story of King Wuling of Zhao’s adoption of cavalry (mounted archery) and Hu garments (307 BCE) was documented in the *Shi ji*,⁴³ 史記 趙世家 and the *Zhanguo ce Zhao ce er* 戰國策 趙策二. Nicola Di Cosmo (2002: 134-38) provided a detailed summary of the debate between the king and his conservative advisers. The decision of changing the garments was contrary to the old tradition of the Zhou states. Thus, many of the king’s advisors objected to the change. The king was depicted as having a “Machiavellian determination” facing the military problems of conflicts with surrounding states and tribes, and he eventually persuaded the

advisers with explanations of gains and losses.

The consequence of the Zhao's adoption of cavalry is evident: the next year, King Wuling of Zhao seized lands from the state of Zhongshan 中山 and the nomadic Hu. Zhao suddenly rose to a regional power in Northern China and became one of the strongest states in the Warring States period.¹⁰⁸

Nevertheless, massive infantry was still the main force of the states in Warring States China. The amount of infantry is one hundred times that of cavalry (Yang 1985: 95),¹⁰⁹ as is well recounted in the *Zhanguo ce* and the *Shi ji* (see a summary in Yang 1998: 310). As Lewis (1999: 60) has indicated, cavalry was a supplementary force in the Warring States military history.

Although an auxiliary part of the army, Warring States cavalry began to play a big role on the battlefield. Because of its rapidity, the cavalry force often took the responsibility of making a sudden charge, outflanking, assaulting provisions and pursuing. Sometimes the cavalry was deployed together with chariot troops in order to increase the mobility of the army (Yang 1985: 95). In the bamboo manuscript *Sun Bin's Art of War: Bazhen* 孫臏兵法·八陣, the usage of chariots and cavalry was depicted as below:

When your chariots and cavalry take part in the battle, divide them into three units, one on the right flank, one on the left and one in the rear. Where the battleground is level, use mostly chariots; where it is rough and dangerous, use mostly cavalry; where there are narrow passes, use mostly the archery unit.

¹⁰⁸ See Lewis (1999: 638-41) for a panoramic summary about the Zhao military reform and the aftermath of it.

¹⁰⁹ Yang Hong mentioned that the Zhao army had the largest proportion of cavalry, which was 8% of the infantry.

(Lin 2007: 159)

This text shows that cavalry and chariots were generally deployed to the flanks and rear of the main force in battle, the infantry. Such an array also is recounted in the *Taigong liutao: Zhanbu* 太公六韜 戰步, with discussions on the topographic advantages and disadvantages of cavalry and chariots (Sawyer 1993: 101-106).

It is remarkable that the cavalry had not yet been widely used in the warfare of the northern Chinese states against the nomadic Hu or the Xiongnu people. Building walls was at that time the most common and effective means of defense until the reign of Emperor Wudi the Great of the Former Han Dynasty (r. 141-87 BCE).

Chapter 5: The relationship between human beings and the horse in pre-imperial China

1, The tradition of managing horses and the practice of horse breeding in pre-imperial China

A). Horse breeding in the Shang Dynasty

The earliest evidence for horse breeding in early China is attested in the oracle bone inscriptions. Hayashi Minao (1960) first gathered and analyzed these Shang sources. Wang Yuxin (1980) comprehensively reviewed the evidence from the oracle bone inscriptions. Another important article is Shaughnessy (1988), especially his appendix to the main article with a list of oracle bone inscriptions containing the word Ma 馬 “horse.” Recent works such as Mair (2003), and Yuan and Flad (2002, 2003) further revealed new information from Shang literature.

According to Wang (1980: 101), the Shang oracles mention various colors of horses.¹¹⁰ Chinese characters for special names of horses are attested as well.¹¹¹ As argued by Wang Yuxin, these special terms for horses, might have been the beginning of the physiognomy of horses in China.

Yuan and Flad (2002, 2003) introduced the Oracle Bone evidence for horse breeding in early China to English readers. They also discussed the earliest possible horse castration, following the studies of Hayashi (1960) and Wang (1980). The

¹¹⁰ For a comprehensive study of the colors of Shang ritual animals, see Wang (2007a, 2007b).

¹¹¹ For a recent study of the special names of the horse, see Zhang (2005).

Oracle Bone graph 廌 (𠩺, jiù)¹¹² and the title Ma Xiaochen 馬小臣 “Minor Minister of the Horse” are attestations for horse breeding in the Shang royal court (Hayashi 1960: 35-36; Wang 1980: 103). Also, the term Xiao Duoma Qiang Chen 小多馬羌臣 “Minor Minister of the Qiang of many horses” might reflect the actual involvement of the official in horse breeding (Wang 2002b: 58; Zhou 2000: 105). Sometimes, the related official name is Duoma Ya 多馬亞 or Ma Ya 馬亞.¹¹³

Duoma Qiang 多馬羌 “the Qiang of many horses,” along with other Qiang tribes, is generally considered to be a tribe in the west of the Shang dominion.¹¹⁴ Possibly they were allies of the Shang (Mair 2003: 168-69). The term “Xiao Duoma Qiang Chen” is thus considered to be a title of an official in charge of the workers from the Duoma Qiang tribe. Duoma Qiang is famous for its Duoma 多馬, namely, “of many horses.” Therefore, it is conceivable to assume that the horse breeders from Duoma Qiang might have been employed in the stables of the Shang. Victor Mair (2003: 169-70) further associated the Qijia culture with the Qiang, and argued that the horses of the Shang came from this culture which learned horse breeding as well as bronze metallurgy from the West.

Likewise for the term 馬小臣 Ma Xiaochen “Minor Minister of the horse,” the term Xiaochen “Minor Minister” is attested widely in Shang and Western Zhou inscriptions (Zhou 2000: 103). Xiaochen served in both the royal court and the

¹¹² Attested in *Heji* 29415, 29416 and 30266 (Zhang 2005: 3). Both Wang Yuxin and Zhang Xinjun believed that this graph means the place where horses were kept, i.e. stable. See also Zhang (1998).

¹¹³ See, for example, *Heji* 564 front, 5708 front, 5709, 5710, 26899, 28011, 34309, among others.

¹¹⁴ For a historical survey of the Qiang people, see Wang (1997: 227-253) and Wang (2003: 145-177). For the study of the Qiangfang or Qiang tribe in the Shang Dynasty, see Niu (2006) who collected almost all sources from the oracle bone inscriptions.

peripheral tribes. They received orders for military expeditions and hunting, preparing chariots and horses, as well as divinations (Keightley 1972: 191). Ma Xiaochen is seemingly a title in charge of horse breeding.

Furthermore, it is recorded in the oracle bone inscriptions that horses were used as victims in sacrificial activities. As has been discussed in Chapter 4, this is not only attested in the Shang royal documents but also in the non-king divination records. This may suggest that the use of the horse was not confined to the Shang court. As for the origin of the horses, Hayashi (1960: 36-38) concluded that tributes from neighboring feudal states, especially northern arid regions, were the main source of horses in the Shang royal court. It is worth mentioning that horses and chariots were also used in royal hunting of the Shang (Wang 1980: 106; Shaughnessy 1988: 216-17, see also Wang 2007a: 350-51):

癸巳卜，設，貞旬亡囧。王固曰：乃茲亦出彘，若僞。甲午，
王往逐兕，小臣由車馬礮奪王車，子央亦墜。

Cracking made on *guisi* (day 30), Ke, divining: “this ten-day week there will be no misfortune” The king prognosticated and said: “there will be misfortune as in the omen.” On the following *Jiawu* day, the king went to hunt the rhinoceros, while the Minor Minister drove the chariot. A horse fell and blocked the chariot of the king, and Zi Yang also fell from the chariot. (*Heji* 10405 front, Fig. 54)

Satirically, this inscription, the only attestation that the Shang use horse-drawn chariots in hunting, documents awkward driving leading to an accident. It is possible that the driver, the Minor Minister or Xiaochen 小臣 here refers to the Maxiaochen

mentioned above. Shaughnessy (1988: 217) regarded it as “evidence of Shang unfamiliarity with chariots.”

To summarize, we can see that the Shang court developed a preliminary horse breeding and managing mechanism. The court established a royal stable, and the Minor Minister (sometimes Minor Minister of the Horse, often with alien background) was the official in charge of horse breeding and chariot driving. Techniques such as horse physiognomy and horse castration began to appear in the Shang Dynasty. Horses were very important in sacrifice, hunting, and, possibly, in warfare. It is remarkable that the princes also offered horses as sacrifice. As for the sources of the horse and the stabling techniques, the Shang quite probably was affected by the Duoma Qiang or other tribes from the north and northwest of the Shang realm (see Niu 2006 for a detailed literary critique).

B). Horse breeding in the Western Zhou Dynasty

From the passages above we have shed some light on horse breeding of the Shang Dynasty from a survey about the study of oracle bone inscriptions. For the Western Zhou Dynasty, however, we mainly rely on the bronze inscriptions.

The texts of the bronze inscriptions are basically of the same pattern starting with the reign of King Mu 周穆王 (r. 965-918 BCE). The beginning is the time of the event it records, followed by the command of the king and/or the superior official to the maker of the vessel. Then the accomplishments of the one who ordered the bronze

vessel to be cast are recorded. The last part is a perfunctory ritual record about how the caster made the vessel, and a wish that the offspring will preserve the vessel forever. To date, there are few research articles using the bronze inscriptions to discuss horse breeding in the Western Zhou Dynasty. The first is Hayashi (1960); Shaughnessy (1988) provided information from the perspective of chariotry; and recently Mair (2003) and Xin (2003) conducted penetrating research regarding horse breeding as reflected in the bronze inscriptions.

The most noticeable bronze ware that is related to horse breeding is *Li Ju zun* 鬲駒尊,¹¹⁵ the earliest hippomorphic vessel in Chinese history. Excavated in 1955 at Donglicun 東李村, Meixian, Shaanxi Province, this mid-Western Zhou Dynasty vessel bears two inscriptions: a 94-character-long inscription on the chest of the bronze horse and a 11-character-long one on the lid at the back of the horse. Unearthed in the same pit, was a set of four bronze square vessels, *Li fangyi* 鬲方彝,¹¹⁶ each with an inscription of 106 characters. Following is my tentative translation of part of the three inscriptions:

Li Ju zun inscription (*Jicheng* 6011, Fig. 55):

隹(惟)王十又二月，辰才(在)甲申，王初執駒于啟。王

乎(呼)師虜頡鬲。王親旨鬲，駒易(賜)兩。...

In the twelfth month, on *jiashen* (day 21), the king at first captured the foals on the bank. The king called Master Ju

¹¹⁵ This vessel is preserved in National Museum of China, and the lid is preserved in Shaanxi History Museum.

¹¹⁶ Two of the vessels are preserved in National Museum of China, and the other two in Shaanxi History Museum.

to summon Li. The king visited Li in person and bestowed two foals on him. ...

Li Ju zun lid inscription (*Jicheng* 6012, Fig. 56):

王拘駒豆，易(賜)盞駒 𠄎 雷駱子

The king arrested foals at Dou, and bestowed the foals of black bristle on Li.

Li fangyi inscription (*Jicheng* 9899, 9900, Fig. 57):

佳(惟)八月初吉，王各于周廟。穆公又盞立于中廷，北鄉。王册令尹。易(賜)盞赤市、幽亢、攸(鑿)勒，曰。用鬲(司)六自(師)。王行叁有鬲(司)。鬲(司)土、鬲(司)馬、鬲(司)工。王令盞曰：鬲(司)六自(師)眾(暨)八自(師)鬲。 ...

On the first day of the eighth month, the king arrived at the Temple of the Zhou. The Duke Mu assisted Li, and Li stood in the middle of the court, toward the north. The king called the magistrate for conferring titles, granted Li red knee hide, dark belt and horse gear, and said, “Use them to take charge of the superior horses for the Six Divisions and the king’s troops, as well as the horses for the three officials: Situ, Sima and Sikong.” The king ordered Li: “Take charge of the horses of the Six Divisions and the Eight Divisions!”¹¹⁷ ...

Several points can be examined here. The first two inscriptions recorded that the king “captured the foals on the bank” and “arrested the foals at Dou (a place name).” The king’s capturing the foals is actually a ritual called *zhiju* 執駒, as is recorded in

¹¹⁷ The Six Divisions and the Eight Divisions are deployed troops around the capitals. The Six Divisions were deployed at Feng 豐 and Hao 鎬, the Zongzhou 宗周 capital in today’s Shaanxi; the Eight Divisions were deployed at Luoyang and Yin. See Yu (1964) for detailed information.

the *Zhou li* (see below). Two-year-old foals were separated from mares and began to be trained to pull chariots during this ritual. This ritual was so important to the Zhou court that the king attended in person.

The place where the *zhiju* ritual was observed, the “bank,” draws our attention as well. The actual bronze script character, 𡗗, is considered to be the primitive form of the character 岸 “bank.” Xin (2003: 64) argued that the excavation site Donglicun was on the north bank of the Wei River, suitable for horse breeding, and further suggested that Donglicun would have been the base of horse breeding of Western Zhou court. This opinion is acceptable, given that the ritual should be held near the royal stable.

The fact that the king bestowed the captured foals on Li shows that Li was an official in charge of the royal stables. In the *Li Ju zun* inscription, an official Master Ju was called to summon Li, indicating that Li was probably not the highest official who could directly meet the king in person at the ritual. Here we lack evidence about the actual position of Li, but it is quite possible that his position was the Xiaoren 校人 or “stable officer” mentioned in the *Zhou li*, the highest official of the stable subordinate to the Sima or the military officer.¹¹⁸

According to the inscription on the *Li fangyi*, the king summoned Li in person and granted him knee hide, belt and bar bit which symbolized the bestowal of power.

¹¹⁸ Xin (2003: 40) held that Li’s position was Yuren 庾人 “wrangler,” which I think is too low. The king summoned him in person and ordered him to provide horses for the Zhou troops. This indicates that Li was a high official in the stable rank.

The king then ordered him to take charge of the horses for the troops. Again, the text suggests that Li was a high official in charge of the royal stable, probably the Xiaoren. Here, Li was summoned directly to the king and received the king's order, indicating that the king valued horse breeding.

From the above points, we can summarize that in the Western Zhou Dynasty horse breeding was very important to the royal court as well as to the deployed army. It is quite possible that a special institution, as led by Li in the document above, had been established for providing warhorses and horses for the king's use. Also, we are almost clear about the location of the royal stables of the Zhou court.¹¹⁹

Many other Western Zhou bronze inscriptions mention the horse. For example, the *Maogong ding* mentioned in Chapter 4 shows that the Zhou royal horses, as part of the chariot paraphernalia, can be bestowed directly by the king to his subjects. According to the second longest bronze inscription of the Western Zhou era (also in the reign of King Xuan), the *Duoyou ding* 多友鼎 inscription (*Jicheng* 2835),¹²⁰ both the Zhou and its rival Xianyun 玁狁 possessed hundreds of chariots and deployed them in battle (Shaughnessy 1988: 226, Mair 2003: 166). It is generally believed that by this time chariot battles already became widespread in China.¹²¹

To sum up, the use of horse and horse breeding in the Western Zhou Dynasty, as

¹¹⁹ A textual reference also reflects the location. For instance, in the *Shi ji* Ch. 5, the ancestor of the Qin, Feizi 非子, herding horses for the Zhou between the Qian and the Wei Rivers, approximately modern Meixian.

¹²⁰ English translations can be found in both Shaughnessy (1988: 225–26) and Mair (2003: 165). For a study of the historical context of this inscription, see Shaughnessy (1984–85).

¹²¹ An earlier inscription on the *Xiaoyu ding* 小盂鼎 (*Jicheng* 2839) records a Zhou victory over a hostile polity identified as the Guifang 鬼方, capturing horses and chariots. For studies on this inscription, see Hayashi (1960: 38–40) and Shaughnessy (1988: 224–25).

attested in the bronze inscriptions, was highly developed. Stables were built for training horses that pulled chariots of all key troops as well as the king. Certain personnel were employed for the royal stable. Horses were a common gift given by the king to his subjects. Massed chariot battles with extensive use of horses were recorded in the bronze inscriptions.

Besides the bronze inscriptions, later documents also recorded significant information about horse breeding in the Western Zhou Dynasty. A special law called *Chengma fa* 乘馬法 (the Law of Chariots and Horses) or *Sima fa* 司馬法 (the Law on Managing Horses) is a good example.¹²² According to this law, peasants were ordered to raise horses, and the horses were expropriated by the state. There are two versions of this law:

《周禮 小司徒》鄭玄注：“井十為通，通為匹馬，三十家，士一人，徒二人；通十為成，成百井，三百家，革車一乘。”

Commented by Zheng Xuan on the *Zhou li*, “Xiao Situ”:

Ten *jing* makes a *tong*. One horse is provided by the *tong*. Thirty households constitute a *tong*, which provides one officer and two infantry soldiers. Ten *tong* makes a *cheng*. One *cheng* is one hundred *jing*, comprising three hundred households, which provides one war chariot.

《漢書 刑法志》：“四井為邑，四邑為丘，丘，十六井也。有戎馬一匹，牛三頭。四丘為甸。甸，六十四井也。有戎馬四匹，兵車一乘，牛十二頭，甲士三人，步卒七十二人，干戈備具，是謂乘馬之法。”

¹²² It is possible that the name *Sima fa* is somehow related to the military official *Sima* 司馬, therefore this law could originally be for military purpose.

Han Shu, Chapter 23, *Treatise on Punishment and Law*:

Four *jing* makes one *yi*; four *yi* makes one *qiu*. One *qiu* is sixteen *jing*. One *qiu* provides one warhorse and three oxen. Four *qiu* make one *dian*. One *dian* is sixty-four *jing*. It provides four warhorses, one chariot, twelve oxen, three armored soldiers on the chariot, and seventy-two infantry soldiers. All weapons of war are ready. This is said to be the law of chariots and horses.

The implementation of the “Law of Chariots and Horses” is a significant event in that it documents the beginning of horse breeding within the context of ancient Chinese rural society. The rulers also sought to establish their military force through this law (Li 1989; Wu 2003). It is this law that consolidated China’s military force in the Qin-Han Empire. From it we can see the great advancement in horse breeding in the Western Zhou Dynasty compared with the previous kingdom of Shang. Whereas the Shang royal court did not actually breed horses for military service, even the Western Zhou common people had a responsibility to provide horses for their local elite and the realm.

C). Horse breeding as reflected in the *Zhou li*

Besides the inscriptional evidence, scholars need to study a large corpus of literature, the *Zhou li* for the actual situation of royal horse breeding in the Zhou Dynasty. *Juan* 33 of the *Zhou li* (or the *Rites*) is a thorough regulation about the institution of horse breeding.

Here I translate it with connotations.¹²³

Zhou li, *juan 33*:

Xiaoren 校人 “stable officer”¹²⁴ is in charge of the king's horse policy.¹²⁵ He distinguishes the six categories of horses. One is Zhongma 種馬 “studhorses;” one is Rongma 戎馬 “warhorses;” one is Qima 齊馬 “uniform horses”;¹²⁶ one is Daoma 道馬 “road horses;” one is Tianma 田馬 “hunting horses;” one is Numa 駑馬 “inferior horses”.¹²⁷ He distributes all superior horses, breeds them and drives them. One Yushi 圉師 “chief groom”¹²⁸ and four Yuren 圉人 “groom”¹²⁹ are employed for every one Sheng 乘 (four superior horses); three Sheng make one Zao 皂, and one Quma 趣馬 “horse supervisor” is employed for every one Zao; three Zao make one Xi 繫, and one Yufu 馭夫 “ordinary driver” is employed for every one Xi; six Xi make one Jiu 廐, and one Pufu 僕夫 “superior driver” is employed for every one Jiu; six Jiu make one Xiao, and there is a Left Xiao and a Right Xiao. The number of inferior horses is three times one category of superior horses. One Yuren is employed for one pair (li 麗) of inferior horses; one Yushi is employed for six pair of inferior horses; one Quma is employed for the inferior horses bred by six Yushi; one Yufu is employed for the inferior horses bred by six Quma. The Son of Heaven has twelve stables and six categories of horses; feudal states have six stables and four categories of horses; officials have four stables and

¹²³ There is a French translation of the *Zhou li* by Edouard Biot (1851), but he only excerpted some of the key terms, not the whole chapter.

¹²⁴ Biot translated it as “Officiers des troupes de chevaux.” Yates (2003: 8) translated it as “Commander of the Stables.”

¹²⁵ “Horse policy” for 馬政, the term used for the official management of horse breeding in China. Xiaoren is only in charge of the King's horse policy, as for other part of horse policy please refer to Chapter 4.

¹²⁶ This kind of horses possess uniform hides and thus were mainly used in rituals.

¹²⁷ The five superior horses are used for pulling five different chariots of the king and driven by five categories of Pufu 僕夫. Zhongma pulls Yulu 玉路 “jade chariot” and is driven by Dayu 大馭 “grand driver;” Rongma pulls Ronglu 革路 “leather chariot” and is driven by Rongpu 戎僕 “military driver;” Qima pulls Jinlu 金路 “golden chariot” and is driven by Qipu 齊僕 “uniform driver;” Daoma pulls Xianglu 象路 “ivory chariot” and is driven by Daopu 道僕 “road driver;” Tianma pulls Tianlu 田路 “hunting chariot” and is driven by Tianpu 田僕 “hunting driver.” All inferior horses are used for pulling other following chariots, and are driven by Yufu 馭夫 “ordinary drivers.”

¹²⁸ Following Biot's translation “Chef palefrenier.”

¹²⁹ Following Biot's translation “Palefrenier.”

two categories of horses.¹³⁰ As for all horses, stallions must be one fourth.

Xiaoren makes sacrifices to Mazu 馬祖 “Horse Ancestor” and perform the ritual of capturing the foals in the spring;¹³¹ makes sacrifices to Xianmu 先牧 “First Herdsman,” distributes horses and operates castration in the summer;¹³² makes sacrifices to Mashe 馬社 “Horse God” and trains drivers in the autumn;¹³³ and makes sacrifices to Mabu 馬步 “Horse Walk Demon,” presents trained horses to the king, and selects trained drivers in the winter.¹³⁴ At the time of grand sacrifice, grand audience, and grand assembly, he prepares horses of the same color and distributes them, and decorates those horses that are used as gifts, and holding whips follows with them. When the king meets guests, Xiaoren is in charge of receiving horses as gifts. At the time of a grand funeral, he decorates the horses that drive chariots, and at the time of the burial, he buries the horses and chariots. At hunting, he leads the chariots that drive quarries. When the king will make sacrifices to the mountains and rivers of the four seas, Xiaoren decorates the yellow foal for sacrifice. For all envoys of the kingdom, he provides them with horses as gifts. At the time of military affairs, he prepares horses of the same vigor and dispatches them. He is also in charge of adjusting the salary of lower officials for horse driving and horse breeding.

Quma is in charge of helping Xiaoren and breeding superior horses, takes care of the food and drink of them, and selects them as six levels. He is also in charge of the sequence that which horses are used for driving, which horses are spared. He distinguishes the location and disposal of the horses in the four seasons, so as to comply with the command of Yufu.

¹³⁰ That is, feudal states are not allowed to breed Zhongma and Rongma, whereas officials only breed Tianma and Numa.

¹³¹ The sacrifice to the Horse Ancestor might suggest an ancient cult to the predecessor of the horse of the age when wild horses were hunted by the Neolithic hunters. Associated with the ritual of “capture the foals,” this sacrifice further represented the initial contact of the human being with wild horses.

¹³² Undoubtedly, the First Herdsman here refers to the initial efforts of domestication. Thus, the sacrifice to him is associated with castration of horses, a practice efficiently adopted to make the horses calm down in the hot season when male horses easily could be aroused to be irritable.

¹³³ For the name of Mashe 馬社, it seems to have been associated with the land, and it generally is believed that at this time the horses were muscular and robust. So the training of the horses were arranged in Autumn.

¹³⁴ It is hard to locate the meaning of Ma Bu, but we may conclude that the sacrifice is associated with the annual commencement ceremonies of the chariot drivers.

Wuma 巫馬 “horse doctors”¹³⁵ are in charge of horses with diseases. They examine and treat them. They also use medicine to help treat the diseases of horses. Wuma receive money from Xiaoren, and when a horse dies, they dispatch a merchant to sell the dead horse, and hand in the money to Xiaoren.

Mushi 牧師 “chief of pasturelands” is in charge of pastures. All pasturelands have strict prohibitions to enter, and Mushi distributes them to Yuren. In the first month of spring, Mushi burns old pastures; in the second month of spring, he made horses copulate. He is also in charge of the policies and decrees of the pastureland. When there is hunting, he helps burning weeds.

Yuren 庾人 “wrangler” is in charge of the policy and training of the twelve stables. He makes the horses strong but does not permit the stallions to overwork, trains the three-year-old foals, and castrates two-year-old foals. He also makes sacrifices to Horse Ancestor and Ancestral Wrangler of the stable, as well as captures the foals, trains the ears of the horses with clamorous sound, and teaches Yuren 圉人 horse breeding. Yuren 庾人 is in charge of deciding the reserve for Yushi and Yuren 圉人.

A horse taller than eight *chi* is called Long 龍; a horse taller than seven *chi* is called Lai 駮; a horse taller than six *chi* is called Ma 馬.

Yushi is in charge of teaching Yuren horse breeding. In the spring he removes the straw mat from the stable, makes sacrifice to the stable, and begins pasturing. In the summer, he builds the stable. In the winter, he presents horses. In archery, Yushi provides blocks as targets; while in house building, he trims the thatches.

Yuren 圉人 is in charge of horse breeding. He obeys the command of Yushi. At the time of meeting with guests or during funeral ceremonies, Yuren lead the horses and display. For horses displayed as mortuary accessories,¹³⁶ Yuren also lead them.

¹³⁵ For Wu 巫 in Western Zhou, see Mair (1990) who identified it to be Old Persian *Maguš*; the symbol appeared at the forehead of the “magician” figurines discovered during an excavation of a Western Zhou palace in Fufeng, Shaanxi. “巫” is usually identified as Shamans reaching altered states of consciousness to interact with the spiritual world (Hopp 1987: 76).

¹³⁶ The original term Mingqi 明器 “mortuary accessories” refers to small vessels buried in funeral rituals. Most Mingqi were cast as small-scale replicas of vessels used in the everyday life of the Western Zhou middle class people. For a detailed explanation of the usage of Mingqi, see Falkenhausen (2006: 302-304).

Zhou li provides a complex organization. Supposedly this is the ideal form of horse breeding institution in the Western Zhou court. From this we can calculate the ideal number of horses:

For every Sheng: 4 superior horses;

Every Zao: $4 \times 3 = 12$ horses;

Every Xi: $12 \times 3 = 36$ horses;

Every Jiu: $36 \times 6 = 216$ horses;

Every Xiao: $216 \times 6 = 1296$ superior horses.

According to Zheng Xuan 鄭玄, the commentator of the *Zhou li*, however, the six categories of horses each have one Jiu, and there is a Left Xiao and a Right Xiao.

There are ($216 \times 2 =$) 432 horses in every category of superior horses; for five

categories there are ($432 \times 5 =$) 2160 superior horses in total. The number of

inferior horses is three times the category of superior horses, that is ($432 \times 3 =$)

1296 inferior horses. Thus the total number of royal horses is ($2160 + 1296 =$) 3456

horses. Note that this is only the number of royal horses, not all horses for battles.

Horses in the battles were provided according to the “Law of Chariots and Horses” by common people.

D). Horse breeding of the Qin State in the Warring States period

Not many sources have so far been discovered about horse breeding in the Eastern Zhou Dynasty, except the *Shuihudi* Qin tomb bamboo documents 睡虎地秦

墓竹簡, dating back to the late Warring States period (c. 3 c. BCE).¹³⁷ These documents include a detailed law on horse and cattle breeding, *Jiuyuan Lü* 厩苑律 “the Code on Stables and Gardens,” as well as other legal documents that are related to horse breeding.

There is a historical reason why the Qin state valued horse breeding. The Qin state was established at the time of King Xiao of Zhou 周孝王 (r. ca. 891-886 BCE), according to the *Shi ji* (5, 177-78). One of the elite ancestors of Qin, Feizi 非子, served King Xiao of Zhou as a royal horse breeder and was rewarded a fief at the Qin territory for his contribution. The Qin territory was at the westernmost area of the Zhou realm and adjacent to the pastoral Rong 戎 (non-Zhou) people. It is noteworthy that there is a concrete relationship between the development of the Qin state and its horse breeding industry.

The Qin state established a complex organization of horse breeding from the royal court down to the rural area, as attested in the legal documents:

其大廄、中廄、宮廄馬牛毆（也），以其筋、革、角及其賈（價）錢效，其人詣其官。（《厩苑律》）

As for the horses and oxen in the Grand Stable, the Middle Stable and the Palace Stable, they are examined by their tendon, hide, horn and price, and their breeders should visit the respective government.

(*The Code on Stables and Gardens*, Fig. 58)

Here three stables are mentioned. Zhu (2010: 69) suggested that all of them are

¹³⁷ All the documents are published in Shuihudi (1978). The photos attached to this dissertation are downloaded from the CHANT database at Chinese University of Hong Kong, accessed Feb. 10, 2013.

institutions for animal husbandry administered directly by the Qin court. According to Huang (2009: 277-291), the Grand Stable and the Palace Stable also were seen in the states of Chu 楚 and Zeng 曾. In the Han Dynasty, the Grand Stable was one of the six stables of the Son of Heaven, and the Middle Stable prepared chariots and horses for the empress.¹³⁸ From this we can infer that the Qin have already distinguished three independent institutions for the breeding of horses and oxen.

Not only stables are involved in horse breeding. Farming officials also are appointed for providing grains for horse and oxen feed. Here is an example:

乘馬服牛稟。過二月弗稟、弗致者，皆止，勿稟、
致。稟大田而毋恒籍者，以其致到日稟之，毋深致。
(《田律》)

Grant grain to working horses and cattle. For those who are not granted or delivered two months later, all stop. Do not grant or deliver. As for those that will be granted by the Grand Farm Official but without fixed accounts, it is granted at the delivered date. Do not deliver late.

(*The Code on Farming*, Fig. 59)

The Grand Farm Official, 大田 in this law, appeared in the *Han Fei Zi* and the *Lüshi Chunqiu* (Chen 2000: 745, Chen 2002: 1097). This official is in charge of farming but here also provides grain to stockbreeders.

Besides, this law explicitly indicates that the grain for the Qin state-owned oxen and horses was distributed by the state: and if the breeder missed the date, the grain would not be distributed to them. From this we can see the importance of horse and cattle breeding in the Qin state. The state directly managed the supply of grain for

¹³⁸ See Yan Shigu's note to the *Han Shu*, Chapters 19 and 33.

horses and cattle, and enacted decrees for the exact date of distributing the grain.

Another document also shows a strict and meticulous rule:

馬牛誤職（識）耳，及物之不能相易者，貲官畜夫一盾。（《效律》）

If the wrong marks were affixed on the ears of the horses or oxen,¹³⁹ or animals that cannot be exchanged, the official *Guansefu*¹⁴⁰ will be fined a shield.¹⁴¹

(*The Code on the Examination of Properties*, Fig. 60)

Guansefu can be seen as an official at the Xian 縣 level, the second administrative level below the state level. In fact, the Qin horse management at the Xian level also had been very advanced:

縣葆禁苑、公馬牛苑，興徒以斬（塹）垣離（籬）散及補繕之，輒以效苑吏，苑吏循之。（《徭律》）

The forbidden garden and public horses and oxen gardens are kept at the Xian level. Recruit slaves to build walls and fence, as well as repair and maintain them, then present to the garden officials, and the garden officials inspect them.

(*The Code on Forced Labor*, Fig. 61)

Here the garden officials include *Yuansefu* 苑畜夫, *Zaosefu* 阜畜夫 and *Yuanji* 苑計 “Garden accountant” (Zhang 2004: 6). The horses and oxen gardens mentioned above were administered by the government at the Xian level (Zhu 2010: 69).

Whether there was a horse breeding institution at the lower Xiang 鄉 (or Li 里)

¹³⁹ All horses and oxen of the state should be marked on the ears to avoid confusion with non-state-owned animals.

¹⁴⁰ The name of the official *Guansefu* 官畜夫 or *Lisefu* 吏畜夫 is a general appellation of one of the *Sefu* 畜夫 official system as opposed to *Rensefu* 人畜夫, according to 《管子 君臣上》 *Guanzi: Junchen I*. Here, however, it is a term of an official in the Qin bureaucratic system.

¹⁴¹ In the late Warring States war economy, the Qin accounting system used weapons such as shield and armor for quoting prices and settling accounts.

level is not attested in the extant Qin codes, but there is a concrete example about oxen breeding in the *Code on Stables and Gardens* (Zhu 2010: 69-70). The Xian government was in charge of the comparison of the quality of oxen gathered from the subordinate Xiang administrations.

Furthermore, Zhu Honglin (2010: 70) even concluded that it is possible to find evidence of the quality check of the Xiang government for the horses and oxen of households. If we accept his opinion, it is quite likely that the Qin state control of the horse breeding industry far exceeds the ideal depiction of the *Zhou li*, as we will mention below.

There are various references to the quality check and comparison of horses as described in the Qin legal documents. For example, missing a horse or ox is equally as unfortunate as missing a person in the household (Zhu 2010: 73):

人戶、馬牛一以上為大誤。（《效律》）

As for household, horse or ox, more than one is a big error.

(*The Code on the Examination of Properties*, Fig. 62)

可（何）如為大誤？人戶、馬牛及者（諸）貨材（財）直（值）過六百六十錢為大誤，其它為小。（《法律答問》）

What is a big error? For household, horse or ox and any products valued more than 660 *qian* is a big error, others are small errors.

(*Questions and Answers on the Laws*, Fig. 63)

Quality check is not only applied in horse breeding but also in military and civil use of the horse:

驀馬五尺八寸以上，不勝任，奔摯（繫）不如令，縣司馬貲二甲，令、丞各一甲。先賦驀馬，馬備，乃粼從軍者，到軍課之，馬殿，令、丞二甲；司馬貲二甲，法（廢）。（《秦律雜抄》）

The army horse should be taller than five *chi* and eight *cun*.¹⁴² If it is not qualified, or cannot gallop or stop according to the order, *Xiansima* will be fined two armors, *Xianling* and *Xiancheng* one armor respectively.¹⁴³ Army horses are first levied. When the horses are equipped, those enlisted are selected and checked at the army. If the enlisted horses are at the rear, *Xianling* and *Xiancheng* will be fined two armors, *Xiansima* will be fined two armors and discharged.

(*Miscellaneous Copies of the Qin Laws*, Fig. 64)

膚吏乘馬篤、犖（鬻），及不會膚期，貲各一盾。馬勞課殿，貲廩嗇夫一甲，令、丞、佐、史各一盾。馬勞課殿，貲阜嗇夫一盾。（《秦律雜抄》）

In a comparison, if an official's horse is slow, lean or does not appear in the comparison, the official will be fined a shield. If the horse is at the rear in the quality check, *Jiusefu* will be fined one armor, and *Ling*, *Cheng*, *Zuo* and *Shi*¹⁴⁴ will be fined one shield respectively. If the horse is at the rear in the quality check, *Zaosefu* will be fined one shield.

(*Miscellaneous Copies of the Qin Laws*, Fig. 65)

There are also other laws to protect horses or compensate losses from horses' death, injury and disease:

將牧公馬牛，馬[牛]死者，亟謁死所縣，縣亟診而入

¹⁴² An interesting parallel description is the insertion about the height of horses in the *Zhou li*, Vol. 33 (see above). It is notable that the horses in the *Zhou li* should be above six *chi*, and the Qin criteria for selecting army horses is five *chi* and eight *cun*. The two standards are somewhat different.

¹⁴³ *Xiansima* 縣司馬 is the official in charge of the military affairs and especially responsible for the selection of army horses of a *Xian*. *Xianling* 縣令 is the chief magistrate of a *Xian*, and *Xiancheng* 縣丞 is the assistant of *Xianling* in charge of punishment. Both of them also were responsible for the selection of army horses.

¹⁴⁴ *Cheng* 丞, *Zuo* 佐 and *Shi* 史 are assistants of *Xianling*, here referred to as *Ling* 令. *Zuo* is general assistant, while *Shi* is secretary.

之。其入之其弗亟而令敗者，令以其未敗直（值）賞（償）之。（《厩苑律》）

When a herding state-owned horse [or ox] dies, the herder should urgently report to the Xian authorities, and the Xian authorities should urgently examine the situation and let the horse or ox in. If the horse [or ox] is brought about not soon enough, and its flesh becomes putrid, the herder should compensate all its value before it becomes putrid.

(*The Code on Stables and Gardens*, Fig. 58)

The above paragraph shows a scenario in which the herder should compensate the entire value of a horse because of a late report to the local authorities. In this case, the corpse of a horse had been putrid. Another case below, also mentioned in the *Code on Stables and Gardens*, indicates that the herder should just compensate part of the value, given that the flesh had not been putrid (Zhu 2010: 74):

其乘服公馬牛亡馬者而死縣 縣診而雜買（賣）其肉，
即入其筋、革、角，及索（索）入其賈（價）錢。
（《厩苑律》）

If the state-owned horse and ox died in the Xian, the Xian authorities should examine and sell its meat, and accept its tendon, hide and horn, as well as ask for paying its price.

(*The Code on Stables and Gardens*, Fig. 58)

If a chariot-driving horse is injured, the one who causes the injury will be fined:

傷乘輿馬，決（決）革一寸，貲一盾；二寸，貲二盾；
過二寸，貲一甲。（《秦律雜抄》）

As for when a chariot-driving horse is injured, if the hide was hurt one *cun*, he will be fined one shield; two shields for two *cun* and one armor for more than two *cun*.

(*Miscellaneous Copies of the Qin Laws*, Fig. 65)

The Qin state also implemented an epidemic control to imported horses (Zhou 2000: 1539):

“者（諸）侯客來者，以火炎其衡厄（軛）。”炎之可（何）？當者（諸）侯不治騷馬，騷馬蟲皆麗衡厄（軛）鞅鞮 轅鞬，是以炎之。（《法律答問》）

“When guests from other states come, we use the fire to heat the crossbars and yokes of their chariots.” Why heat? Since other states do not cure and brush horses, all parasites stick to the crossbars, yokes, martingales, harnesses and shafts. Therefore we heat them.

(*Questions and Answers on the Laws*, Fig. 66)

In sum, from the above examples of legal documents we can see the actual institution and mechanism of horse breeding in the Qin state. An interesting perspective is to compare the Qin mechanism with that of the *Zhou li*.

As for the similarities between the information in the *Zhou li* and the Qin mechanisms, first of all, the *Zhou li* postulates a centralized, tiered system of horse breeding, which is also attested in the Qin legal documents. By mentioning all the administrative titles, the *Zhou li* defines the responsibilities of officials involved in horse breeding from the stable officer on the top to the grooms at the bottom. Besides, each level of stable units is specified with the number of the royal horses explicitly calculated.

Although the extant Qin legal documents are scattered and less organized than the *Zhou li*, they provide crucial information about the mechanism of horse breeding in the Warring States period. From the records, we also can see a hierarchy from the

Grand Stable to gardens at the Xian level, down to the *Sefu* administration at the Xiang level. Admittedly, we cannot reconstruct the entire administrative hierarchy, or estimate the number of the state-owned horses, but the state horse breeding industry is similar to what the *Zhou li* depicts.

A second similarity between the *Zhou li* and the Qin legal documents is that both of them record all administrative measures of horse breeding. In the *Zhou li*, the function of every administrative title is introduced after the entry; in the Qin legal documents, special laws concerning the management of gardens, grains, feeding, etc., are detailed. The breeding of young horses, horse selection criteria, the selection of pasturelands, medical treatment, as well as the measure after a horse's death, are recorded in both texts.

Now let us focus on the difference between the *Zhou li* and Qin legal documents. The first and foremost difference is that the *Zhou li* is a utopian description, whereas the Qin legal documents show the content of horse breeding in real life. Although tradition ascribed the text of the *Zhou li* to the Duke of Zhou or to its editor Liu Xin 劉歆, modern scholars have agreed that the work is anonymous idealistic literature (Nylan 2001). In contrast, the excavated Qin legal documents reflect the actual mechanism of social life. Therefore, the two texts are fundamentally different.

The second difference is that the *Zhou li* involves horse breeding only in the royal stables and pastureland, while the Qin legal documents mention the breeding of state-owned horses in the royal, Xian and Xiang levels.

There are two reasons for the difference. The former is the difference of government systems. The idealistic Zhou political ideology was *fengjian* 封建 or feudalism,¹⁴⁵ a decentralized system of government, whereas the political system of the Qin state already had been centralized by the middle of the 4th century BCE (after Shang Yang's 商鞅 reform). The new type of centralized government possessed horses in the Xian and the Xiang level as well as royal stables as part of the wartime economy. The latter reason is that the Qin documents are mainly laws enacted in all levels of social life. In contrast, the *Zhou li* is a ritual text solely on the rites of central government offices. The scope of the horse breeding industry is therefore quite different from each other.

The third difference in horse breeding between the *Zhou li* and the Qin legal documents is the focal point they emphasize as rites or laws. The *Zhou li* is, by name, a rite that is an organization of prescribed formal social norms in the idealized Zhou government. What we see from the Qin legal documents on horse breeding, however, is an amalgam of laws in a complex bureaucratic system. The *Zhou li* underscores the responsibility of every officer and groom, whereas the Qin documents legalize the functions of officials and institutions often with punishments.

The last difference I would like to mention here are the contents of the two texts. Besides breeding, the *Zhou li* focuses on rituals, while the Qin documents focus on more practical uses, e.g., warfare and transportation. In the *Zhou li*, horse sacrifices

¹⁴⁵ For the nature of the Zhou *fengjian* system and a comparison of it with feudalism in Medieval Europe, see Ma (1997).

are mentioned many times among the responsibilities of the Xiaoren and other horse breeders. Other breeding technologies, such as castration 攻特 and “capture the foals” 執駒, are viewed as ritual practice. On the contrary, in the Qin legal documents the text focuses on the breeding of army horses 軍馬 and vehicle-driving horses 乘輿馬,¹⁴⁶ and severe punishment is imposed if the selection criteria is not met.

It should be noted that the time of compilation of the *Zhou li* is still a topic of heated debate, among which the mainstream idea dates it to the Warring States period.¹⁴⁷ Both the *Zhou li* and the Qin legal documents are from the same time period when old rituals gradually collapsed and new social orders were established through legal reforms. The horse played a very important role in the forming of new orders, as will be discussed in Chapter 6.

2, The horse in pre-imperial Chinese mythology, religion and philosophy

A). The horse in pre-imperial Chinese mythology and religion

The horse is associated with Chinese mythology from very early times. Several documentary records about the legendary era mentioned horses as auspicious omens:

山出器車，河出馬圖。（《禮記 禮運》）

The Mountain produced vessel and chariot; the
River produced horse chart.¹⁴⁸

(*Liji*, Ch. 9)

¹⁴⁶ The meanings of these two terms are unclear. One possibility is that the army horses referred to the horses that worked as cavalry horses, and their counterpart as chariot-driven ones. Another explanation is army horses comprise all warhorses.

¹⁴⁷ For a detailed discussion on the date of the compilation of the *Zhou li*, see Wang (2006: 243).

¹⁴⁸ It is believed that the famous Yellow River Chart (*Hetu* 河圖) representing the basic pattern of the cosmos was brought out of the Yellow River on the back of a horse.

昔者黃帝治天下……飛黃服皂。（《淮南子 覽冥訓》）

Formerly when the Yellow Emperor ruled all under Heaven, ... the flying yellow horse was tamed in stable.

(*Huainanzi*, Ch. 6)

及（舜）即帝位……景星出房，地出乘黃之馬。（《宋書 符瑞志》）

As Shun succeeded the throne, ... an auspicious star appeared at the Room Mansion, and horses driving a yellow chariot emerged on earth.

(*Song Shu*, Ch. 17)

These records are merely myths, and the horses mentioned here probably were not domesticated; yet they reflect the importance and auspiciousness of the horse in primitive times.

For domesticated horses, a belief that probably can be traced to the Shang Dynasty states that dragon-horses pull the chariot of the sun across the sky (Yuan 1993: 74). In the *Mu Tianzi zhuan*, dragon-horses pulled King Mu of Zhou through the sky in search of the great deity Queen Mother of the West 西王母 (Yates 2003: 11). Jean-Pierre Diény (1987: 199-204) and John Hay (1994: 119-49) have done more research on the dragon-horse. Noteworthy is the above-mentioned passage of the *Zhou li* in which a horse taller than eight *chi* is called a *Long* or dragon. Not coincidentally, the first representation of riding in early China comes from a painting found in the Zidanku 子弹庫 tomb; it shows a man riding a dragon under a canopy, which is explained as driving a chariot (Hay 1994: 129). Here the image of the dragon

and the horse mixed together, resulting in the most powerful animal, just as what is represented in the *Yi Jing* and its commentaries where the horse is depicted as a symbol of the *yang* 陽, imitating the dragon (Yates 2003: 12-13, See Fig. 67).¹⁴⁹

Robin Yates concluded that the horse was understood as a “spiritually powerful mediator between the heavenly and earthly realms and an essential means of preserving state power on earth” in early China (Yates 2003: 14-15). This view tallies with Roel Sterckx’s discussion of the dual functions of animals as both mediums and objects of worshipping in Chinese religion (Sterckx 2006: 260).

On the one hand, for the evidence that horses were worshipped, the spirits of horses such as the “Horse Ancestor,” “First Herdsman,” “Horse God” and “Horse Walk Demon” became the recipients of sacrificial offerings, as attested in the *Zhou li* (see above for details). Also in his study on the *Rishu* 日書 or “daybook” (almanac texts) of the Shuihudi Qin documents, Sterckx suggested that a horse fertility spirit *Mamei* 馬祿 “horse begetter” was worshipped by late Warring States elites (Sterckx 1996).

On the other hand, as early as the Shang Dynasty (see Chapter 4) horses were viewed as mediums of worshipping in Chinese religion, either in the form of living working animals (as discussed above) or sacrificial victims. Colts were used as sacrifices to the mountains and rivers until Emperor Wudi of Han changed the rites in

¹⁴⁹ As mentioned before, in 易經 說卦傳, *Yi jing, Shuogua zhuan, juan 8* the horse is associated with the hexagram *Qian* 乾 or male, while the cow is associated with the all-*yin* hexagram *Kun* 坤 or female. In the meantime, the all-*yang* hexagram *Qian* is also related to the dragon, as attested in the main text of the *Yi jing*.

103 BCE replacing real horses with wooden replicas (Watson 1961: 67). Late Warring States manuscripts excavated at Baoshan 包山, Jingmen, Hubei Province (ca. 316 BCE) documented sacrificial victims including horses, pigs, sheep and dogs (Chen 1996: 175-80; Chen 1999: 57-59). Moreover, a white horse is used for a covenant victim, as reported in the *Shi ji* (Ch. 69, Ch. 70). Covenant fields excavated at Houma 侯馬, Shanxi Province (early 5th c. BCE) and Wenxian 濩縣, Henan Province (late 5th c. BCE) contain mostly sheep, with oxen and horses (Sterckx 2006: 268). The last thing I want to mention is the sacrificial ritual accompanying funerary ceremonies, which has been thoroughly discussed in Chapters 3 and 4.

Several conclusions can be made after surveying the facts above. Firstly, massive sacrificial uses of the horse are attested in the Zhou Dynasty. On the contrary, it is difficult to conceive that the Shang royal court would sacrifice a horse unless they intended to worship the deceased ancestors. This may prove that the Shang and the Zhou views of the horse are quite different: whereas the Shang elites simply valued the horse as a powerful, respectable animal, their Zhou counterparts explored the use of the horse as a more complex being. They eat them (Yuan and Xu 2001), drive them, use them as sacrificial victims, as well as worship them. It is just in the Zhou Dynasty that the horse began to serve as a crucial part of Chinese history (see Chapter 6). In the Shang, however, it is no more than an exotic animal used for ancestral cult and royal hunting (see Wang 2007a: 351).

Secondly, most of the evidence we have collected so far for the use of the horse

in pre-imperial Chinese mythology and religion is from the late Warring States period. The *Zhou li* is believed to be a late Warring States anonymous work (Yü 1994), and so are the commentaries to the *Yi jing*. Covenant, almanac and legal documents excavated from all over China are dated back to late Warring States period as well. Just as we discussed in Chapters 3 and 4, the civil and military exploitation of the horse had been maximized by the late Warring States period. As reflections of real social life, late Warring States texts provide the most comprehensive sources of the horse in mythology and religion.

Thirdly, concerning the contents of the facts above, the horse was worshipped or used as a medium of worshipping. Some animals, such as the oxen and the sheep, were used mainly as a medium of worshipping, while others, such as the dragon and the tiger (Sterckx 2006: 262) were mainly the object of worshipping. The horse is perhaps one of a few animals that bears the function of being worshipped and used as medium of worshipping.¹⁵⁰ The reason behind this phenomenon is that there might have been a twofold image of the horse, which is the combination of an image of the wild horses native to the East Asian Heartland, and that of domesticated horses imported from outside. While the native wild horse was seen as an auspicious omen, the imported domestic horse was used for transportation and warfare. The ritualistic nature of transportation and warfare gave rise to the power of the horse in ancient Chinese mythology and religion.

¹⁵⁰ Another animal of the same kind is the dog; for the dog in East Asian religious context, see Mair (1998).

To sum up, we are able to see the importance of the horse in Chinese mythology and religion from the above discussion. As an auspicious animal in mythology, either as an object or a medium of worshipping, the horse possesses a prominent position in the early Chinese pantheon.

B). The horse in pre-imperial Chinese philosophy

One of the most famous Chinese philosophical discourses is Gongsun Longzi's 公孫龍子 *A Discourse on the White Horse* 白馬論. He argued that “a white horse is not a horse.” 白馬非馬 Robin Yates (2003: 9) believes that Gongsun Longzi frames his argument because horse physiognomy had already become popular among ordinary people. Here we may recall the fact discussed in the previous chapter that white horse had been seen as an auspicious symbol since the Shang Dynasty (Qiu 1992, Wang 2007a: 329-331). Horse physiognomy must have been popular among people for centuries.

More about the horse can be seen in other philosophers' works. In the *Analects* (10: 12), a famous passage says: “The stable was burned down. On his return from the court Confucius said, “Has any man been hurt?” He did not ask about the horses.” (Legge 1861: 98).

This passage exemplifies the Confucian anthropocentric view of the world: It is anthropocentric because it recognizes that only humans have high intrinsic values so that they occupy a superior position in the natural world (Fan 2005: 107). In the

human-horse relationship expressed here, the life of the human always is highly valued so that the life of the horse can be neglected in an emergency. Love for humans is qualitatively more important than sympathetic love for animals (Fan 2010: 84). Horses, the same as other animals, were used merely for rites or *li* 禮, just as illustrated in the passage below (*Analects* 10:15):

When his friend died, if he had no relations who could be depended on for the necessary offices, he would say, "I will bury him." When a friend sent him a present, though it might be a carriage and horses, he did not bow. The only present for which he bowed was that of the flesh of sacrifice.

(Legge 1861: 99)

Here the horse was used as an inappropriate present, not conforming to the rites.

Another similar reference to the horse is attested in the *Analects* (16: 12):

The Duke Jing of Qi had a thousand teams, each of four horses, but on the day of his death, the people did not praise him for a single virtue. Bo Yi and Shu Qi died of hunger at the foot of the Shou Yang mountain, and the people, down to the present time, praise them. Is not that saying illustrated by this?

(Legge 1861: 179)

It can be seen from the two passages above that the horse has been a significant symbol of wealth and power at the date of the *Analects*. In the Confucian view, however, the horse is merely an animal used for rites for human beings. This anthropocentric view is sharply in contrast to the Daoist naturalistic view of the horse, as attested in the *Zhuangzi: Horses's Hoofs*:

Horses can with their hoofs tread on the hoarfrost and snow, and with their hair withstand the wind and cold; they feed on the grass and drink water; they prance with their legs and leap: this is the true nature of horses. Though there were made for them grand towers and large dormitories, they would prefer not to use them. But when Bo-le (arose and) said, 'I know well how to manage horses,' (men proceeded) to singe and mark them, to clip their hair, to pare their hoofs, to halter their heads, to bridle them and hobble them, and to confine them in stables and corrals. (When subjected to this treatment), two or three in every ten of them died. (Men proceeded further) to subject them to hunger and thirst, to gallop them and race them, and to make them go together in regular order. In front were the evils of the bit and ornamented breastbands, and behind were the terrors of the whip and switch. (When so treated), more than half of them died.

(Legge 1891: 276–277)

Here, the *Zhuangzi* harshly criticized the anthropocentric physiognomy and horse breeding of the legendary horse physiognomist Bo Le 伯樂. This critique reflects the Daoist view of society: people should live according to their own nature and not be constrained by the morals of the Confucians and Mohists (Yates 2003: 10-11).

In the *Mozi*, the horse usually is accompanied by the chariot (車馬), the cow (牛馬), the bow (弓馬), or the dog (犬馬), depicted as valuable possessions or useful tools. Rather than obedience to rites, the *Mozi*'s moral teachings advocate asceticism, while renouncing both material and spiritual extravagance. Therefore the horse, along with other possessions, is sometimes viewed as symbol of profligacy. On the other hand, superior horses (良馬) are depicted as metaphor of useful tools, which

embodies the utilitarianism of the Mohist school:

Mozi (1. 1. 6)

Good bows may be hard to draw, but they can reach great heights and pierce deeply. Good horses may be hard to ride on, but they can carry heavy burdens and make long journeys. Real talents may be hard to command, but they can be trusted to be envoys to the court of the emperor and to meet the nobility.

Mozi (13. 1. 17)

Peng Qing Shengzi said: "The past can be known, the future cannot." Mozi said: Suppose your parents met with misfortune a hundred *li* away. And there was just the margin of a single day. If they could be reached they would live, if not they would die. Here are a strong wagon and an excellent horse, and also a bad horse and a square-wheeled cart. And you are allowed to choose. Which would you take? It was replied that the excellent horse and the strong wagon would of course make for a more speedy journey. Mozi said: How then is the future not knowable?

(translated by W. P. Mei, 1929)

Compared with the Confucian and the Mohist school, the legalist school viewed the horse as an important resource for the development of the state, as illustrated in the two famous paragraphs in the *Han Fei Zi* 20, 20-21:

Now, horses in general are greatly useful because they carry armor and weapons and facilitate indulgence in pleasures and extravagant livelihood. However, inasmuch as the ruler who upholds the true path rarely employs armor and weapons and forbids indulgence in pleasures and extravagant livelihood, the sovereign does not have to use horses in warfare and drive them back and forth and the masses of the people never have to employ horses for transporting luxuries between distant places. What they devote their strength to, is farms and

fields only. If they devote their strength to farms and fields, they have to haul dung for fertilizing the land and water for irrigating it. Hence the saying: "When All-under-Heaven follows Dao, race-horses are reserved for hauling dung."

If the ruler of men does not uphold Dao, at home he will misgovern the people and abroad he will offend the neighboring states. If he misgoverns the people, the people will lose their property; if he offends the neighboring states, warfare will frequently take place. If the people lose their property, the cattle will decrease; if warfare takes place frequently, officers and soldiers will be exhausted. If cattle decrease, warhorses will become few; if officers and soldiers are exhausted, the army will be jeopardized. If warhorses are few, then even mares will have to appear on the battle-field; if the army is jeopardized, then even courtiers will have to march to the front line. After all, horses are of great use to troops, and "suburb" means "neighborhood at hand." Since they have to replenish the army with mares and courtiers, hence the saying: "When All-under-Heaven does not follow Dao, war horses are bred in the suburbs."

(translated by Liao 1939)

Instead of weighing in on the morality scale as the Confucians and Mohists did, the legalist views the horse as purely practical, namely the value of the horse is determined solely by its use. In this treatise, however, we have an impression that the best use of the horse was to be a draft animal working in the fields.¹⁵¹

To sum up, the horse was integrated into the theories of all the philosophical schools of pre-imperial China, and all schools have classical discourses concerning the horse. At that time, the philosophical knowledge of the horse was based primarily

¹⁵¹ Whether the horse actually worked as a draft animal in pre-imperial China is still debated, see for instance You (2002), also see the discussion in Chapter 4 of this dissertation.

upon the development of horse breeding and physiognomy, which is in turn reflected in a larger context of animal welfare, as I will discuss below.

C).The horse in the context of animal welfare

In the Chinese world, animal welfare is an old topic of philosophical discourse beginning from the era of the Warring States. The background of animal welfare was the development of animal breeding, physiognomy, and veterinary medicine, which was practiced as early as the 5th century BCE (Creel 1965).

The Confucian view of animal welfare assumes that animals have value and are worthy of interest primarily because they are serviceable for human needs. The instrumental value of the horse is evident in that it was used for pulling carriages. Caring for animals, however, is also a distinct virtue of the Confucians.

Take the *Analects* (10:12) above as an example. Confucius is asking solely about the humans who bespoke his idea that humans must be highly protected and respected, but we cannot treat his words as if Confucius was not at all concerned with the horse. As Fan Ruiping (2010: 84) pointed out, benevolent love toward humans is not tradable with sympathetic love toward animals within the Confucian context. In another passage of the *Analects* (7:26), the caring of animals is evidently shown: “The Master angled, but did not use a net. He shot, but not at birds perching.” (Legge 1861: 67)

To Confucians, rational and moral judgments are to recognize that living

creatures deserve accommodating treatment in their own right according to their natures, life stages, and seasons. Especially for working animals like the dog and the horse, Confucius thought they should not be sacrificed in ordinary rituals. They should be buried as they die. This idea is indicated clearly in the *Liji* (2: 203).

The dog kept by Confucius having died, he employed Zigong to bury it, saying, "I have heard that a worn-out curtain should not be thrown away, but may be used to bury a horse in; and that a worn-out umbrella should not be thrown away, but may be used to bury a dog in. I am poor and have no umbrella. In putting the dog into the grave, you can use my mat; and do not let its head get buried in the earth. When one of the horses of the ruler's carriage dies, it is buried in a curtain (in good condition)."

(Legge 1967, 196–197)

After Confucius, Mencius advocates the caring for animals in a general sense:

Mencius said, "A virtuous man is caring toward non-human animals but is not benevolent toward them; he is benevolent toward the people but is not devoted to them. He is devoted to his parents but is merely benevolent toward the people; he is benevolent toward the people but is merely caring to non-human animals."

(Fan 2010: 79)

From this point of view, three distinct attitudes represent three types of love: devotion to one's parents, benevolence to the people, and caring to animals. Although this shows "love in differentiation" (Fan 2010: 80), it bespeaks that animals should be the objects of human love. Compare this idea with the paragraph in the *Liji* above, we are able to see that the Confucian view of animal welfare is two-tier: to ordinary

animals and to animals that work as companions of humans (such as the dog and the horse). Just as the two-tier love toward human beings, Confucians practice love in differentiation to animals. The horse, along with the dog, becomes the closest animal that should be cared for first.

This anthropocentric view of animal welfare is also expounded in the *Xunzi*, (9. 22):

If it is the season when the grasses and trees are in the splendor of their flowering and sprouting new leaves, axes and halberds are not permitted in the mountain forest so as not to end their lives prematurely or to interrupt their maturation. If it is the season when the giant sea turtles, water lizards, fish, freshwater turtles, loach and eels are depositing their eggs, nets and poisons are not permitted in the marshes so as not to prematurely end their lives or to interrupt their maturation. By plowing in spring, weeding in summer, harvesting in autumn, and storing up in winter, the four activities are not out of their proper season; thus, the production of the five foods is not interrupted, and the hundred clans have more than enough to eat. The ponds, lakes, pools, streams, and marshes being strictly closed during the proper season is the reason that fish and turtles are in plentiful abundance and the hundred clans have surplus for other uses. The cutting and pruning, the growing and planting, not being out of their proper season is the reason the mountain forests are not denuded and the hundred clans have more than enough timber.

(Knoblock 1999: 241)

Other Confucian philosophers also mentioned animal welfare from this perspective.

For example, in the *Liushi Chunqiu: Xiaoxing lan, Yi shang*, 吕氏春秋 孝行覽 義賞:

“To fish by emptying the water of a pond, how can it not be obtained? Yet the next

year there will be no fish. To hunt by burning the woods, how can it not be obtained?

Yet the next year there will be no beast.”

In contrast, the Daoist view of animal welfare is quite different. Early Daoists view about the natural world can be traced to the work of Zhuangzi, who described the existence of human beings as only one temporary stage of an endless sequence of mysterious transformations. Another basic idea in the *Zhuangzi* that is crucial here is 无爲 “non-action,” “not interfering” with the natural world. Also, to Daoists, the food chain in the universe is natural. Although all things are equal, as far as their value is concerned, the relation between prey and predator is natural as well.

Although Confucianism and Daoism may have similar ideas about following the Way, the Daoist view may encourage exploitation of useful plants, animals and minerals without restriction, for they view the preying as natural.

In the *Zhuangzi Horses’s Hoofs* (see above), the author objected to the shackles on the horse. Instead he argued for the idea that everything returns to the natural situation. Taking into account a broader sense, *Zhuangzi: Tianxia* records an emperor Wonton in the center, being repaid by the two emperors from the north and the south:

The emperor of the Southern Sea was Lickety, the emperor of the Northern Sea was Split, and the emperor of the Center was Wonton. Lickety and Split often met each other in the land of Wonton, and Wonton treated them well. Wanting to repay Wonton’s kindness, Lickety and Split said, “All people have seven holes for seeing, hearing, eating, and breathing. Wonton alone lacks them. Let’s try boring some holes for him.” So every day they bored one hole, and on the seventh day

Wonton died.

(Mair 1994: 71)

The above passage shows the Daoist view of “not interfering” with the natural world.

As Paul R. Goldin remarks, “[if] we attempt to carve nature in our own image, nature will die” (Goldin 2005: 80).

From the legalist point of view, laws protecting animals are means that made the state prosper. There were many laws in the pre-imperial era for protecting animals.

The first one, as recorded in the *Shuo yuan* 說苑 (15. 17) by Liu Xiang 劉向 (77–6 BCE), is King Wen of Zhou’s order before he set out to invade the Chong 崇 state:

Before King Wen wanted to attack the Chong state, he proclaimed: “I heard that Marquis Hu of Chong distains his father and brother, despises the elders, being not just in lawsuits and not even in the distribution of wealth. The hundred clans have made all efforts yet there are still lack of clothes and food. I will come and attack him, just for the sake of the people. I order not to kill people, not to damage rooms, not to fill wells, not to cut down trees, not to disturb the six animals. If one does not follow these orders, he will be killed without a pardon.” Having heard this, the Chong people begged to surrender.

The Qin legal documents excavated at Shuihudi that we saw above also show protection to the animals, especially horses and cows that worked for transportation, military affair and agriculture. Moreover, the Qin code even extended its protection to wild animals and the entire environment:

春二月，毋敢伐材木山林及雍（壅）隄水。不夏月，毋敢夜草為灰，取生荔、麝（卵）殼，毋□□□□□

毒魚鱉，置穿罔（網），到七月而縱之。（《田律》）
In the second month of the year in the spring, cutting
woods of the forest is forbidden, so is blocking in river
courses. Do not burn grass into ash, or catch cubs, wild
eggs, or ... until the summer. ... poison fish and turtles,
set traps and nets, and to the seventh month the
prohibitions are rescinded.

(*The Code on Farming*, Fig. 59)

The law cited above echoes the statement in the *Xunzi* (9. 22) about the prohibition of cutting wood and catching animals.

The horse, as a valuable domestic animal, is included of course in the consideration of animal welfare in pre-imperial China. Horse physiognomy treatises and veterinary manuals are the attestations of selecting and protecting horses. Although no such work of the pre-imperial era is preserved, a Han-Dynasty silk manuscript named *Xiangma Jing* 相馬經 (*Canon of Horse Physiognomy*) was discovered at Mawangdui 馬王堆, Changsha, Hunan Province (Xie 1977). Also, a fragmentary wood manuscript of another Han work on physiognomizing horses was found at Majuanwan 馬圈灣, Dunhuang, Gansu Province (Gansu Provincial Museum 1981). The tradition of veterinary manuals can be extended to the Tang Dynasty when Li Shi 李石 (?–845 CE) compiled the famous *Si mu an ji ji* 司牧安驥集 on treating diseases and other problems. From these sources, we may postulate that in the pre-imperial era protecting of the horses had been developed as well.

Chapter 6: The horse and early Chinese civilization

Together with bronze metallurgy and wheel technology, the domesticated horse profoundly changed early Chinese civilization mainly as a means of transportation: for transport people, goods and information. Even if we only see its ritual and symbolic usage in the Shang Dynasty, during the Zhou Dynasty, the horse along with the chariot became one of the decisive forces of civilization. Beginning in the Warring States period, horseback riding further propelled the emergence of the Qin-Han Empire.

1, Horse-powered communication and the Zhou expansion

A). Predynastic¹⁵² Zhou people and the horse

In their legendary stage when their progenitor Houji 后稷 or “Lord of Millet” was their leader, the Zhou people were said to lead an agricultural way of life. According to the *Shi ji: Zhou benji* 史記 周本紀, Houji’s son Buku 不窋 lost his position as an agricultural minister of the Xia Dynasty and migrated to live among the Rong 戎 and the Di 狄 barbarians. Although nothing is known about Buku’s son Ju 鞠, Ju’s son Gongliu 公劉 was recorded to have returned to agriculture though the Zhou people still lived among the Rong and the Di during his time.¹⁵³

Owing to their original proximity and affinity with the Rong and the Di, quite

¹⁵² Here “predynastic” means the time before the conquest of Shang in the mid-11th century BCE.

¹⁵³ For another point of view holding that the Zhou people were of nomadic origin, see Chen (2002:312–15).

probably semi-nomadic tribes in the Northwest, the Zhou people practiced equestrianism in the predynastic ages. Just as I cited in Chapter 4, the legendary ancestor of the Zhou clan, Gugong Danfu, might have been proficient at horseback riding.

The accounts of Gugong Danfu in the *Shi ji* and the *Shi jing* indicate that the Zhou people migrated from their own region at Bin 邠, across the valley of Ju 洹 and Qi 漆 rivers, to the Zhou Plains at Qixia 岐下 (modern Qishan 岐山 and Fufeng 扶风 in the central Wei 渭 valley of Shaanxi Province).¹⁵⁴ This great migration was depicted as follows:¹⁵⁵

. . .then he (Gugong Danfu) left Bin with his personal attendants, crossed the Qi River and the Ju River, traversed Mount Liang 梁, and stopped at the foot of Mount Qi 岐. The entire populace of Bin, holding their old and carrying their children again turned to Gugong at the foot of Mount Qi. When other states learned of Gugong's benevolence, many of them allied themselves with him. It was then that Gugong forsook the customs of the Rong and the Di, built city walls and houses, and settled his people in various cities. He appointed officials for the five offices. The people put all this to song and music in order to praise his virtue.

(Nienhauser 1994: 56–57, slightly emended)

The account of building a new city is found in the *Shi jing* (Mao 237, *Mian* 緜):

The plain of Zhou looked beautiful and rich,
With its violets and sowthistles [sweet] as dumplings.

¹⁵⁴ Regarding the regions of the Zhou people when they were among the Rong and the Di, there are two different major points of view: one theory put them in Northwest Shaanxi, and scholars believing in another theory insist that they dwelled in Southwest Shanxi. See Shaughnessy (1999: 302-307) for a detailed introduction to the debate.

¹⁵⁵ See also *Mencius* IB/15 for the route of migration.

There he began with consulting [his followers];
There he singed the tortoise-shell, [and divined].
The responses were - there to stay, and then;
And they proceeded there to build their houses.
He encouraged the people and settled them;
Here on the left, there on the right.
He divided the ground into larger tracts and smaller portions;
He dug the ditches; he defined the acres;
From the west to the east,
There was nothing which he did not take in hand.
He called his superintendent of works;
He called his minister of instruction;
And charged them with the building of the houses.
With the line they made everything straight;
They bound the frame-boards tight, so that they should rise regularly.
Uprose the ancestral temple in its solemn grandeur.
Crowds brought the earth in baskets
They threw it with shouts into the frames;
They beat it with responsive blows;
They pared the walls repeatedly, and they sounded strong.
Five thousand cubits of them arose together,
So that the roll of the great drum did not overpower [the noise of the
builders].
They set up the gate of the enceinte;
And the gate of the enceinte stood high.
They set up the court gate;
And the court gate stood grand.
They reared the great altar [to the Spirits of the land],
From which all great movements should proceed.

(Legge 1871: 438-440)

In regards to this story, I am interested in the sequence of migration. Apparently, it was Gugong Danfu and his elite followers who decided to make the primary move. At first such a move was probably done very swift, as they had horse-powered vehicles (or, less possibly, they rode on horseback). The second wave of migration from Bin included the remainder of the entire populace,, which was a huge number of people

and thus significantly slower. The third wave, then, was the population of some of the neighboring states.. Such a sequence of migration actually was repeated in the predynastic and early dynastic era of the Zhou. This pattern can be seen as a model of Zhou military expansion from the frontier into the heartland of China.

The Zhou state began its expansion in the last centuries of the 2nd millennium BCE. It is conceivable that the horse played an important part in this campaign. After the victory over the biggest pro-Shang state of Chong 崇 in western Henan, King Wen of Zhou decided to move his new capital 豐 near to the modern city of Xi'an. This is the Zhou's second step of military colonization in the Central Plains.

B). The Zhou expansion via horse-powered road system

Four years after the death of King Wen, his successor and second oldest son, King Wu, led the Zhou army and its allies, a troop of 45,000 soldiers and 300 chariots, in an attack against the Shang capital, Zhaoge 朝歌. They encountered the Shang army at Muye 牧野 and decisively defeated them. The last monarch of the Shang Dynasty, King Zhou 紂, committed suicide. The collapse of the Shang Dynasty left a gigantic political and geographical blank in the East Asian heartland, and the Zhou's strategy would influence definitively the fate of China throughout most of the first millennium BCE. King Wu began the military colonization of the Zhou populace, the so-called *fengjian* 封建, literally “conferring and establishing”.

At first, King Wu chose three of his younger brothers, Guanshu Cai 管叔鮮,

Caishu Du 蔡叔度 and Huoshu Chu 霍叔處, to oversee the government of Wu Geng 武庚, the son of the Shang King Zhou, who ruled the former Shang territory. Meanwhile, King Wu appointed another younger brother, Zhougong Dan 周公旦 (“the Duke of Zhou”) to be his chief counselor in the Zhou capital. He also established vassal states in frontier areas. His younger brother, Zhaogong Shi 召公奭, was in charge of one vassal state at Yan 燕 (near modern Beijing); and the leader of the Jiang 姜 clan, Taigong Wang 太公望, oversaw Qi (in modern Shandong province). Yan and Qi served as strongholds against local tribes.

King Wu died two years after the conquest of Shang. The initial political arrangement apparently caused an internal crisis. The three overseers, along with the Shang leader Wu Geng, rebelled against the newly established regency of the Duke of Zhou. Allied with Zhaogong Shi, the Duke of Zhou managed to defeat the rebellious army, executed Wu Geng and Guanshu Xian, exiled Caishu Du, and deprived Huoshu Chu of noble status. The Zhou troops not only reconquered the Shang dominion but also marched to the farther east region of the Yi 夷 barbarians in the coastal region..

This second conquest left an even larger political and geographical vacancy for the Zhou rulers, namely the newly enthroned King Cheng 周成王 (r. ca. 1042-1021 BCE), the Duke of Zhou and Zhaogong Shi. Being totally aware of the disadvantage of the previous arrangement, this triumvirate decided to confer more and more territories upon the close relatives of the Zhou aristocrats. The Duke of Zhou started constructing a new eastern capital at Luoyi 洛邑, also referred to as Chengzhou 成周

at modern Luoyang, Henan province. This project was described in the *Shi ji* as the will of King Wu.¹⁵⁶ Other members of the royal family, such as the king's younger brothers Tangshu Yu 唐叔虞 and Yinghou 應侯, were sent to the Fen 汾 valley (modern Shanxi province) and Ying 應 (south of Luoyang), respectively. Meanwhile, another brother of King Wu, Kangshu Feng 康叔封, was enfeoffed at the former Shang capital area, and established a new state of Wei 衛. These new vassal states, along with the states established during the reign of King Wu, became the military colonies of the Zhou in and around the East Asian heartland.

The way in which these vassal states were established is worth noting. Later accounts in the *Zuozhuan* 左傳 定公四年 recorded the process of the enfeoffment during the reign of King Cheng:

When King Wu had subdued Shang, King Cheng completed the establishment of the new dynasty, and chose and appointed [the princes of] intelligent virtue, to act as bulwarks and screens to Zhou. Hence it was that the Duke of Zhou gave his aid to the royal house for the adjustment of all the kingdom, he being most dear and closely related to Zhou. To the duke of Lu 魯 (Boqin 伯禽, the Duke of Zhou's son) there were given—a grand chariot, a grand flag with dragons on it, the huang-stone of the sovereigns of Xia 夏, and the [great bow], Fanruo 繁弱 of Fengfu 封父. . .

To Kangshu 康叔 (the first marquis of Wei 衛) there were given a grand chariot, four flags,—of various coloured silks, of red, of plain silk, and ornamented with feathers,—and [the bell], Dalü 大呂. . .

¹⁵⁶ *Shi ji* 4, 129.

To Tangshu 唐叔 (the first lord of Jin 晉) there were given a grand chariot, the drum of Mixu 密須, the Quegong 闕鞏 mail, the bell Guxian 沽洗. ...¹⁵⁷

We can see that among the granted valuables, the grand chariots 大路 were always listed first, together with flags, bells and so on. It is conceivable that the flags and bells would be attached to the chariot. The chariot as a whole became the badge of the local lords. An interesting account in the *Shuo yuan* 說苑 shows that this tradition continued even in the Spring and Autumn period:

Duke Ping of Jin 晉平公 (r. 557–532 BCE) owned an elaborate chariot for racing. It was decorated with dragon banners, hung with rhinoceros horns and elephant tusks, and roofed with a circular covering of feathers. After it was finished, the duke had one thousand pieces of gold inlaid on the chariot; he placed it in front of his palace so that his subjects could see its magnificence.

Shuo yuan 20, 10. See Lu 1979:715

Back to the texts of enfeoffment, the use of a lavishly ornamented chariot for the feudal lords was an essential part of the Zhou military colonization of the East Asian heartland. As K. C. Chang has pointed out, they were “the ceremonial badges and items that fit their political status and the political status of their newly established state” (Wu 2009:199). The horse-drawn chariots, along with other valuables bestowed by the Zhou king, became not only symbols of the colonizers who came immediately to their fief but also the representations of the royal power of the Son of Heaven, as the *Shi jing* goes:

¹⁵⁷ Translation excerpted from <http://goo.gl/RVsV0>, accessed March 10, 2012.

Under the wide heaven, All is the king's land.
Within the sea-boundaries of the land, All are the king's servants.
(Mao 205)

The unification of northern China in the Western Zhou Dynasty relied mostly upon many local feudal authorities based on the royal power, and the horse-drawn chariots were indeed the embodiment of these authorities.

The scenario of the military colonization began with the enfeoffment, and then it is imaginable that horse-drawn vehicles (including carriages and chariots) played an important role in the Zhou expansion. The main colonies mentioned above, Lu, Wei, Jin, as well as Qi and Yan, were all located in the plains. Among them, Qi and Lu were in the lower Yellow River valley, the Shandong peninsula; Wei was in the middle Yellow River valley; Jin was in the Fen River valley; and Yan was in the Hai River valley. Such geographical features provided ideal condition for maneuvering horse-drawn vehicles. Also, the remote distance between the strongholds made horse-drawn vehicles the most commonly utilized means of transportation and communication.

There are many examples in the *Shi jing* depicting the use of the horse and horse-drawn vehicles.¹⁵⁸ It should be mentioned here, however, that the Zhou road system had been established to facilitate the movement of horse-drawn vehicles. This system serves as the first geographical basis of the Chinese civilization.

The road system was mainly referred to as “Zhou road” 周道 or “Zhou way” 周

¹⁵⁸ For a detailed discussion of these examples, see Li (2009, esp. 12–13) and Ouyang and Cai (2005).

行. Several interesting records in the *Shi jing* document that the horse-drawn vehicles ran on the Zhou road or Zhou way.¹⁵⁹

The way to Zhou was like a whetstone,
And straight as an arrow.
(*Mao* 204)

Our box-carts,
Keep moving along the great roads.
(*Mao* 234)

My four steeds advanced without stopping;
The way from Zhou was winding and tedious.
(*Mao* 162)

With a sigh for the man of my heart,
I placed it there on the highway.
(*Mao* 3)

These records clearly indicate that the road system of the Zhou Dynasty helped the feudal states to communicate with each other. In most of the Western Zhou period, these vassal states served as military insular strongholds against the non-Zhou “barbarians.” The road system, as well as the horse-drawn vehicles travelling on it, connected the colonies and the Zhou capitals. This arrangement provided security in the newly founded Zhou dominion and protected every Zhou city at the frontier against the assaults from the non-Zhou tribes. In contrast, at the end of the Western Zhou Dynasty along with the weakening of the royal court, the Zhou roads fell into disuse, as attested in *Mao* 197:

The Way to Zhou should be level and easy
But it is all overgrown with rank grass.

¹⁵⁹ All translations of the *Shi jing* are adopted from Legge (1871), accessible online at <http://ctext.org/book-of-poetry>.

It is plausible that the establishment and the decline of the Zhou road system testify to the rise and fall of the Western Zhou Dynasty. At the peak of the Western Zhou reign, for instance, the mighty King Mu 穆王 (r. ?-947 BCE) managed to travel around the kingdom; he attacked the Quanrong 犬戎 of the West¹⁶⁰ and was even said to have reached as far as the Kunlun 崑崙 mountains in the *Mu Tianzi zhuan* 穆天子傳.¹⁶¹ It is recorded that he drove an eight-horse-powered vehicle for this long journey. Without the horse power and the road system, he would not have been able to travel this far.

According to the *Zhou li* 周禮 秋官司寇第五, the Western Zhou road system was administered by an official Yelu Shi 野廬氏. On the road, there was a Lu 廬 “cottage” for 10 *li* serving food and drink, a Xu 宿 “lodging station” for 30 *li* with hostel and fodder for horses, and a Shi 市 “market” for 50 *li* with house of post and bulks of provisions and forage. Although this might be an ideal situation, it indicates that the Zhou road system was certainly under central control.

To conclude, at the early stage of the Zhou Dynasty, horsepower catalyzed the use of the road system, which in turn strengthened the association between the Zhou royal capitals and the frontier strongholds. Thus, we probably can say that the horse was essential for the unified government of the Western Zhou Dynasty at the cradle of Chinese civilization.

¹⁶⁰ *Shi ji* 4, 135-136.

¹⁶¹ For the historical geography related to the *Mu Tianzi zhuan*, especially the locus of the legendary Kunlun mountain, see Wang (1998, 2000) and Yu (2007).

C). The road systems in the Spring and Autumn period

It should be noted that the early Zhou road system might have been preserved in the Spring and Autumn period. In sources such as the *Shi ji: Kongzi shijia* 史記 孔子世家 and the *Analects* 論語, Confucius and his disciples were said to have travelled through many states, which obviously reflects that the communications among the states had been unimpeded. Actually, the road system became much more sophisticated in the Spring and Autumn period.

As recorded in the *Zuozhuan* 左傳 莊公元年、襄公三十一年 (first year of Duke Zhuang and 31st year of Duke Xiang), the state of Lu 魯 built the “House of the King” 王姬之館 and “House of the feudal lords” 諸侯之館 to lodge the envoys from the Zhou royal court and other feudal states. In the prosperous state of Qi, “house of post and fodder were established per thirty *li*, with an official administer on them” (*Guanzi: Dakuang* 管子·大匡).

In the Spring and Autumn period, blood covenants became fully developed. Leaders and envoys of many states assembled at one place and sealed these covenants. The advanced post system guaranteed the success of the assemblies and the forthcoming hegemony of the major states in the covenants. For example, one of the Five Hegemons, Duke Wen of Jin 晉文公 (r. 636–628 BCE), was appraised by the later political strategist Zi Chan 子產 (?–522 BCE) as follows:

I have heard that when duke Wen was lord of

covenants, his own palace was low and small, and he had no prospect-towers or terraces; —that he might make the reception-houses for the princes the more lofty and large. The chambers were as large as his own, and the repositories and stables belonging to them were kept in good order. The minister of Works saw at the proper seasons that the roads were made in good condition. The plasterers in the same way did their duty on the apartments. Then when the visiting princes arrived, the foresters supplied the torches for the courtyards; the watchmen made their rounds about the buildings; the followers of the guests were relieved of their duties by men supplied for the purpose; there were menials, herdsmen, and grooms, to see what might be required of them to do; and the officers belonging to the various departments had the articles which they had to prepare for the guests ready for supply.

(*Zuo zhuan*, 31st year of Duke Xiang 左傳 襄公三十一年)¹⁶²

A counter example appears in the *Guoyu: Zhou yu* (2. 21) 國語 周語, when Duke Xiang of Shan 單襄公 passed the state of Chen 陳 on a visit to Chu, he saw that the Chen road system was ruined, and the houses of the post were deserted. He then sighed with emotion and asserted that Chen was on the verge of being conquered. Whereas Duke Wen of Jin was one of the greatest Hegemons in the Spring and Autumn period, the Chen ruler contemporary with Duke Xiang of Shan, Duke Ling of Chen 陳靈公, was killed in a coup d'état two years after the visit of Duke Xiang.

Generally speaking, most states in the Spring and Autumn period paid great attention to the construction and maintenance of road systems for horse-powered vehicles within their states or between states. Since most parts of the roads were outside of the cities, they facilitated the interaction of the cities and the rural areas,

¹⁶² Translation from <http://goo.gl/XIWqh>, accessed March 19, 2012.

thus served as a catalyst to the process of the city-states turning to the territorial states.¹⁶³

2, The advent of cavalry and the unification of the Qin-Han Empire

As has been discussed in Chapter 4, cavalry was adopted in Chinese states as late as 307 BCE, when King Wuling of Zhao decided to use mounted archery to subdue the many “barbarian” states and tribes surrounding his state.

Seeing that Zhao defeated the barbarian tribes and the barbarian state Zhongshan 中山, other major states also developed cavalry troops. According to the *Zhanguo ce* and other sources, most of the seven major states in the Warring States period possessed large cavalry forces:

“Chu has one million infantry, one thousand chariots and ten thousand warhorses.”

(Zhanguo ce; Shi ji)

“Zhao has several hundred thousand infantry, one thousand chariots and ten thousand warhorses.”

(Zhanguo ce)

“Wei 魏 has two hundred thousand infantry, two hundred thousand light infantry, two hundred thousand tough infantry, one hundred thousand slave troops, six hundred chariots and five thousand warhorses.”

(Zhanguo ce)

“Yan has several hundred infantry, seven hundred chariots, and six thousand warhorses.”

(Zhanguo ce)

¹⁶³ For the process that the city states gradually became territorial states, see Hsu (1999: 570-75) and Lewis (1999: 597-98).

“Qin has one million infantry, one thousand chariots and ten thousand warhorses”

(*Zhanguo ce*)

Although the amount of military force is not the sole factor of the fate of a state in wartime, the states that had the largest number of troops would dominate the harsh competition. In fact, it was just the three states with the largest forces of Qin, Chu and Zhao competing for the hegemony. At last, Qin overrode the other states and achieved the unification of China.

Traditionally the Qin triumph in the 3rd century BCE was viewed as a series of decisive battles against other major states to the east. Qin’s relationship with the “barbarian” tribes in the northwest, however, was a crucial element as well.

As early as the Western Zhou Dynasty, the Qin elite were famous for their horse breeding technique. One of the legendary ancestors of Qin, Feizi 非子 bred horses for the Zhou royal court. According to the *Shi ji: Huozhi liezhuan* 史記·貨殖列傳, the Qin territory of the Wei River valley “enjoys the benefit from the Qiang 羌 in the west, possesses the herds of the Rong and Di in the north, has the most prosperous place for husbandry among all under Heaven.”¹⁶⁴ The *Zhanguo ce: Han ce yi* 戰國策 韓策¹⁶⁵ also records that the Qin horses were superior to those of other states. At the end of the Warring States period, an affluent merchant, Wushi Luo 烏氏僕, was famous for his contribution to horse and cattle breeding, and the Shihuangdi

¹⁶⁴ *Shi ji* 129, 3262.

¹⁶⁵ See also *Shi ji* 70, 2293.

treated him as an important subject.¹⁶⁶ The documentary evidence above indicates that Qin has a great advantage in horse breeding. Also, if we recall the Shuihudi Qin code discussed in Chapter 5, it is undeniable that the Qin government paid special attention to the management of horse breeding.

Like the previously developed dynasty in the Wei River valley, Western Zhou, the Qin rulers attached importance to the construction of a road system. For the needs of the conquest of the states Shu 蜀 (in present-day Sichuan) and Ba 巴 (near present-day Chongqing), Qin constructed the so-called gallery roads 棧道, which consisted of wooden planks erected on holes cut into the sides of cliffs. During the reign of King Zheng 秦王政, namely the First Emperor of the Qin, along with the conquest of the Eastern States, a new road system, *Chidao* 馳道, i.e. “Road for speedy chariots”, was constructed to link the old roads of the conquered states. Most notable is the 736 km. long Qin zhidao 秦直道 (lit. “Straight road of the Qin”) from the capital Xianyang 咸陽 to the north, until Jiuyuan Prefecture 九原郡 (near present-day Baotou, Inner Mongolia). On the Qin zhidao, the Qin cavalry and war chariots could be mobilized speedily to resist the threat from the North—the nomadic Xiongnu.

The new road system built up the Qin guaranteed the unification of the Qin-Han Empire. Although the Qin rule was overthrown within fifteen years, the road system provided great convenience for communication within the later Han Dynasty.

¹⁶⁶ *Shi ji* 129, 3260.

According to the *Hou Han shu* 後漢書 輿服志, in the Han Dynasty horses for postal usage were deployed every 30 *li*.¹⁶⁷ These postal horses probably were provided by the peasants, but only the elite made use of them (Xie 1959: 106–108). In the Han Dynasty, the vehicular postal system gradually was replaced by the speedier horseback-based postal system.

Horsemanship, as its military form, namely cavalry, gave full scope to the advantage on the battlefield in the late Warring States period. A typical example is the famous Battle of Changping 長平之戰 between Qin and Zhao. Together with 25,000 circumventing infantry, a 5,000-warhorse cavalry force cut off the Zhao's path for transporting food. This was a pivotal strategy that led to the encirclement and the eventual disastrous defeat of the Zhao troops.¹⁶⁸

After the unification, the Qin Empire had to face frequent and persistent annoyance from the north. As the Xiongnu threat became more and more severe, the Qin government started to connect the defensive walls of Yan, Zhao and Qin. Another strategy of the Qin was to attack and occupy the Ordos region once controlled by the Xiongnu. When the brief rule of the Qin Empire collapsed, however, the Xiongnu returned to hound the northern frontier of China.

Although the history of the Han Dynasty is out of the scope of this dissertation, it should be noted that Emperor Wudi of Han 漢武帝 (r. 141-87 BCE) relied mainly

¹⁶⁷ According to Yang (2005), one *li* equals 415.8 meters. This means that the horses were deployed approximately every 12.5 km.

¹⁶⁸ See details in the *Shi ji* 73, 2334.

upon the cavalry to defeat the Xiongnu forces and dismember the Xiongnu confederacy. Famous cavalry leaders such as Wei Qing 衛青 and Huo Qubing 霍去病 took the advantage of cavalry and achieved successful campaigns.

3, A tentative comparison with other centers of civilizations

A). The acceptance of the horse in Shang China and other civilizations

After the initial successful breeding of the horse in the Steppe and the first adoption of horse-powered vehicles (see Chapter 2), the horse began to spread all over the Eurasian supercontinent, even as far as Egypt. Early centers of civilizations, such as Mesopotamia, Anatolia, the Indus Valley and the Aegean civilizations, all were influenced greatly by the advent of horsepower. If we compare the influence of the horse in these civilizations with the horse in China, we will find similarities and differences in the acceptance of horsepower.

A prevailing opinion of the current researchers (e.g. Anthony 2007; Drews 2004; Kelekna 2009; Kuzmina 2008) is that the advent of the horse and chariot in these centers of civilization was accompanied by the expansion of the Indo-European people. Namely, it is widely accepted that the Indo-Europeans led the stormy invasion of horse power from the Steppe to the mid-latitude sedentary cultures and civilizations.

The first proof of this view is the discovery of the Hittite kingdoms which at its peak (16th century BCE) became an empire stretching from the Aegean to the

Euphrates.¹⁶⁹ The Hittite language is one of the earliest attested the Indo-European daughter languages, with Luwian, Palaic, among others, forming the Anatolian language group.¹⁷⁰

Before the Hittite immigration to Anatolia, a group of native people named Hattians lived in Anatolia. Little is known about the Hattian people, as they did not have a written language. The Hittites, however, entered the “land of Hatti” in ca. 2200 BCE and possibly conquered the Hattian city-states (Bryce 2005: 12). A conspicuous feature of the Hittites is that they dominated the iron ores of Anatolia and produced the best iron in the Near East.

The most relevant characteristic of the Hittites is that they worshipped a rider god Pirva, and sacrificed horses at the burial of a king or queen (Kuzmina 2007: 333). The Hittite army consisted of horse-drawn war chariots and infantry. The chariots were deployed to fight other chariots, to panic the enemy infantry, and to run them down (Beal 2006: 548). Eventually in 1595 BCE, the Hittite King Mursili I (r. ca. 1620-1590 BCE) led his army of cavalry and infantry on an unprecedented long march of 2000 km to Mesopotamia and sacked Babylon. After that, the “Dark Age” of Mesopotamia due to the lack of documentation began when the Kassites, a semi-nomadic ethnic group of few known relations with other contemporary people, dominated Lower Mesopotamia until ca. 1475 BC. (Van de Mieroop 2007: 171-172) No inscription or document in the Kassite language has been preserved, an absence

¹⁶⁹ For a history of the Hittite kingdoms see Bryce (2005).

¹⁷⁰ For an introduction to the Anatolian languages see Fortson (2011: 170-200).

that cannot be purely accidental, suggesting a regression of literacy in official circles.

In the meantime, other ethnic groups relying on horsepower emerged in the historical records of the ancient Near East. Among them the Hyksos, who probably introduced the war-chariot to Lower Egypt, immigrated in and occupied the Nile Delta.¹⁷¹ Similarly, the semi-nomadic Kassites widely spread the use of the horse and chariot. Most notably, in Upper Mesopotamia,¹⁷² these Indo-Aryan immigrant aristocrats, the Mittani Aryans, ruled over the indigenous Hurrian people in the latter half of the 2nd millennium BCE, introducing “a perfect form of the chariot and a breed of horse most suited to chariotry.” (Kelekna 2009: 95) The Mitanni horse-training manual by Kikkuli (dating to the Hittite New Kingdom, ca. 1400 BCE) explains the seven-month preparation for a chariot horse (Kelekna 2009: 99). During the mid-2nd millennium BCE, these intruders — Hittites, Hyksos, Kassites and Mittani Aryans, occupied most of the Near East and established their supremacy based on new weapons represented by the horse-drawn chariots. Correspondingly, in the possibly less inhabited lands east and west of the Near East, namely Greece and the northwestern part of the Indian Subcontinent, the newly arrived Greeks and Indo-Aryans founded their overlordship around the mid-2nd millennium BCE as well.

Although little is known about the motivation of the invasions from the Steppe to

¹⁷¹ Formerly it was believed that the Hyksos migrated into Egypt by military force, as expounded in Winlock (1947). Nevertheless, recent archaeological and textual evidence indicates that the Hyksos entered Egypt with little violence, and their rule was established on the back of the internecine conflicts between local polities in Lower Egypt. See Booth (2005: 10) and Callender (2002: 157) for further information.

¹⁷² Upper Mesopotamia is the name used for the uplands and great outwash plain of northwestern Iraq and northeastern Syria and southeastern Turkey. It extends south from the mountains of Anatolia, east from the hills on the left bank of the Euphrates river, west from the mountains on the right bank of the Tigris river.

the mid-latitude regions, we can compare directly what has happened to these vast territories with the situation in China.

At the end of the last century, scholars have assembled and systematically studied evidence for the migration from the Steppe to China in the midways. The earliest mummies found in the Tarim Basin at Qäwrighul (in Chinese 古墓沟 *Gumugou*)¹⁷³ in modern Xinjiang Uyghur Autonomous Region, dated to 1800 BCE, are of a Caucasoid physical type and affiliated to the Bronze Age population of the Steppe (Mallory and Mair 2000: 237). Therefore, we are able to trace the possible route of the entrance of these immigrants into the Tarim Basin from the Steppe, as indicated in Chapter 2 (concerning the route of the horse). Unlike the situation in other parts of Eurasia, these immigrants did not meet any resistance in the Tarim Basin, nor did they contend with native inhabitants there. Meanwhile, cultural and technological interaction might have occurred between them and the indigenous ethnic groups to the north, such as the Seima-Turbino complex, and to the east, the Qijia culture. It has been accepted widely that the Seima-Turbino complex possessed the technology of bronze metallurgy as well as horse-drawn chariotry (Anthony 2007: 443-448). Their bronze weapons might have been spread to the Steppe from Southeast Europe to the Mongolian plateau. Therefore, it is reasonable to surmise that the northern neighbors of the Shang Dynasty well could have been breeding the horse. The reference of the Mafang and the Duoma Qiang in the oracle bone inscriptions referred to in Chapter 3

¹⁷³ The preliminary report of the Gumugou site is Wang (1983). For the study of the mummies from biological perspective see Han (1986) and Zhang et al. (2006).

suggests that there were ethnic groups famous for their possession of the horse to the north and northwest of the East Asian Heartland.

Interestingly, the fate of these nomadic or semi-nomadic people differed from their contemporary (semi)-nomadic invaders — the Hittites, the Hyksos, the Kassites, and the Indo-Aryans in Mittani and the Indian subcontinent. From the later record of the oracle bone inscriptions, evidence indicates that the indigenous Shang Kingdom resisted them successfully (Shaughnessy 1988). As for the mid-2nd millennium period, due to the absence of both written documents and archaeological finds, most scholars agree that the horse had not been imported to the early Shang realm of the middle and lower Yellow River Valley by the end of the Erligang culture (ca. 1600-1400 BCE). In the late Shang capital Yinxu site, a culture dating from ca. 1300 BCE, however, horse and chariot burials were discovered in abundance. This fact demonstrates that the north(west)ern raiders who possessed horses and chariots might have encountered the Shang force some time at this time.

Recent research has demonstrated that copper and arsenic bronze metallurgy, with its origin in the ancient Near East, was probably transmitted from the Qijia culture in northwest China to the Erlitou culture, the predecessor of Erligang and Yinxu sites (Li 2005). Not coincidentally, archaeologists have found numerous domestic horses in the Qijia sites. In view of the geographical proximity of the Qijia culture to the possible origin of the Qiang, the possible horse provider dwelling to the west of the Shang dominion, it is conceivable that the Qiang might have acquired

horses from the Qijia people.

Traditionally it was believed that the Qiang were one of the most formidable enemies of the Shang Kingdom.¹⁷⁴ Yet as I argued in the previous chapters, the Qiang were probably also a main source of the royal horses and chariots of the Shang. Military and commercial interaction between the Shang and the north(west)ern people might be the common means by which the horse entered the East Asian heartland. This situation differs markedly from the Near East, Greece and the subcontinent, whereas it is somewhat akin to the case of the immigration of the Hyksos in Egypt.

Unlike the conventional view based on the works of Manetho (fl. 3 c. BCE) who claimed that the Hyksos subdued the Nile Delta by armed invasion, recent studies by Janine Bourriau suggested that the influx of these enigmatic Asian people was peaceful (Bourriau 1997). If it were true that they brought the horse to Lower Egypt, the Egyptians learned horse breeding immediately, and the horse was acquired by the Theban rulers in Upper Egypt and even Nubia (Fairservis 1962: 124-126).

A similar pattern of acquiring horse breeding and chariot driving happened in the Far East, as the Duoma Qiang and the Mafang moved into the mid-Yellow River Valley and confronted the Shang. We may surmise that the Shang Kingdom had had certain contacts with these immigrants who had carried bronze metallurgy to the Erlitou and Erligang culture, the precursors of the late Shang culture as represented by

¹⁷⁴ According to the oracle bone records, Qiang captives were often used by the Shang as human sacrifice. (Yao 1979) It is often argued that the Qiang is related to the Xia Dynasty and its founder Yu 禹 (Chen 1988: 282; Xu 1992), and the Xia Dynasty, overthrown by the Shang leader Tang 湯, is considered to be hostile to the Shang.

the Yinxu site.

The reason for the similar situation in China and Egypt was apparent: the Shang kings and the Theban pharaohs¹⁷⁵ could stabilize their domination over a large part of their territories. In China, the Shang royal court controlled not only the mid-lower Yellow River Valley, but also the mid-Yangtze River Valley, where they traded with local tribes and formed fortified cities there with local elements, such as the sites as early as the Erligang period: Panlongcheng 盤龍城 and Wucheng 吳城.¹⁷⁶ In Egypt, the Thebes government traded with the Nubians and across the Red Sea with the Arabs, from whom the Egyptians gained many benefits. In contrast, from Greece to India, the mid-latitude Eurasian civilizations lacked the strategic depth of the Far East and Egypt. Moreover, before facing the horse-powered invaders from the Steppe, the pre-Greeks, the Hattians, the Hurrians, the Babylonians and the Indus people all fell into an anarchic situation. Such a curious coincidence led to the overlordship of the immigrants in those areas, but in Egypt and China, indigenous rulers successfully defused the potential threats from barbarians. King Ahmose I (r. 1550-1525 BCE) expelled the Hyksos chiefs and established the mighty 18th Dynasty, which is later referred to as the Egyptian Empire (1550-1078 BCE). At almost the same time, the Shang Dynasty China overran the East Asian heartland. During the mid-2nd millennium BCE, the stimulus of a nomadic wave swept across most of the Eurasian

¹⁷⁵ It should be noted that the title “Pharaoh”, from Middle Egyptian *pr-ʿ3* “great house, i.e. the royal palace”, was only first used in the reign of Akhnaten (r. ca. 1353-1336 BCE) of the New Kingdom (Griffith 1898, 38, 17), some two centuries later than the end of the Hyksos 15th Dynasty. However, “pharaoh” has been a common appellation for the Egyptian kings from the Greco-Roman period onwards.

¹⁷⁶ For a comprehensive discussion about Panlongcheng see Liu and Chen (2012: 285-288); for Wucheng see Liu and Chen (2012: 288-372).

supercontinent, but finally ended as it reached the most stable polities of the West and the East: Egypt and China.

Nevertheless, the acceptance of horse and chariot in Egypt and Shang China was totally different. As early as around 1457 BCE, Thutmose III (r. 1479-1425 BCE) launched the famous Battle of Meggido with about 1,000 war chariots (Redford 2003: 206-209); in the 1274 BCE Battle of Kadesh, Ramses II (r. 1279-1213 BC) deployed no less than 2,000 war chariots in his four corps against the Hittites (Healy 1993). In sharp contrast, the Shang kings only used the horse-drawn chariots for hunting, ritual, and possibly, commanding. Therefore in the 11th century BCE when the Zhou, a multi-generational ally of the Qiang tribe and a former vassal of the Shang, revolted from the Wei River Valley with 300 war chariots and infantry, the Shang troops deployed at Muye 牧野 could not defend against them and the Shang capital was soon sacked.¹⁷⁷ This later conquest by the mighty horsepower opened a new epoch in Chinese history, when the Zhou road system was developed to adapt to the horse-drawn vehicles, a symbol for the subsequent age.

B). The horse and the wheel in the Axial Age

Karl Jaspers' (1953) concept of an Axial Age refers to a great era when similar revolutionary thinking appeared along a belt of the mid-latitude civilizations. Looking from the eastern part of the Eurasian supercontinent, we can find Confucius, Laozi

¹⁷⁷ A detailed record of this battle is found in *Shi ji* 3, 108; 4, 122-124.

and other great thinkers of China, the so-called “Hundreds of Schools,” the Gautama Buddha and Mahavira who established Buddhism and Jainism respectively in India; Zoroaster who comprehensively reformed the ancient religion of the Iranians; Prophets Elijah, Isaiah and Jeremiah also lived in Canaan in this age; and finally, Homer, Socrates, Plato and Aristotle brought brilliant philosophy to Greece. This age is considered as unique, and perhaps only the Enlightenment Age can parallel it in human history.

The advent of the Axial Age was not accidental. After surveying materials about the horse and horse-powered vehicle, I reach the conclusion that the horse and its power greatly motivated the development of human thoughts in the Axial Age.

Let us briefly look at the situation in China. In the Western Zhou period, the road system for horse-drawn vehicles was constructed. In the later Spring and Autumn era, scholars such as Confucius travelled by horse-drawn carts around the Central Plains where they propagated their thoughts. As has been discussed above, at that time the horse was adopted as a vital example in works such as the *Daode Jing*, the *Analects* and the *Gongsun Longzi*. In the Warring States period, famous literary works such as the *Xunzi* and the *Han Feizi* documented the pragmatic use of the horse.

If we turn to India at the time of Brahmanism when Buddhism and Jainism just were established, we can see the importance of the horse and the wheel as in the period of Indo-Aryan migration. Horse sacrifice, the *asvamedha*, widely considered to be a Proto-Indo-European ritual, was one of the most important rituals of the Vedic

religion (Fuchs 1996). A famous Hindu metaphor, *Ratha Kalpana* or “chariot image” first used in the *Katha Upanishad* (Sanskrit *Kāṭhapaniṣad*) on which the great philosopher Shankara (788-820 CE) commented, identifies the human body with the chariot; with the *Ātman*¹⁷⁸ is the charioteer, the mind is the reins, and the senses are the horses (Max Müller 2000: 3-16).

In the mid-first millennium BCE, the new religious tradition, the Śramana movement as represented by Buddhism and Jainism, adopted the wheel as the symbol of the *dharma*, the path to enlightenment. Interestingly, the first Chinese Buddhist temple, built by Indian monks in Luoyang during the Later Han Dynasty (25-220 CE) in 68 CE, Kaśyapamatanga 攝摩騰 and Dharmaratna 竺法蘭, was named Baima Si 白馬寺 “Temple of the White Horse”.¹⁷⁹

The Iranians were thought to be later than the Indo-Aryans in the migration to the south from their common homeland in western Siberia. By the early first millennium BCE, Iranian people such as Medes, Persians, Bactrians and Parthians gradually moved into the Iranian plateau.¹⁸⁰ Like the Indo-Aryans, they had possessed herds of domestic horses and war chariots by the time of their movement southwards.

After the immigration and settlement, the Iranian tribes spread from Transoxiana

¹⁷⁸ According to the Hindu tradition, *Ātman* means “Self”, derived from the Proto-Indo European root **ēt-men* (to breathe).

¹⁷⁹ The biographies of Kaśyapamatanga and Dharmaratna were first recorded in the *Gaoseng zhuan* 高僧傳 (written by Huijiao 慧皎, 497-554 CE), compiled in the *Taishō Tripitaka*, Vol. 50, No. 2059, *juan* 1, 322c-323a. The appearance of a white horse in the biographies is viewed as an auspicious omen that is believed to be the reason why Emperor Mingdi of the Later Han 漢明帝 (r. 57-75 CE) decided to build the first Buddhist temple in the Han realm.

¹⁸⁰ Encyclopaedia Iranica, online edition by R. N. Frye, Dec. 15, 2004. <http://www.iranicaonline.org/articles/iran-v1-peoples-survey>, accessed Dec. 10, 2012.

to the Iranian plateau, forming a situation like the feudal states in Warring States China. After centuries of internecine battling as well as conflicts from natives of Southwest Asia, one of the local warlords, Cyrus the Great of Persia (r. 559-530 BCE), annexed several other states and built the largest single polity ever — the Achaemenid Empire.

The Achaemenid rulers might have accepted the newly developed religion of Zoroastrianism, which is believed to be based on the teaching of the prophet Zoroaster. Eschatologically, Zoroastrianism is monotheistic, with Ahura Mazdā the uncreated God and source of all goodness (although cosmologically this religion is dualistic).

Despite the disagreement among the scholars as to whether the Achaemenid kings accepted Zoroastrianism, most evidence suggests that the kings were worshipers of Ahura Mazdā. It is interesting, however, that the Achaemenid kings did not draw or sculpt any representations of Ahura Mazdā – The only exception is the custom of the reliefs for every king—from Cyrus the Great to Darius III (r. 336-330 BCE) whose empire was overthrown by Alexander the Great (r. 336-323 BCE) —to have an empty chariot drawn by white horses to invoke Ahura Mazdā to accompany the army on the battlefield (Boyce 1983: 686). It is not uncommon that the horses and chariot were depicted as the divine seats of the gods in world religions, especially in the Indo-European religions.

Beyond this Indo-European tradition, we also find a similar scene in the Old Testament. As one of the most prominent prophets, Elijah was lifted up in a

whirlwind with a chariot and horses of fire (II Kings 2:10-12); he was the only prophet who ascended to heaven alive. This may indicate that the horse and chariot as a means of divine communication has been symbolized within the ancient Hebrews. Actually, at the time of the prophets, Israel had become a country full of war-horses (Isaiah 2:7; also cf. II Kings 6-7).

Now let us turn to the Greeks. The ancient Greeks loved horses so much that they regarded horse races as the most prestigious event in the Panhellenic Games. This is based on the long tradition of horsemanship; horse racing first was held as an event in the Olympic Games in 648 BCE. As the Panhellenic Games originally were ceremonial, it is possible to understand these events were not merely games but also had symbolic meaning.

One of the most influential philosophical topics, Plato's Chariot Allegory accounted in his dialogue *Phaedrus* (246a-254e), shows great similarity to Yama's teaching in the *Katha Upanishad*, which first introduced the spiritual exercise, *Yoga*, originally meaning "harnessing." This Indo-Greek allegory may indicate that the Greeks and the Indians shared the Indo-European parable of the chariot driven by a pair of horses.

C). The horse and the Age of Empires

In the first millennium BCE, not only religious cultures and philosophical thoughts emerged, but also the organizational form of states gradually changed.

Because of the new technology of horseback riding, regional superpowers could now reach previously remote mountainous areas, so as to establish trans-regional military hegemonies, the so-called empires.

The first such trans-regional empire was Assyria, originally a Mesopotamian state under the overlordship of Babylonia and Mitanni. In the latter half of the 2nd millennium BCE, Assyria expanded its dominion by its great force of chariotry and infantry. Beginning in the 9th century BCE in the reign of Neo-Assyrian king Tukulti Ninurta II (r. 891-884 BCE), cavalry use of the Assyrian army was first recorded (Healy 1991: 20).

Long after its initial unification of Mesopotamia during the Middle Assyrian Empire in the 2nd millennium BCE, the Assyrians first extended their power outside the Mesopotamian plain during the reign of Tukulti Ninurta II's son Ashurnasirpal II (r. 883–859 BCE). During his reign, the Assyrian army generally was constituted of infantry, heavy and light cavalry, as well as chariots (Healy 1991: 10). Utilizing the advantage of the cavalry, Ashurnasirpal II crossed the Taurus Mountain to the north and conquered the Hittites, and he also passed Mount Hermon to the west and conquered the Phoenicians and Canaanites in modern Lebanon.

After centuries of warfare with surrounding nations and internecine wars, Tiglath-Pileser III (r. 745-727 BCE) assumed the throne of Assyria. Along with his famous civic reforms, he built up a formidable cavalry and chariot troops made up of native Assyrians, and his infantry was composed of a small proportion of Assyrians

and many employed foreign forces. Beginning with his rule, the Neo-Assyrian Empire became one of the largest trans-regional hegemonies of the world. At its height, Assyria unified Mesopotamia, occupied Egypt, Canaan, the Levant, southern Asia Minor, Armenia and Elam, and received tribute from Phrygia and other small states around the Fertile Crescent. The rise and military success of the Neo-Assyrian Empire profited from the adoption of cavalry and heavy chariots that could mount four warriors. Whereas the later enhanced the impact force of the Assyrian army in the planar areas, the former provided versatility for the combat units of the Assyrian army in mountainous areas.

Perhaps Assyria is the first empire that utilized horsemanship to establish its supremacy. Yet, it is just the first case when the horse was so important to an empire. The Persian king Cyrus the Great and his son and heir Cambyses II (r. 529-522 BCE) established the first state that stretch from Inner Asia to Africa based on the famous Nisean breed stallions native to the Zagros Mountains (Davis 2007: 16-48). Despite their renowned heavy cavalry unit historically known as the cataphract, in the realm of communication, the first empire of Persia also relied mostly upon horsemanship.

King Darius I (r. 522-486 BCE) ruled the Achaemenid Empire at its peak by his campaigns in the Balkans and against the Scythians. During his reign, the Persian Empire became the first empire that extended from Asia to both Europe and Africa. In order to facilitate communication in his mighty empire, Darius restored and rebuilt the road from his capital Susa (in present day southwest Iran) to Sardis (in Asian Minor

on the Aegean coast),¹⁸¹ and actually built a state-wide imperial road system known as the Royal Road.¹⁸² This road system is now believed to be the extension of the former Assyrian road system for horses and vehicles (Beitzel 1991: 35-57; Bertman 2005: 254).

The main course of the Persian Royal Road stretched some 2,600 kilometers and mounted couriers could travel along it within seven days. They stopped and rested at post houses, then they could change to fresh new horses for the next part of postal service. This road system helped to unify the Iranians and the non-Iranians as they could communicate in a single empire. In wartime, local satraps could mobilize their troops easily using this road system for defending any part of the empire.

Compared with the Zhou royal road system, the Persian Royal Road was much more useful in military operations because of its ability to aid in wartime mobilization recorded in various ancient sources.¹⁸³ In China, only the imperial road system of the Qin Empire could parallel the Persian Royal Road, but it was some 200 years later.

Besides, the Persian Nisean horses provided the empire with superior warhorses that could be armored as cataphracts or carry mounted archers. In the subsequent conquest of Alexander the Great, his acquisition of Nisean warhorses in the Battles of Issus (333 BCE) and Gaugamela (331 BCE) greatly enhanced the Macedonian forces for the later campaigns in Bactria and Sogdiana where the semi-nomadic Iranians

¹⁸¹ Herodotus, *Histories*, V: 52-53.

¹⁸² This is not only attested in Herodotus' description but also in biblical works such as *Esther* (3:13) and frequently referred to in the *Persepolis Fortification Tablets* published by Richard T. Hallock in 1969. See Silverstein (2007: 12-17) for a detailed discussion.

¹⁸³ For a list of the sources and a comprehensive history of the Persian Royal Road, see Briant (2002: 357-387).

ferociously resisted them. Yet, Alexander still managed to eliminate resistance and establish Greek colonies along the Persian roads. Eventually, he marched to the Punjab, defeated the local monarch Porus (340-317 BCE) despite his dreadful weapon of war elephants. The tactics of joint deployment of cavalry and infantry in the Macedonian army became one of the most important reasons for the Alexandrian conquest of the Persian Empire.¹⁸⁴

From the above facts, we are able to draw a conclusion about horsemanship and the rise of empires in the first millennium BCE. Beginning during the reign of Tiglath Pileser III, mounted warriors became an indispensable part of the Neo-Assyrian army. The rise of equestrian combat was highly boosted by the Median raiders from the Iranian plateau who at times assisted the Assyrian expansion. The Medians eventually ended the Assyrian hegemony by capturing Nineveh, the Assyrian capital in 612 BCE. This remarkable event paved the road for the establishment of the new trans-regional Achaemenid Empire.

It was on the Achaemenid Royal Road that horse-drawn caravans starting from Bactria (and in the medieval age,¹⁸⁵ Sogdiana) initiated the land trade route between Central Asia and the Mediterranean Levant. Later, it connected the Greek kingdoms in Bactria, the Seleucid kingdom in Mesopotamia and the Iranian plateau, and other major Hellenistic kingdoms in the Eastern Mediterranean world. This road system

¹⁸⁴ See Ashley (2004) and Lendon (2006) for historical and strategical analyses of the Macedonian military force.

¹⁸⁵ The transition of the trade route from center Bactria as Ptolemy's (97-168 CE) *Geography* (VI, 11) reported to Sogdiana happened some time between the fall of the Kushans in mid-third century and the rise of the Göktürks in mid-sixth century, the period when fewest documentary sources are present in the history of Central Asia. The invasion of the Hunnic people, represented by the Kidarites and the Hephthalites (holding sway in Bactria and its environs in fourth and fifth centuries, respectively), is perhaps the cause of Bactria's decline. (Wan forthcoming)

later became the western half of the Silk Road, and vastly enhanced a great period of the mid-latitude Eurasian supercontinent following immediately upon the Axial Age, the Age of Empire, when Rome, Parthia, the Kushan Empire and China, i.e. the Han Empire, interacted and competed with one another, relying mainly upon the horse and the wheel — a legacy that was initially introduced from the high-latitude Steppe.

Chapter 7: Conclusion

Along with the introduction of bronze metallurgy, the emergence of writing, and the circulation of currency, the advent and exploitation of the domesticated horse was one of the major events at the dawn of Chinese civilization,. In the Bronze Age and early Iron Age, the Yellow River Valley was characterized by the development of the earliest dynastic states, Shang and Zhou, which were formed by a long-established system of schematic polity structure (Campbell 2009: 837). At the beginning of the Yinxu period, the late Shang court acquired precious resources through long-distance exchange, and in particular via military expeditions and the tributary system.

After the initial acquisition of horses and chariots from the North and Northwestern peoples, the Shang court established its own horse-drawn chariot culture, and it also is attested in some “peripheral” Shang cultural sites in Shandong, Hebei and Shaanxi. The Qiaobei site is considered by some archaeologists as a local ally of the Shang, and apparently its elite culture is Shang-style (Liu and Chen 2012: 384).

Compared with the highly monopolized Shang equestrian culture, the widespread exploitation of the horse in the Zhou dynasty is manifested in archaeological remains as well as literary records. The classical literature preserved and rearranged by the Han scholars clearly exhibits the importance of the horse in different genres: the *Shi jing*, the *Zhou li* and the doctrines attributed to Confucian masters. The horse also

serves as a crucial topic in Chinese mythology and cosmology, in part derived from its interrelations with the Northern people. Most Chinese documents on military thought and chronicles of this time mention chariot and cavalry battles, which gave rise to horse breeding for common people, a distinct feature of Chinese history that catalyzed the eventual disorganization of the Later Han dynasty.

Material culture of this time, marked by intensive use of funerary sacrificial horses, also reveals the widespread usage of the horse in rituals and elite life. Horse and chariot pits were a prominent feature in the extravagant graves of feudal lords in the Zhou dynasty. This is mirrored in the utilization of horses in daily life as ritual animals in ceremonial parades, on hunting and military expeditions, as well as for transportation and communication of the elite. These factors are evidence of the extraordinary status of the horse in both the life and afterlife of the elite. The correlation of the horse, and especially the horse-drawn chariot, with the underworld, indicated by the orientation of the horse head, confirms the special role the horse played in early Chinese mythology, which was in turn influenced by the pan-Eurasian tradition.

This dissertation does not detail the exhausting information of the horse in pre-imperial China, but rather provides an overview of the transition the horse brought into China in this period. Aiming at providing innovative ideas concerning the function of the horse in early historic China, I briefly reviewed current research and proposed my contribution to this topic in Chapter 1. Whereas previous studies

focus mainly on one field, I established my thesis on the studies of both literary and material evidence. In addition, I underscore the long-time influence of the domestic horse in several aspects of early Chinese society.

Chapter 2 is the most difficult and contentious part of this dissertation. Although there has been a consensus that the horse initially was domesticated on the Steppe, the time span and the mechanism of this process is still under dispute. In Chapter 2, I offer a brief history of the co-evolutionary process of the human domestication of animals, wherein the domestication of the horse played a prominent part. The horse not only served as a food source and working animal but is also associated with the migration and transportation of people, as well as transmission of information and new forms of warfare. I have demonstrated that the symbiosis of the horse and pastoralist people greatly facilitated contacts between the Steppe and China in the Bronze Age, and based on archaeological evidence, also provided a possible route for the arrival of the domestic horse in China. It should be noted that further information is needed to determine the degree of participation of the indigenous horse population in the process of domestication.

I have paid close attention to the excavated remains of the domestic horse, primarily as funerary sacrifice, in Chapter 3. Horses were arrayed beside elite graves, often with chariots, possibly as symbolic transportation of the dead to the underworld. In the context of public sacrifice such as sacrificial pits beneath ritual edifices, the horse was often the most important sacrificial animal and only was used in very

important ceremonies. By introducing various sites according to chronological order and geographical distribution, I have conducted a comprehensive review of horse burials in pre-imperial China based on archaeological reports. I have demonstrated that the development of institutionalized ritual practice in mid-late Western Zhou period encouraged the paramount use of horse and chariot burial. In the Spring and Autumn period, contending feudal states brought about massive slaughter of sacrificial horses, indicating that horse breeding had become prevalent during this time.

In Chapter 4, I focus on the human exploitation of the horse, which is a descriptive summary of civil and military applications of the horse in pre-imperial Chinese society. Primarily relying upon literary sources, I provide examples of the horse used for ritual sacrifice as mentioned in divination records, gift-bestowal accounts between the lord and the vassal, or between peer elites, and ancestral sacrifice. Additionally, the famous Tian Ji's chariot races, recounted as the first game of strategy, are analyzed in detail. Through this case, I explain the role that the horse played in the life of elite citizens in the Warring States. After a short discussion of the application of the horse in agriculture, I review the development of chariot warfare as evidenced in both excavated and transmitted texts. Lastly, I discussed the practice of horseback riding and the advent of cavalry in the Warring States period.

Chapter 5 opens with a section mainly concerning the interrelationship between the horse and man, with a history of horse breeding in pre-imperial China. While in

the Shang dynasty domestic horses were supplied largely by interactions with adjacent marauding peoples, the Western Zhou court developed a system of horse breeding for warfare and ritual display, attested in both archaeological material and classical literature, largely embodied in the *Zhou li*. Furthermore, the Zhou polity might have passed an important law promoting horse breeding among peasants, which in turn laid the foundation for the cavalry force of the Qin-Han Empire.

I also analyzed in detail legal documents regarding the administration of state-owned domestic horses among bamboo manuscripts of the Qin State in the Warring States period. In addition, I discussed the image of the horse in early Chinese mythology and religion, demonstrating its significance both as an object or a medium of worshipping. In the last sections of this chapter, I surveyed the horse described in philosophical treatises, works on physiognomy and veterinary manuals, and speeches attributed to influential thinkers, especially within the context of the often debated animal welfare.

Incorporating a macroscopic examination in Chapter 6, I have argued the relationship between the domestic horse and two important stages of development of the Chinese civilization. The first stage is the rapid expansion of the vassal states of the Western Zhou polity after its defeat of the Shang, marked by expeditions in horse-drawn chariots and facilitated by the Zhou road system, which became more elaborate during the Spring and Autumn period. The second stage, characterized by the widespread deployment of cavalry in Warring States polities, demonstrates the

equestrian force in the unification warfare of the Qin-Han Empire. At the end of this chapter, I tentatively propose a framework of cross-regional comparison between the Chinese equestrian tradition and contemporary horse breeding and exploitation in the Old World.

While many of the answers to questions in this dissertation remain inconclusive, the elaboration itself calls attention to the significance of equestrian elements in early Chinese civilization. Serving as a starting point of this interdisciplinary study, my thesis will be refined as further available information is acquired in the future. The foundation of this work enables me to argue that the symbiosis of humans and horses accelerates the elevation of social complexity in early China from the Bronze Age to early Iron Age.

APPENDIX: FIGURES

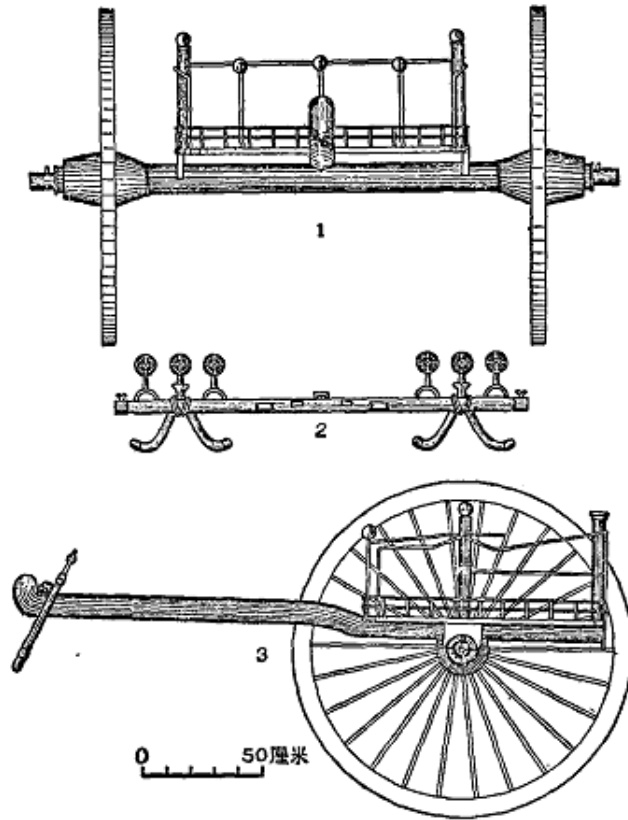


Fig. 1 Reconstruction of the chariot No. 1 at Liulige, Huixian, Henan Province (CASSIA 1956: 48)

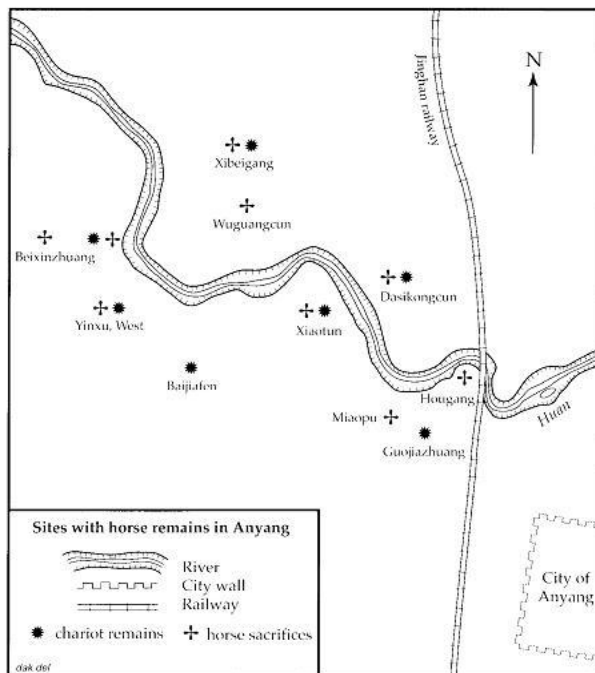


Fig. 2 Sites with horse remains in Anyang, the late Shang capital (Linduff 2003: 153)

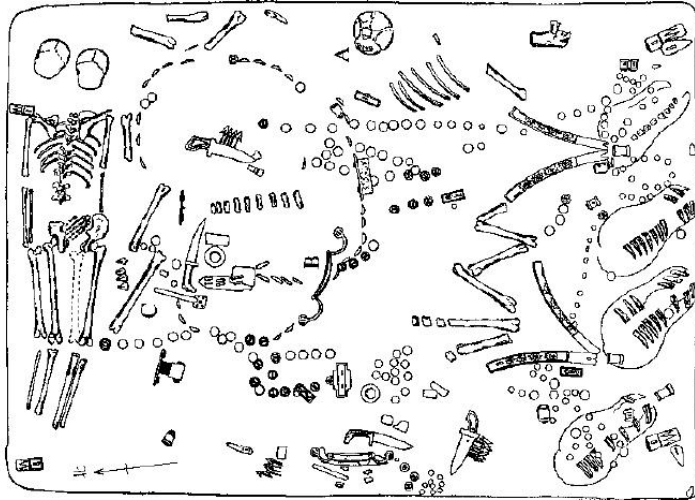


Fig. 3 Plan of Xiaotun M20, two double-horse chariots (Wu 2006: 22, 25)

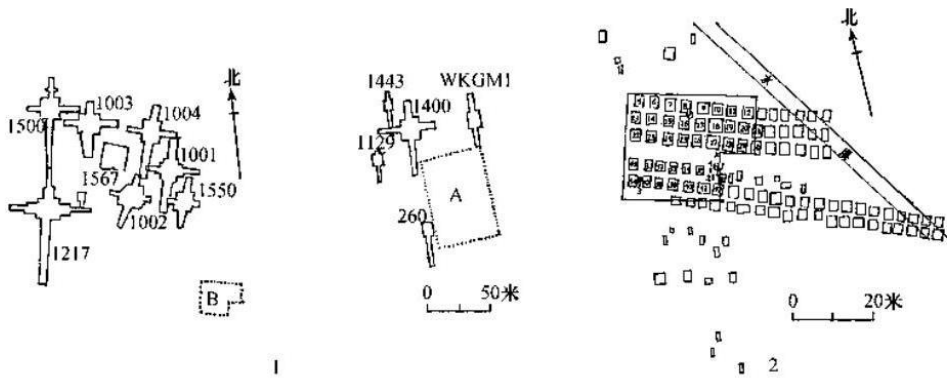


Fig. 4 Relative positions (left) and compositions (right) of sacrificial horse pits at Wuguancun Beidi (Wu 2009: 109)

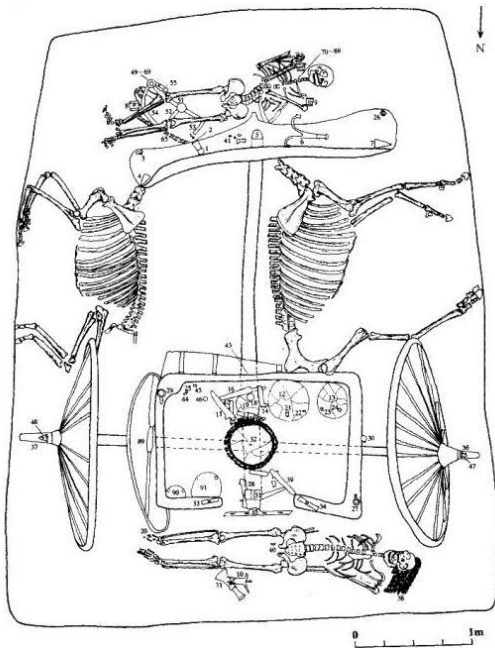


Fig. 5 Horse-and-chariot pit M41 at Qianzhangda, Shandong Province (CASSIA 2005: 128)

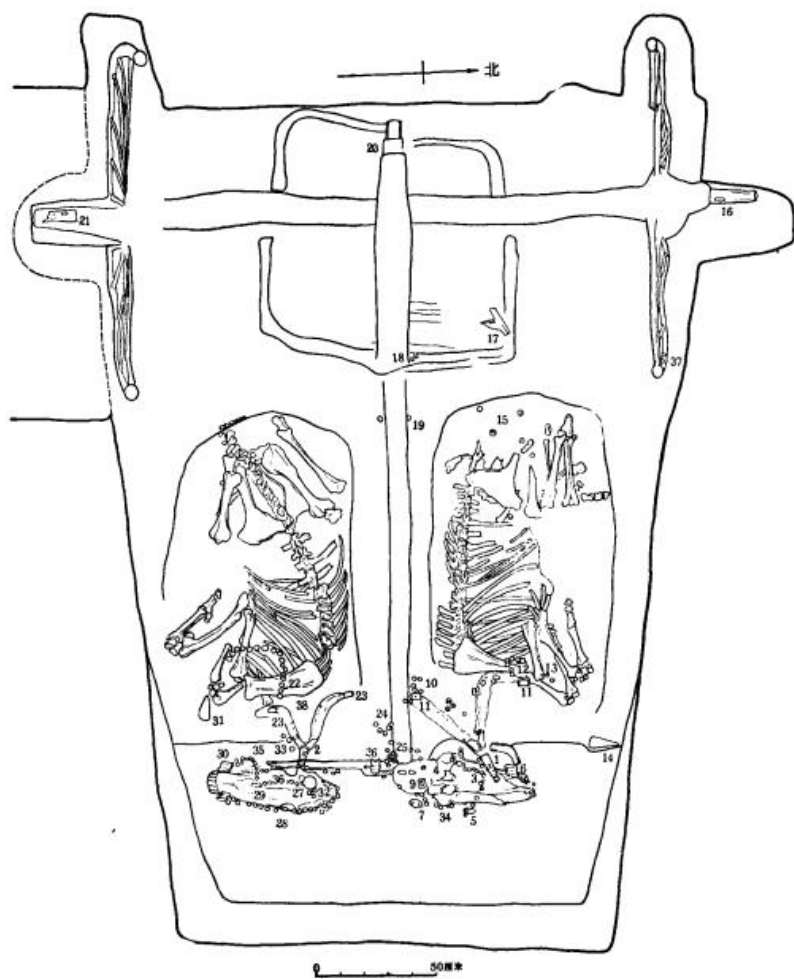


Fig. 6 Trapezoid horse-and-chariot pit No. 35 at Zhangjiapo site, Chang'an, Shaanxi (Fengxi Excavation Team 1980: 465)

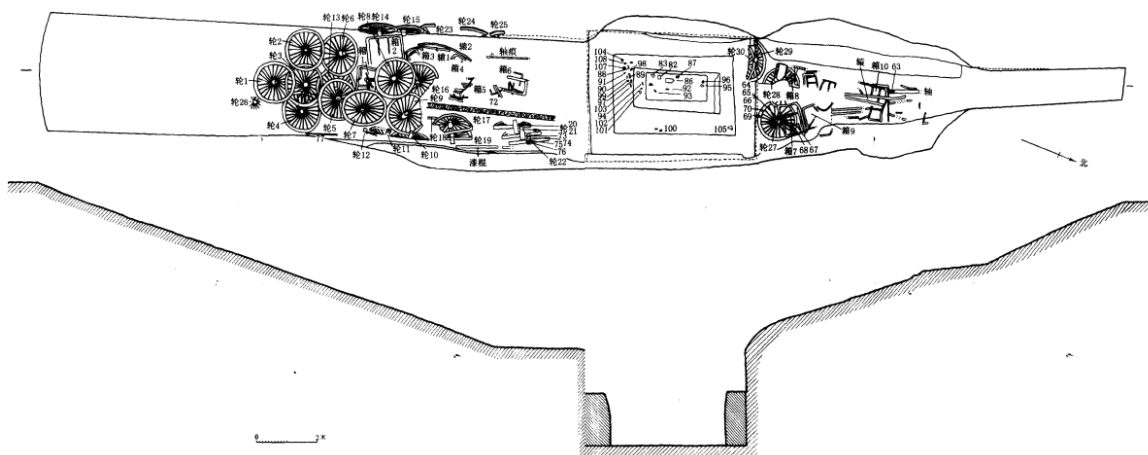


Fig. 7 Plan and sectional drawing of tomb M157 at Zhangjiapo site, Chang'an, Shaanxi (CASSIA 1999: 17)

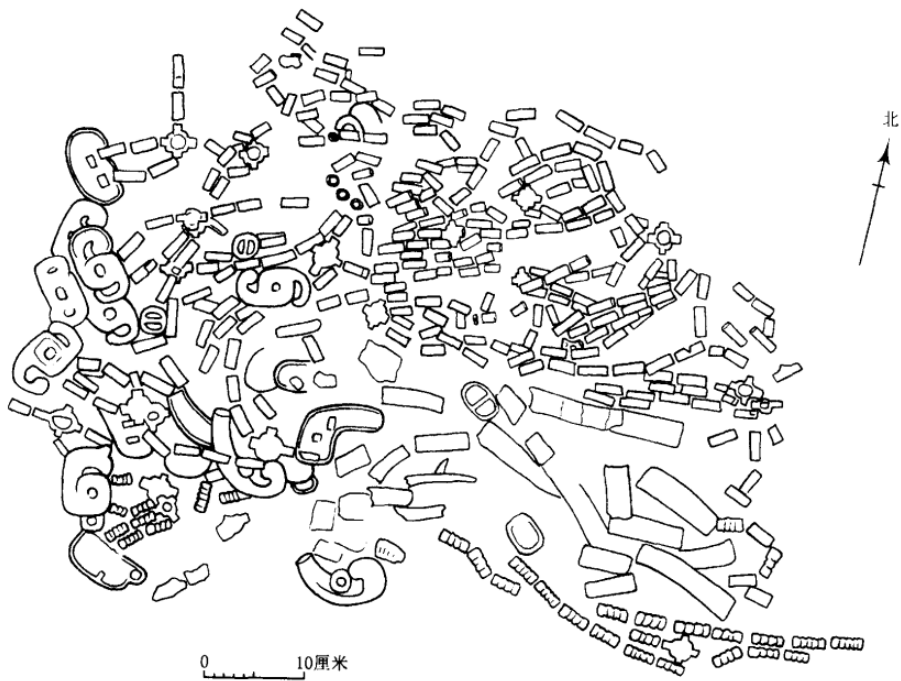


Fig. 8 Bronze horse fittings unearthed from the fillings in the tomb M170 at Zhangjiapo site, Chang'an, Shaanxi (CASSIA 1999: 35)

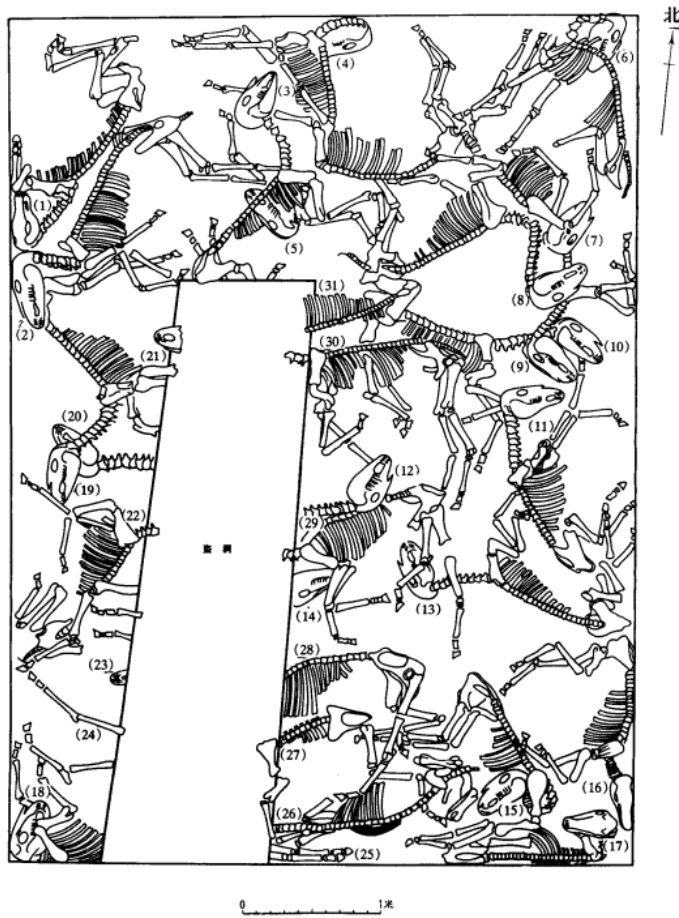


Fig. 9 First layer of horse pit MK107 at Beiyao site, Luoyang, Henan (LMAT 1999:334)

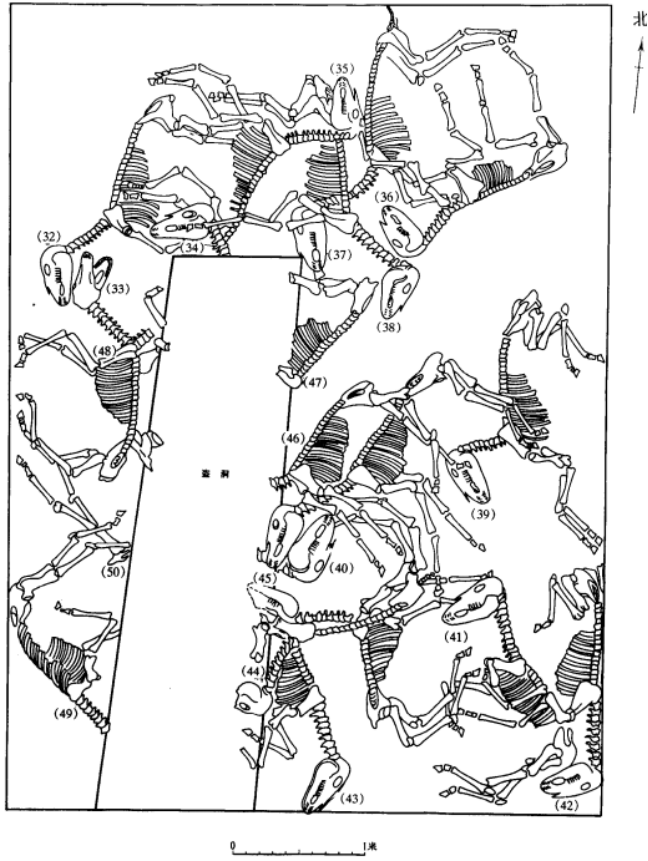


Fig. 10 Second layer of horse pit MK107 at Beiyao site, Luoyang, Henan (LMAT 1999:335)

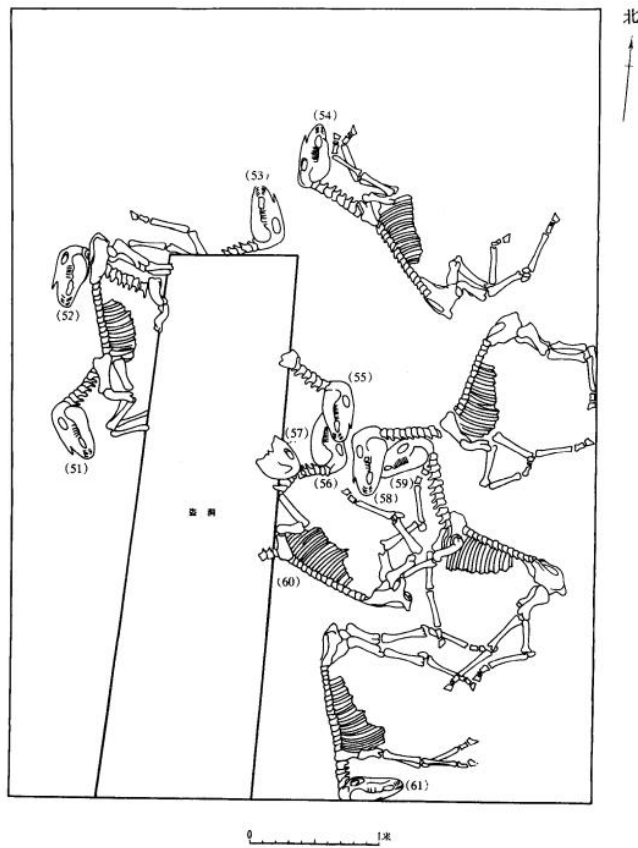


Fig. 11 Third layer of horse pit MK107 at Beiyao site, Luoyang, Henan (LMAT 1999:336)

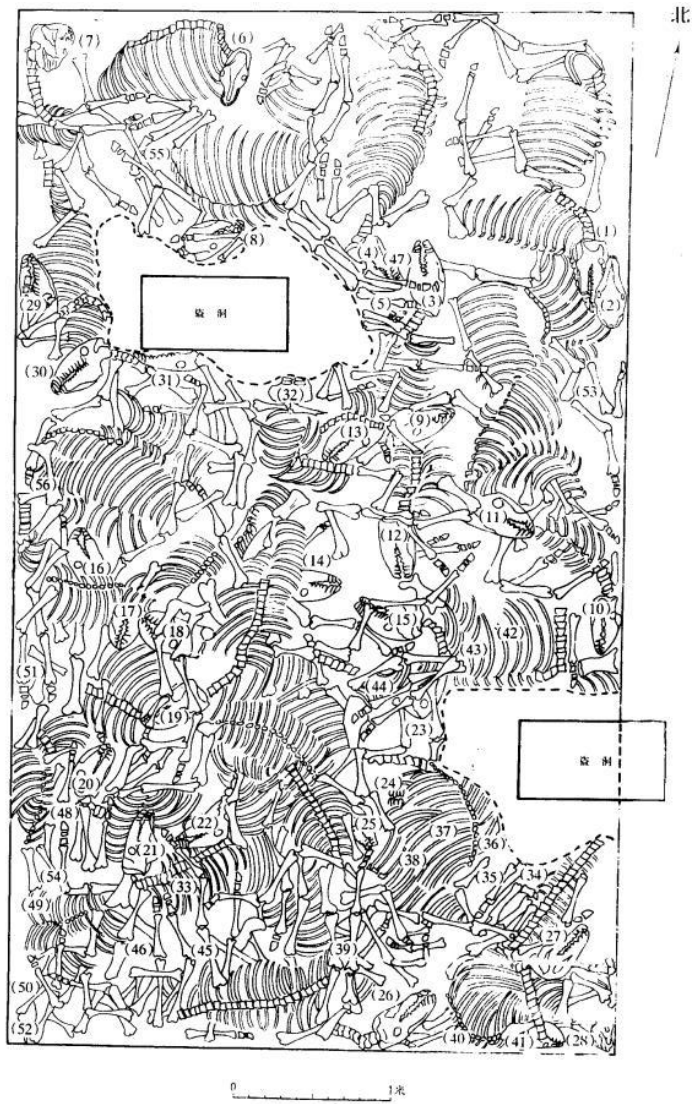


Fig. 12 Horse pit MK693 at Beiyao site, Luoyang, Henan (LMAT 1999:338)

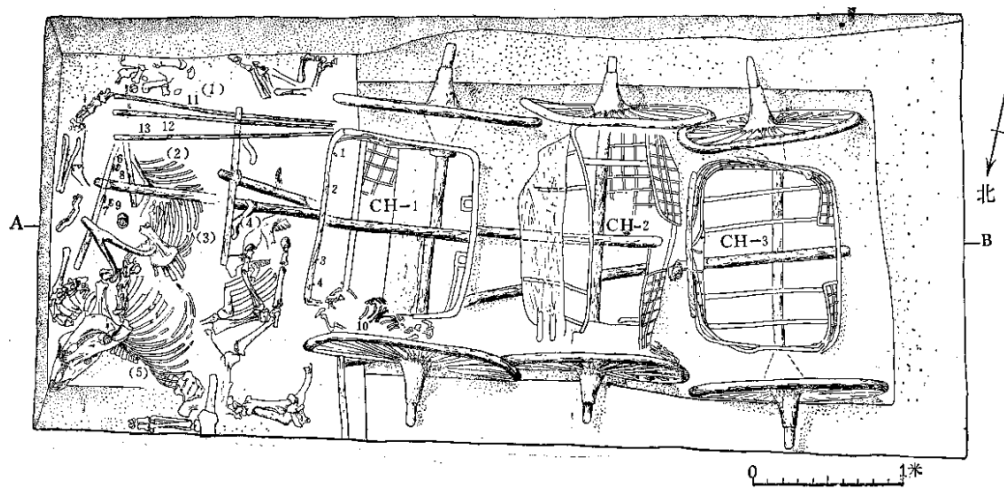


Fig. 13 Plan of horse-and-chariot pit No. 1 at Shangma Site, Houma, Shanxi (SPIA 1994: 240)

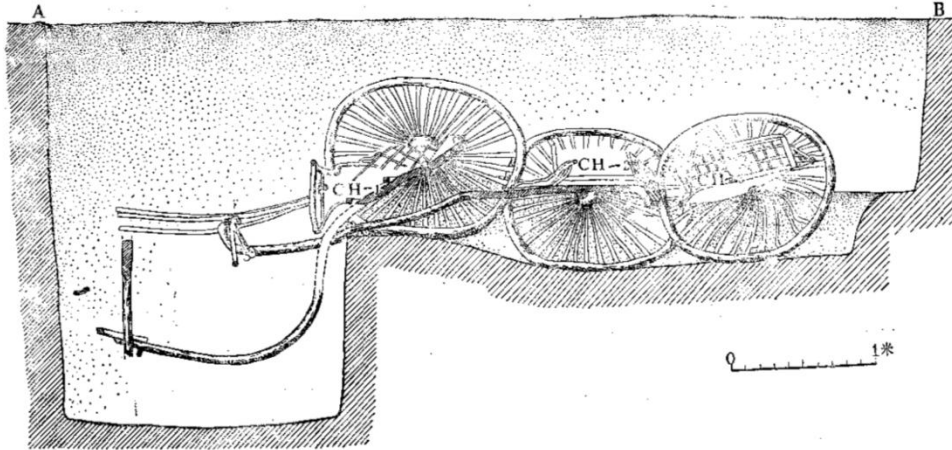


Fig. 14 Sectional drawing of horse-and-chariot pit No. 1 at Shangma Site (SPIA 1994: 241)

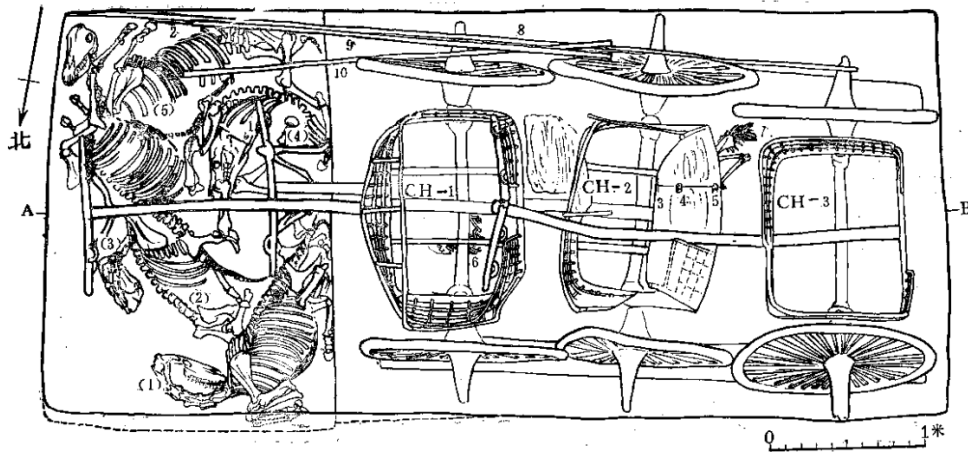


Fig. 15 Plan of horse-and-chariot pit No. 3 at Shangma Site (SPIA 1994: 251)

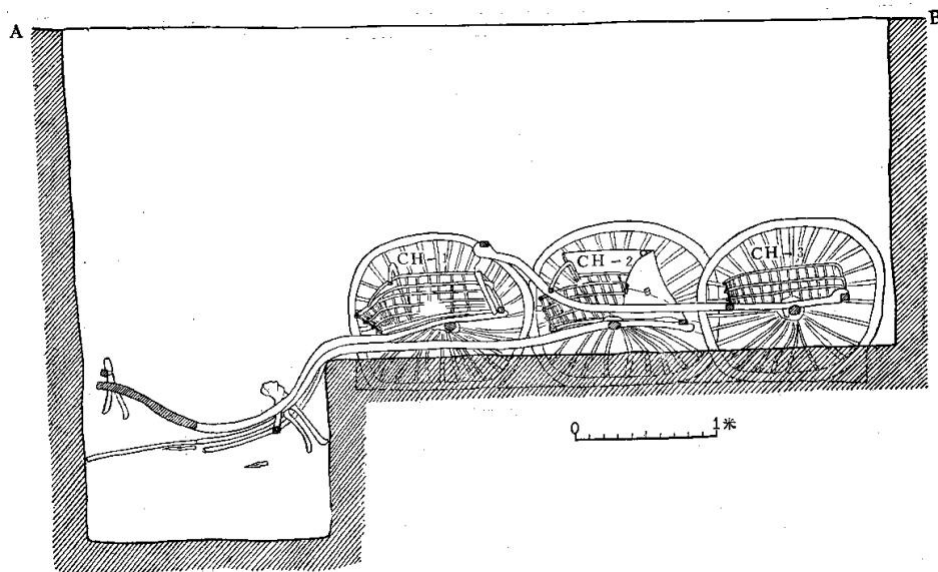


Fig. 16 Sectional drawing of horse-and-chariot pit No. 3 at Shangma Site (SPIA 1994: 252)

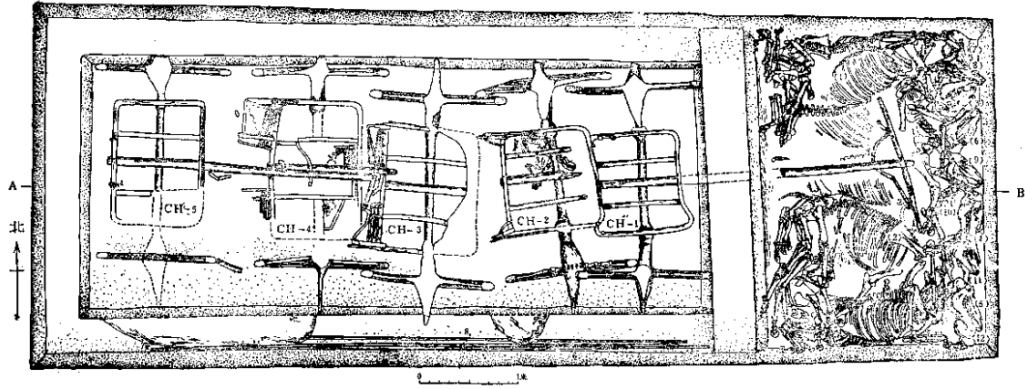


Fig. 17 Plan of horse-and-chariot pit No. 2 at Shangma Site (SPIA 1994: 246)

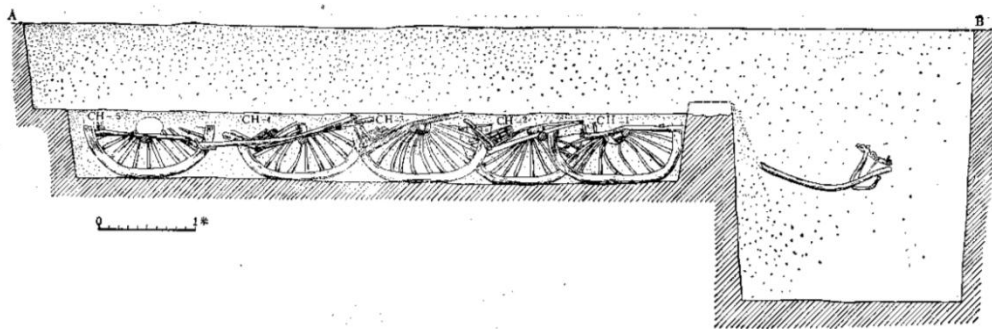


Fig. 18 Sectional drawing of horse-and-chariot pit No. 2 at Shangma Site (SPIA 1994: 247)

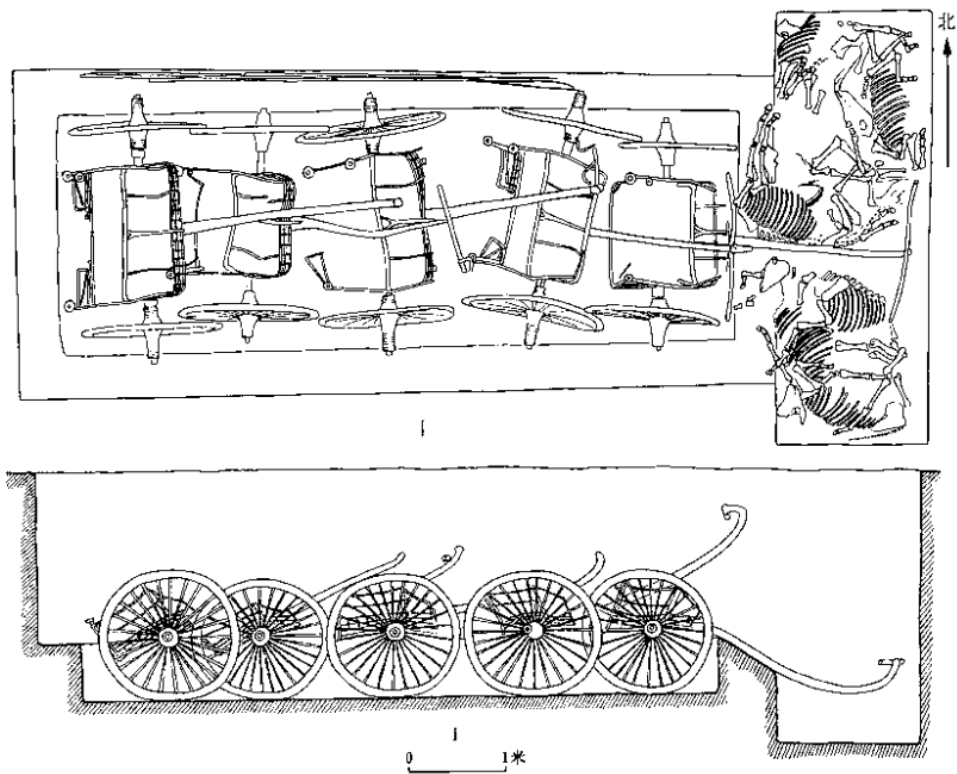


Fig. 19 Horse-and-chariot pit M1009 at Chengcun site, Linyi, Shanxi (CASSIA 2003: 165)

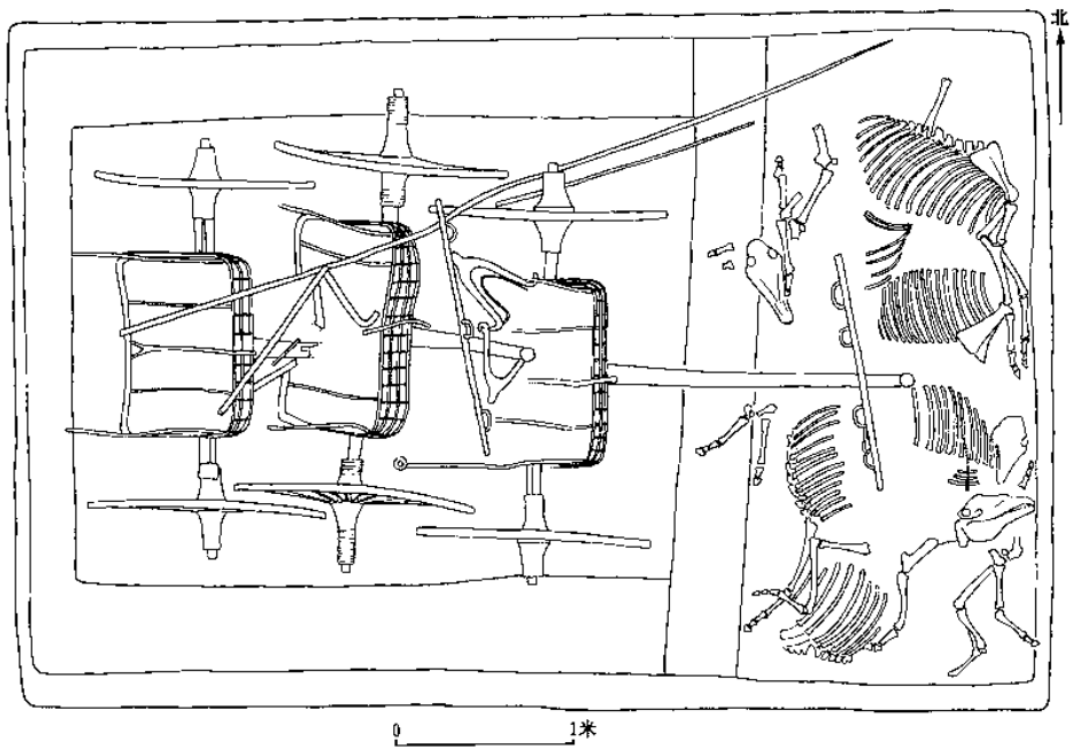


Fig. 20 Horse-and-chariot pit M1058 at Chengcun site, Linyi, Shanxi (CASSIA 2003: 175)

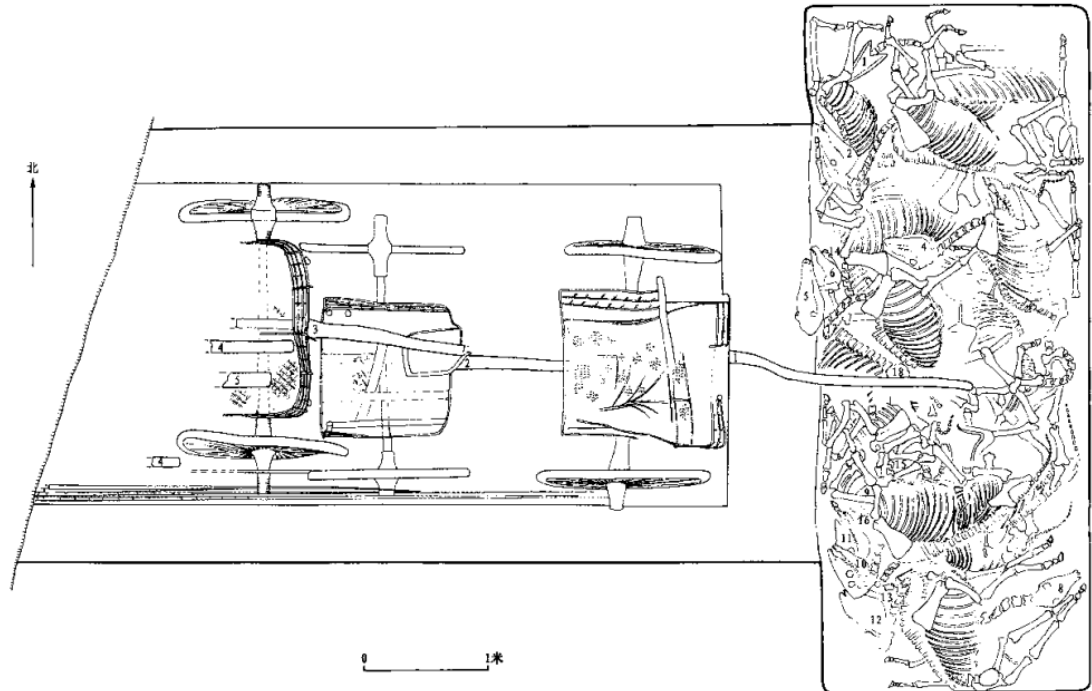


Fig. 21 Horse-and-chariot pit M0026 at Chengcun site, Linyi, Shanxi (CASSIA 2003: 185)



Fig. 22 Horse-and-chariot pit affiliated to the Tomb of Minister Zhao, Taiyuan, Shanxi (Tao et al. 1996: 161)



Fig. 23 Horse-and-chariot pit No. 1051 at Shangcunling site, Sanmenxia, Henan (CASSIA 1959: fig. 39)

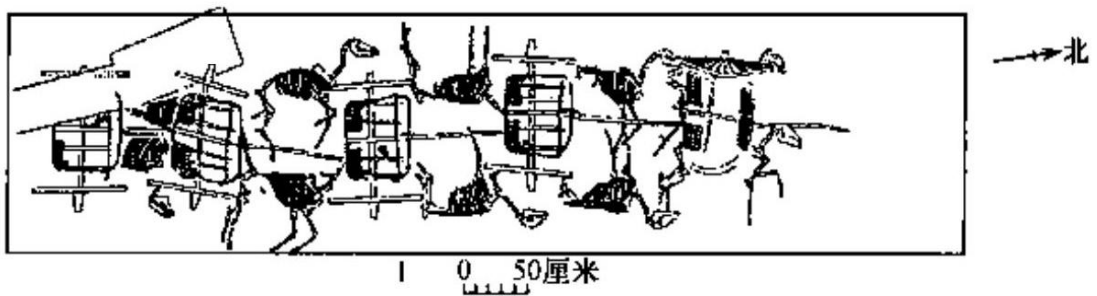


Fig. 24 Horse-and-chariot pit No. 1727 at Shangcunling site, Sanmenxia, Henan (CASSIA 1959: fig. 39)

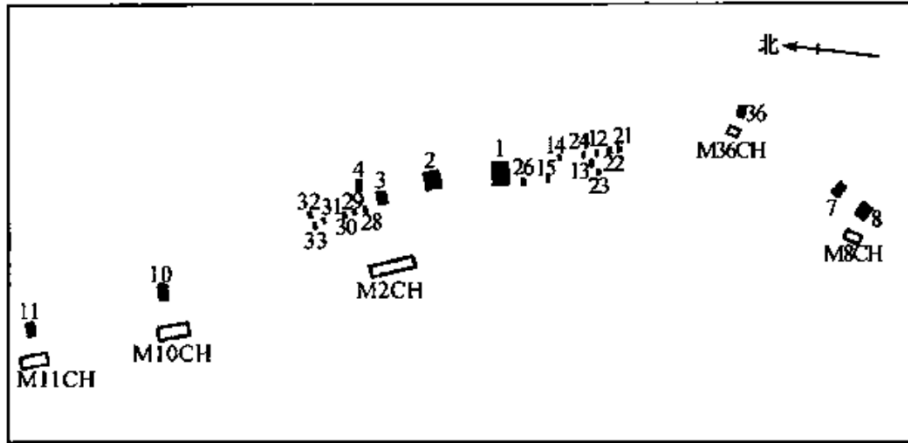


Fig. 25 Plan of Xiasi cemetery, Xichuan, Henan (HPIA 1991: 3)

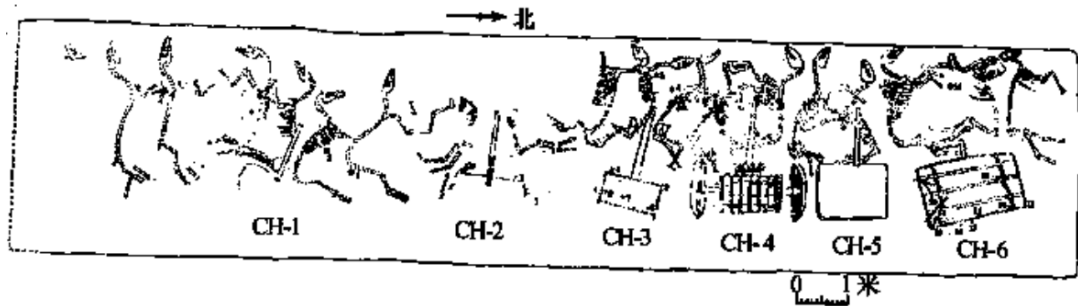


Fig. 26 Plan of horse-and-chariot pit M2CH at Xiasi cemetery, Xichuan, Henan (Wu 2009: 166)

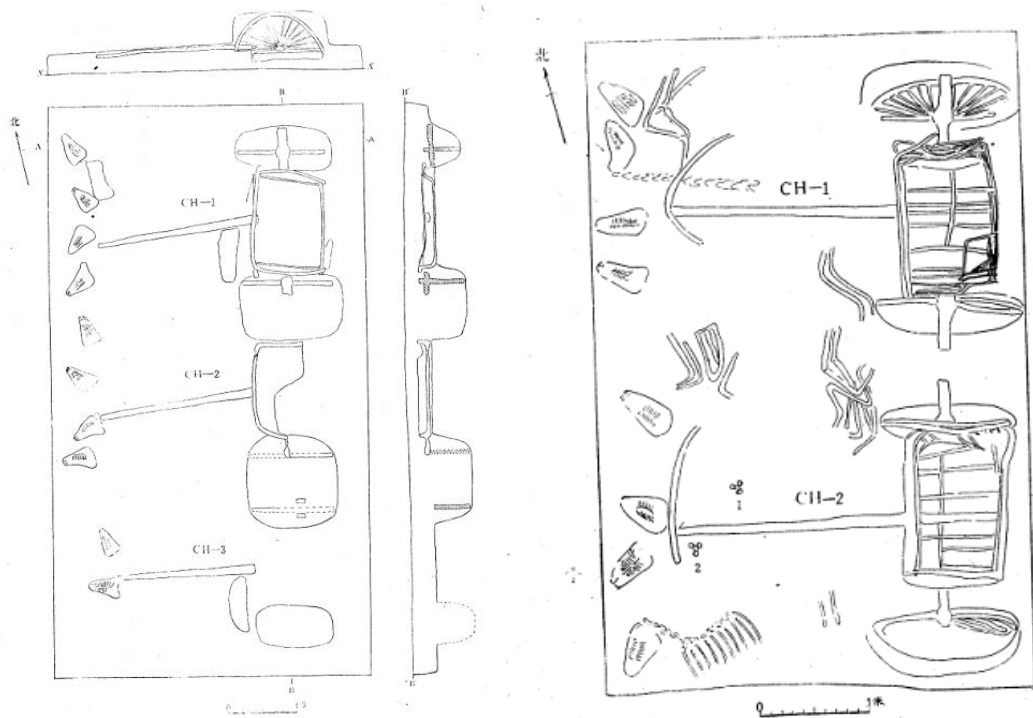


Fig. 27 Horse-and-chariot pits M8CH (left) and M36CH (right) at Xiasi site (HPIA 1991: 25, 48)

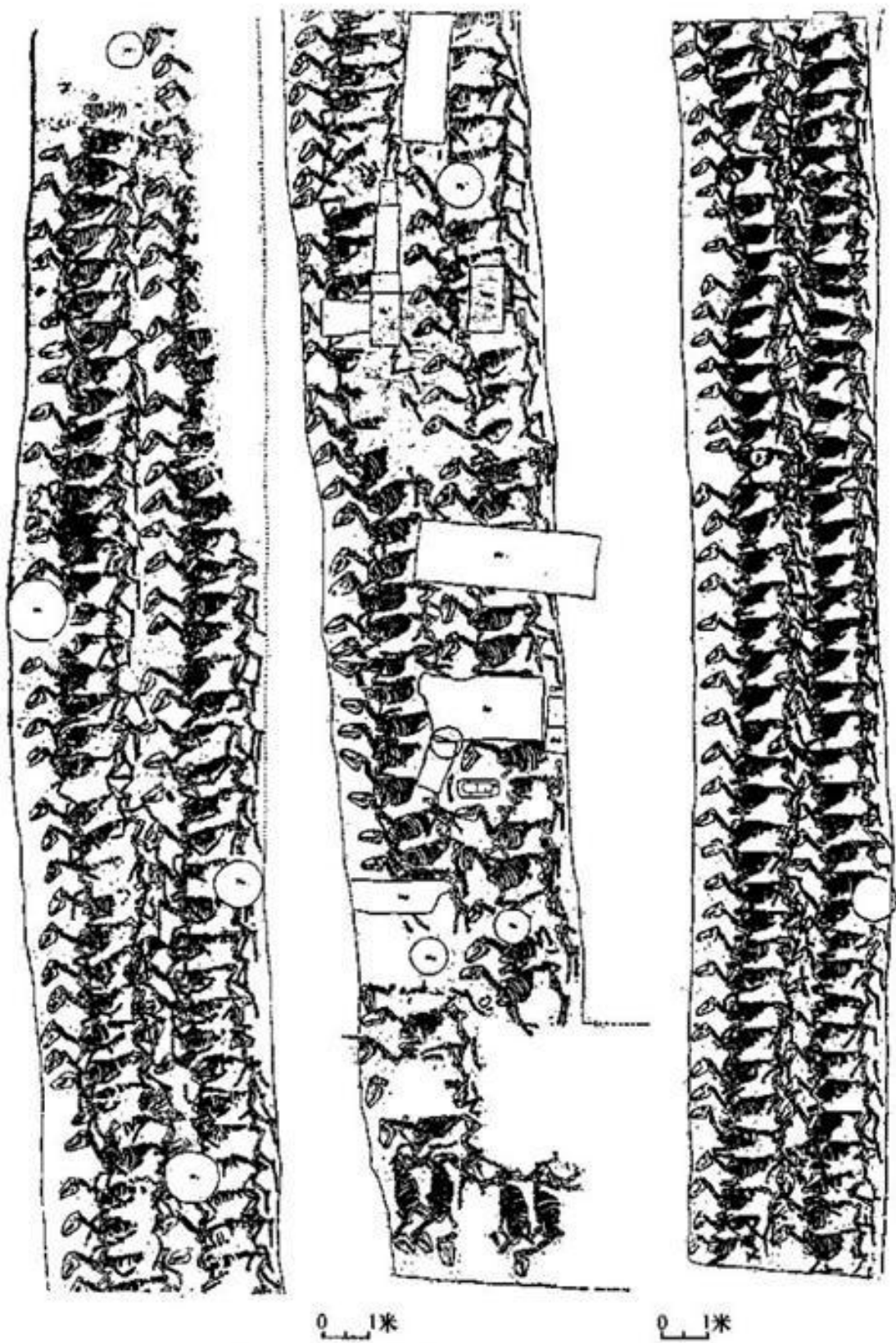


Fig. 28 Parts of horse burial at Tomb No.5 of the Former City of Linzi (Zhang and Luo 1984: 17)

Left and middle columns: Northern part of the pit; right column: West part of the pit

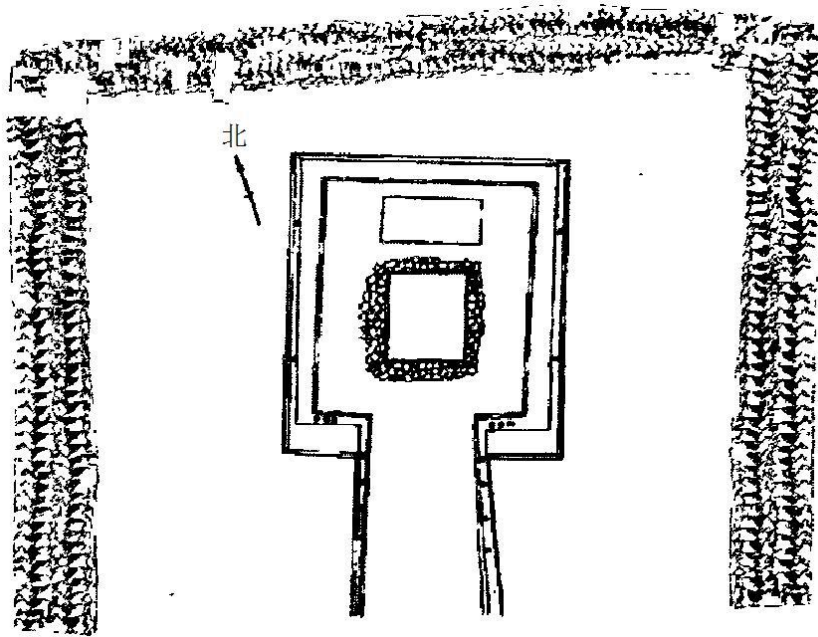


Fig. 29 Reconstruction of horse burial at Tomb No.5 of the Former City of Linzi (Zhao 2011: 60)

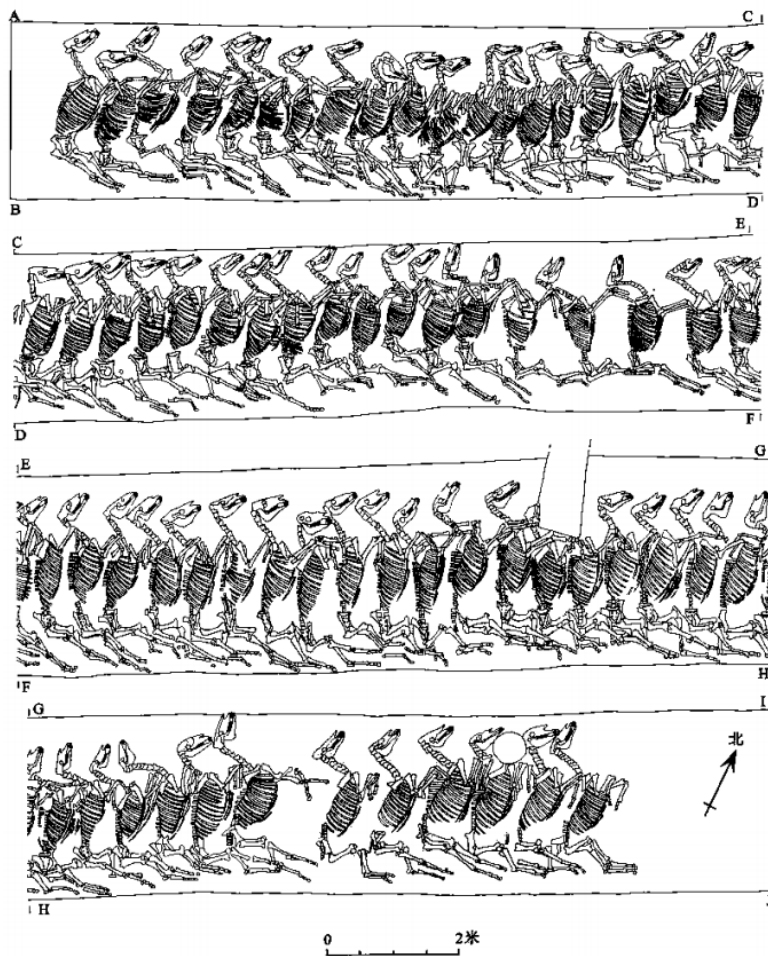


Fig. 30 Horse pit affiliated to tomb LZM2 at Zihedian site, Linzi, Shandong (SPICRA 2007: 381)

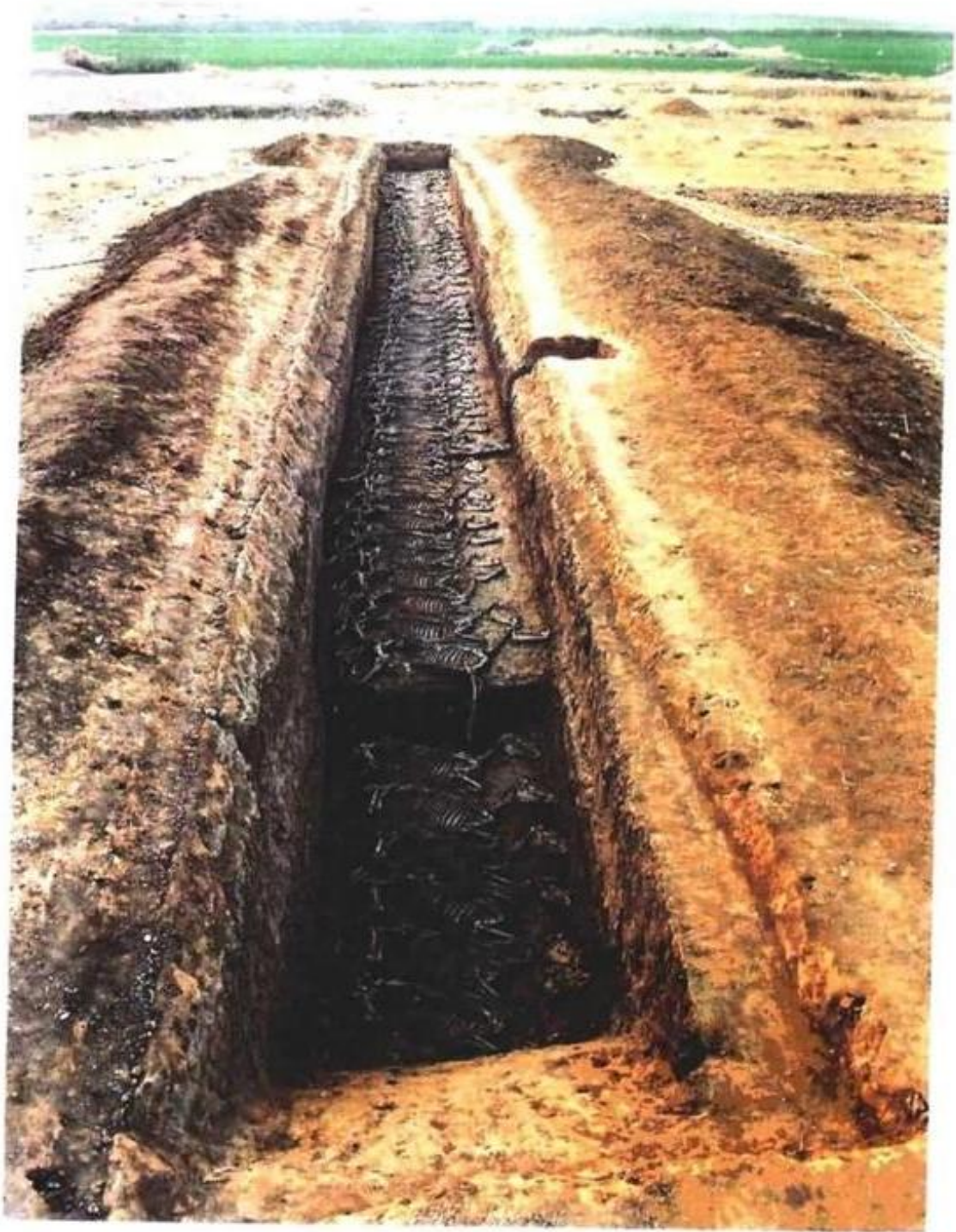


Fig. 31 Panorama of the horse pit affiliated to tomb LZM2 at Zihedian site, Linzi, Shandong (SPICRA 2007: color plate XXII)

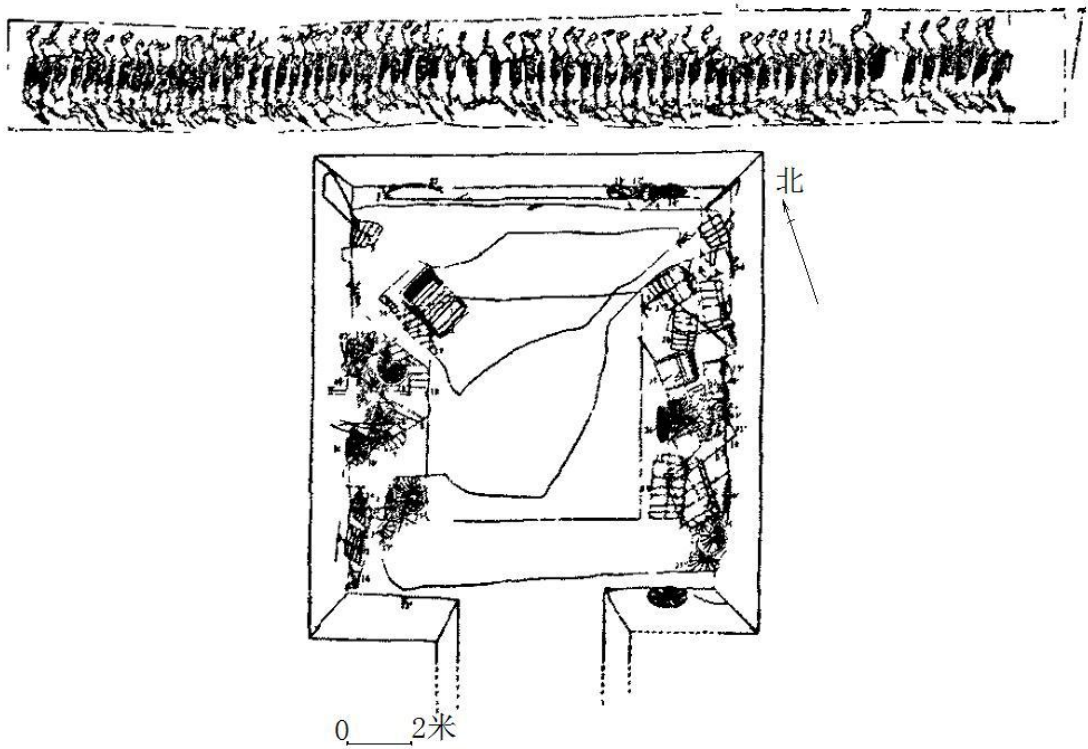


Fig. 32 Tomb LZM2 and its affiliated horse pit at Zihedian site, Linzi, Shandong (Zhao 2011: 55)

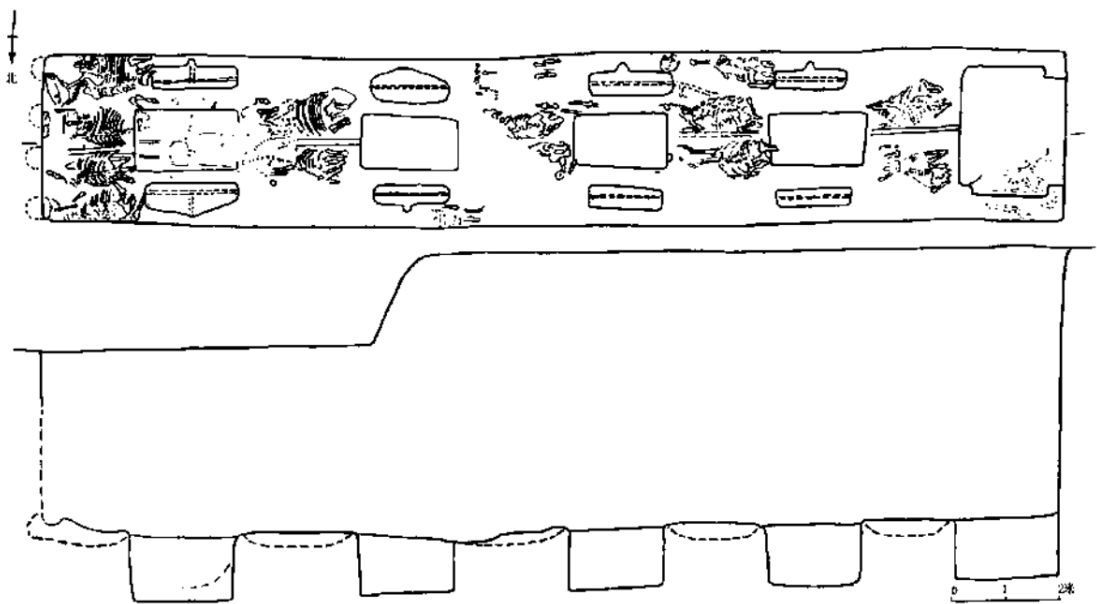


Fig. 33 Horse-and-chariot pit No. 98LDK1 at Yuandingshan, Lixian, Gansu (GPICRA 2002: 26)

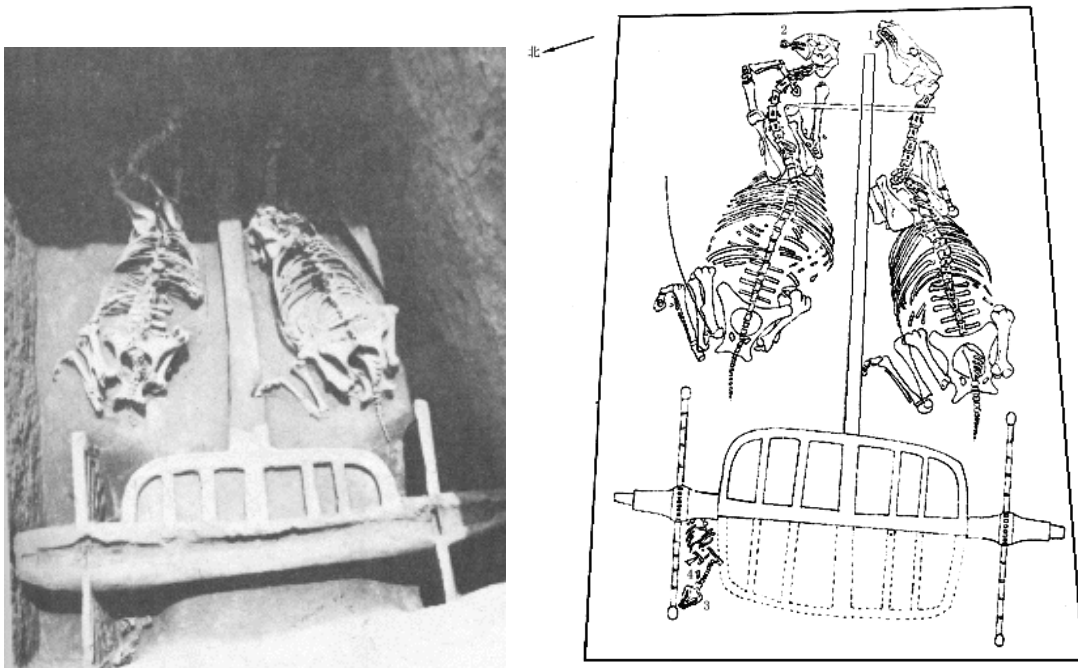


Fig. 34 Horse-and-chariot pit at Shangmengcun cemetery, Changwu, Shaanxi (Yun 1984: 14-15)

Left: Photo of the pit; Right: Plan of the pit



Fig. 35 Panorama of horse-and-chariot pit No. 1 at Jiuliandun site, Zaoyang, Hubei (Wang 2003: Pl. IV, 1)

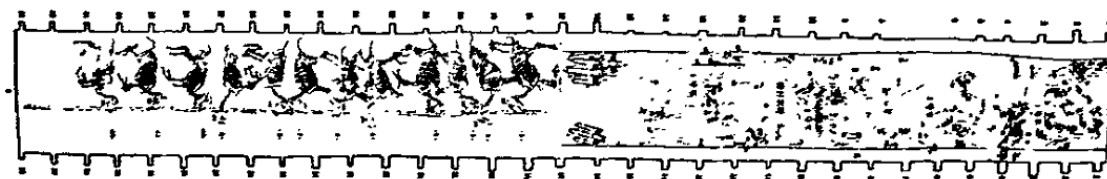


Fig. 36 Horse-and-chariot pit No. 2 at the Tomb of King Cuo, Pingshan, Hebei (HPICR 1995: 40)

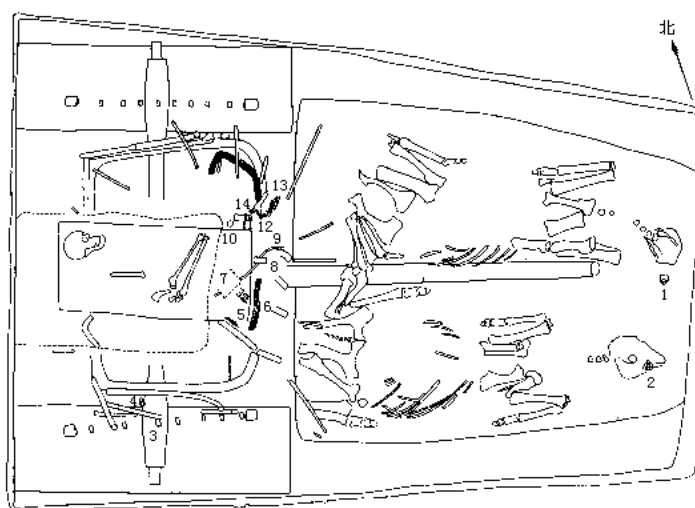


Fig. 37 Horse-and-chariot pit S1 at Xicun site, Fengxiang, Shaanxi (Shang and Li 1986)

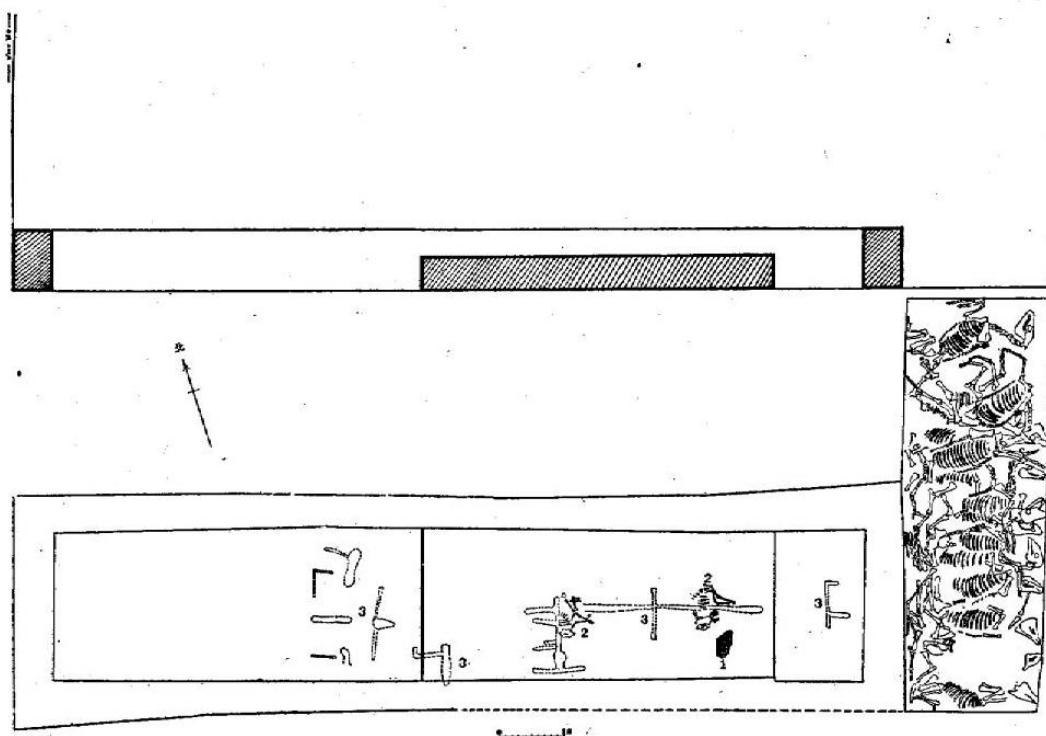


Fig. 38 Horse-and-chariot pit No. 3 at Baijiacun, Handan, Hebei (HPBCCWT 1962: 618)

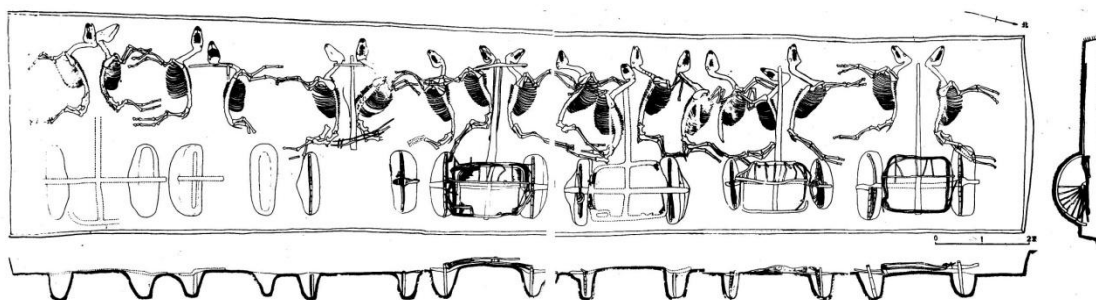


Fig. 39 Horse-and-chariot pit at Luogang, Yicheng, Hubei (HPICRA 1993: 4-5)

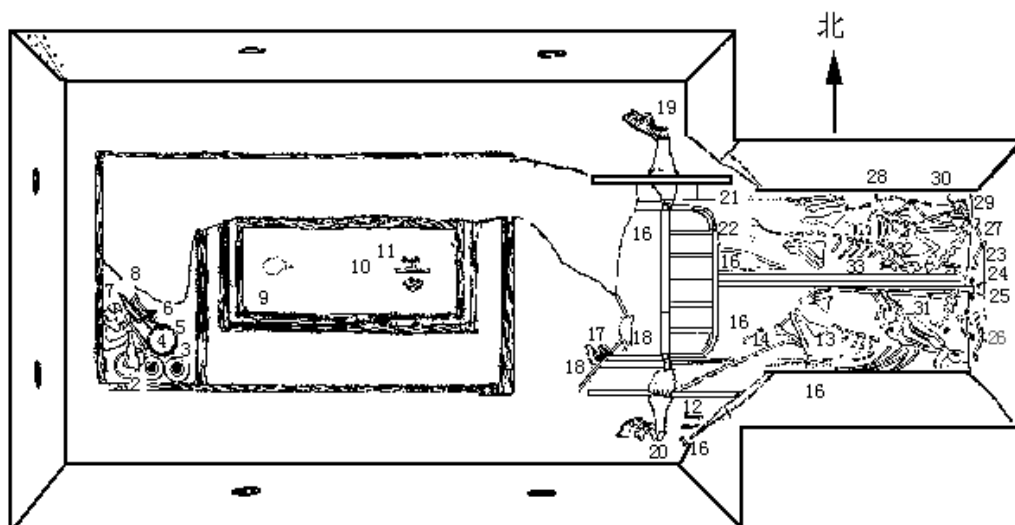


Fig. 40 Tomb M6 with horse-and-chariot burial at Miaozhuang, Pingliang, Gansu (Wei 1982: 23)

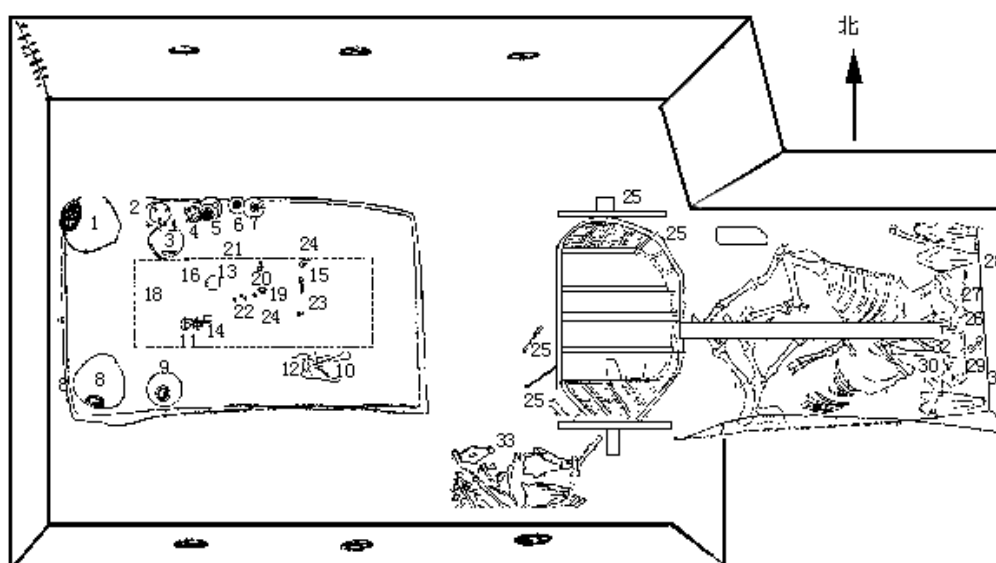


Fig. 41 Tomb M7 with horse-and-chariot burial at Miaozhuang, Pingliang, Gansu (Wei 1982: 24)

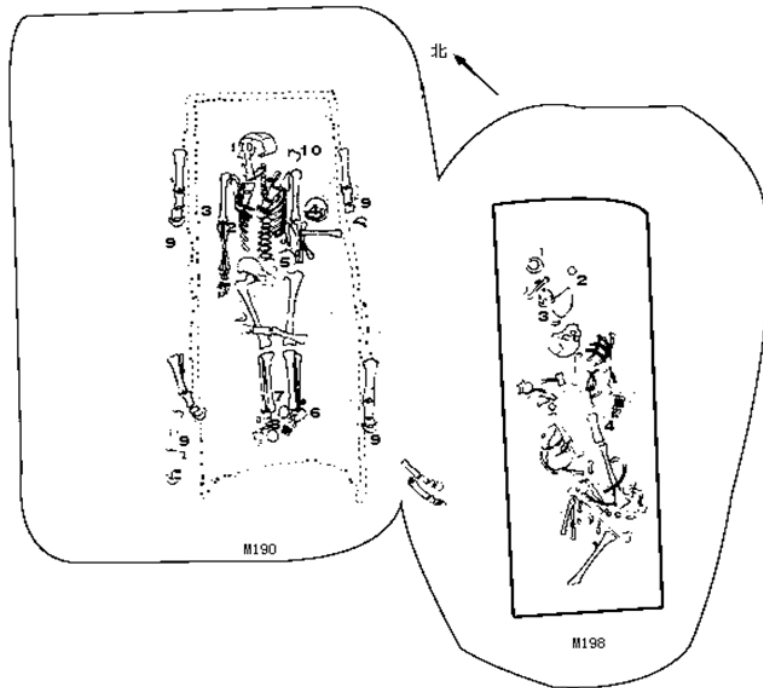


Fig. 42 Graves M190 and M198 at Dahuazhongzhuang, Huangyuan, Qinghai (Qinghai 1985: 16)

Note: M190 is a burial of a male, and horse hooves placed at the corners of the grave; M198 is a burial of a female, where cattle hooves are found.

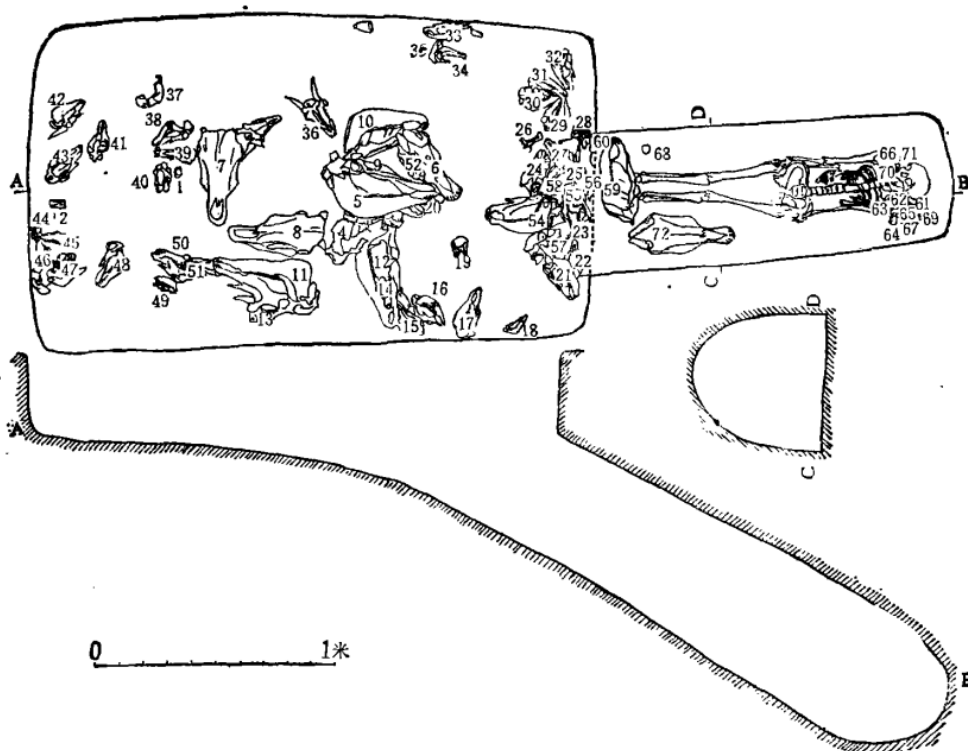


Fig. 43 Tomb III M3 at Yanglang, Guyuan, Ningxia (NICRA 1993: 25)

No. 1-3, 53, 60 are chariot fittings, 6, 8-11, 54-59, 72 are horse heads, 5, 7, 12 are cattle heads, 13-52 are ovicaprid heads.

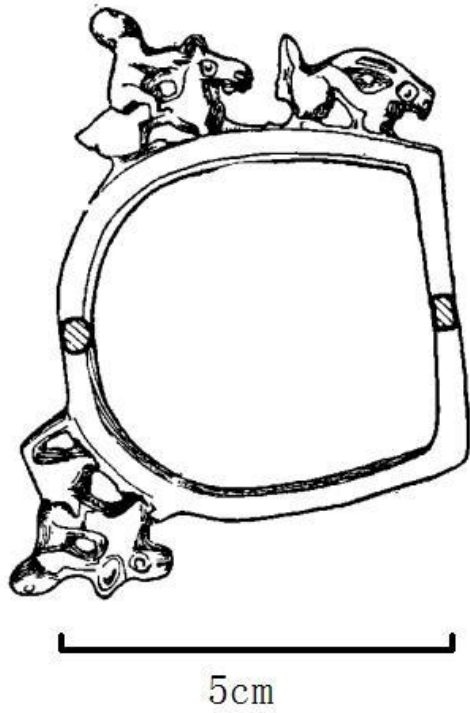


Fig. 44 Bronze ring with two rabbit hunters riding on horseback from grave M3 at Nanshangen site, Ningcheng, Liaoning (CASIA 1975: 137)



Fig. 45 Heji 19847 (Left: fragmental plastron; Right: detail of cited inscription)



Fig. 46 *Heji* 19813 front (Left: fragmental scapula; Right: detail of cited inscription)



Fig. 47 *Heji* 9177 front (Left: fragmental plastron; middle and right: detail of cited inscriptions)



Fig. 48 Jicheng 2760, Zuoce Da Fangding



Fig. 49 Jicheng 10173, Guoji Zibai Pan



Fig. 50 Jicheng 10174, Xi Jia Pan



Fig. 51 Heji 8588



Fig. 52 Heji 1098

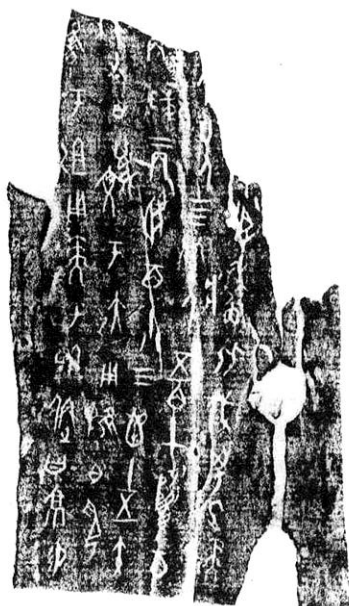


Fig. 53 Heji 36481 front



Fig. 54 Heji 10405 front (Left: fragmental scapula; Right: detail of cited inscription)



Fig. 55 Jicheng 6011, Li Ju Zun



Fig. 56 Jicheng 6012, Li Ju Zun Gai

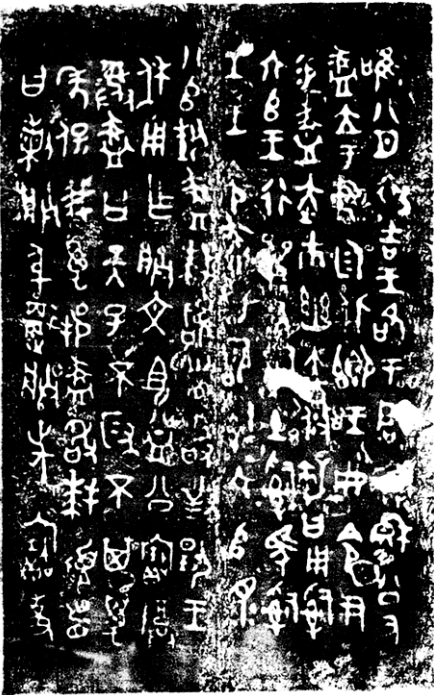


Fig. 57 Jicheng 9900, Li Fangyi



Fig. 58 *The Code on Stables and Gardens*, Shuihudi Qin tomb bamboo documents (Excerpts, star indicating the beginning of the cited text, the same below)

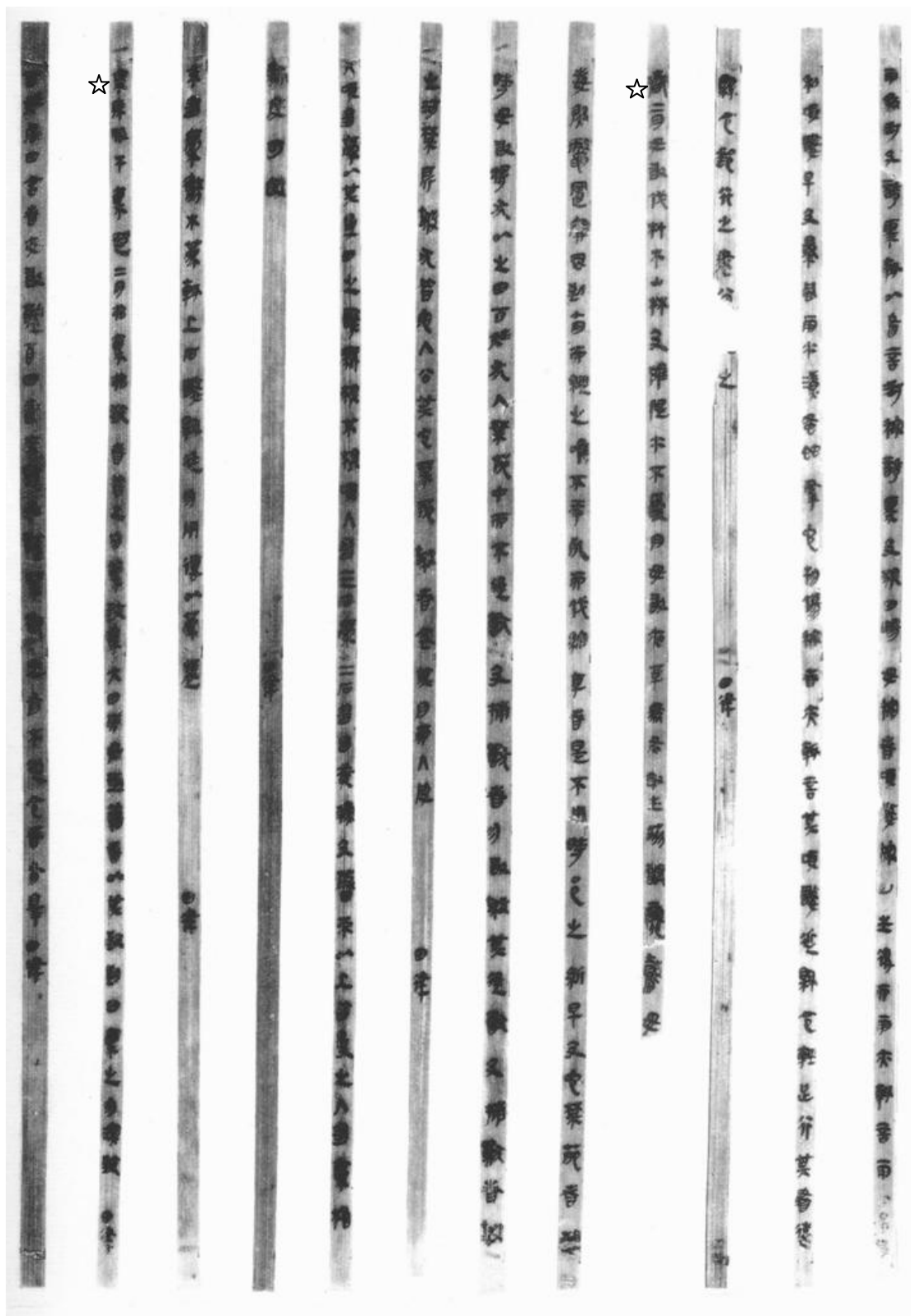


Fig. 59 *The Code on Farming*, Shuihudi Qin tomb bamboo documents

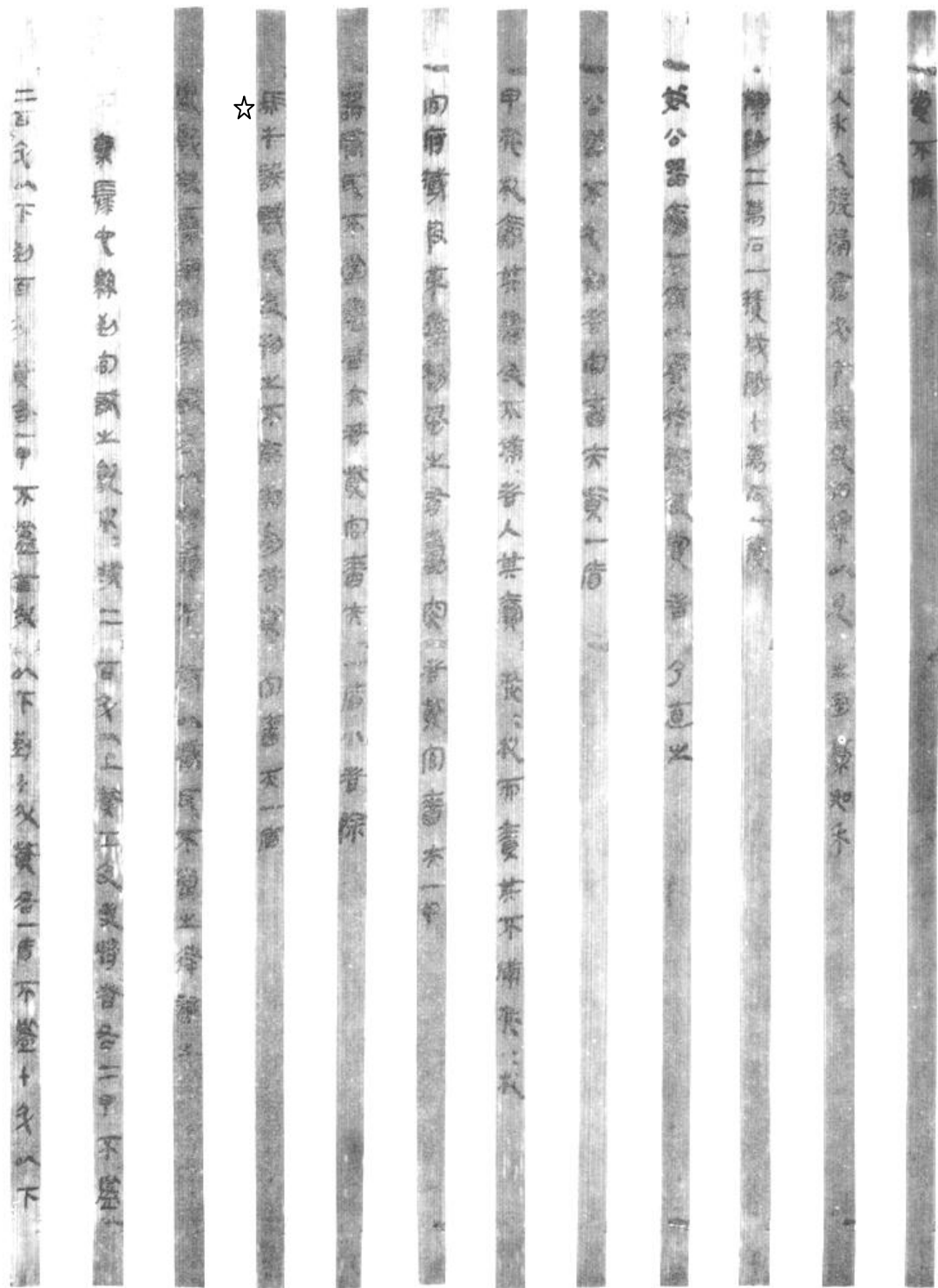


Fig. 60 *The Code on the Examination of Properties*, Shuihudi Qin tomb bamboo documents

一、凡有... 二、... 三、... 四、... 五、... 六、... 七、... 八、... 九、... 十、... 十一、... 十二、... 十三、... 十四、... 十五、... 十六、... 十七、... 十八、... 十九、... 二十、... 二十一、... 二十二、... 二十三、... 二十四、... 二十五、... 二十六、... 二十七、... 二十八、... 二十九、... 三十、... 三十一、... 三十二、... 三十三、... 三十四、... 三十五、... 三十六、... 三十七、... 三十八、... 三十九、... 四十、... 四十一、... 四十二、... 四十三、... 四十四、... 四十五、... 四十六、... 四十七、... 四十八、... 四十九、... 五十、... 五十一、... 五十二、... 五十三、... 五十四、... 五十五、... 五十六、... 五十七、... 五十八、... 五十九、... 六十、... 六十一、... 六十二、... 六十三、... 六十四、... 六十五、... 六十六、... 六十七、... 六十八、... 六十九、... 七十、... 七十一、... 七十二、... 七十三、... 七十四、... 七十五、... 七十六、... 七十七、... 七十八、... 七十九、... 八十、... 八十一、... 八十二、... 八十三、... 八十四、... 八十五、... 八十六、... 八十七、... 八十八、... 八十九、... 九十、... 九十一、... 九十二、... 九十三、... 九十四、... 九十五、... 九十六、... 九十七、... 九十八、... 九十九、... 一百、...

Fig. 61 The Code on Forced Labor, Shuihudi Qin tomb bamboo documents

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Fig. 62 *The Code on the Examination of Properties*, Shuihudi Qin tomb bamboo documents

可謂羊... 草... 可食...
 ☆ 可謂象... 疾... 者... 支... 或... 未... 斷... 及... 皆... 長... 令... 二... 扶... 出... 之... 象... 不... 疾...
 氣... 一... 廟... 律... 及... 不... 一... 可... 謂... 不... 一... 不... 處... 氣... 而... 疾... 者... 之... 是... 謂... 不... 一...
 可謂象... 疾... 者... 支... 或... 未... 斷... 及... 皆... 長... 令... 二... 扶... 出... 之... 象... 不... 疾...
 可謂象... 疾... 者... 支... 或... 未... 斷... 及... 皆... 長... 令... 二... 扶... 出... 之... 象... 不... 疾...
 可謂象... 疾... 者... 支... 或... 未... 斷... 及... 皆... 長... 令... 二... 扶... 出... 之... 象... 不... 疾...

Fig. 63 Questions and Answers on the Laws, Shuihudi Qin tomb bamboo documents

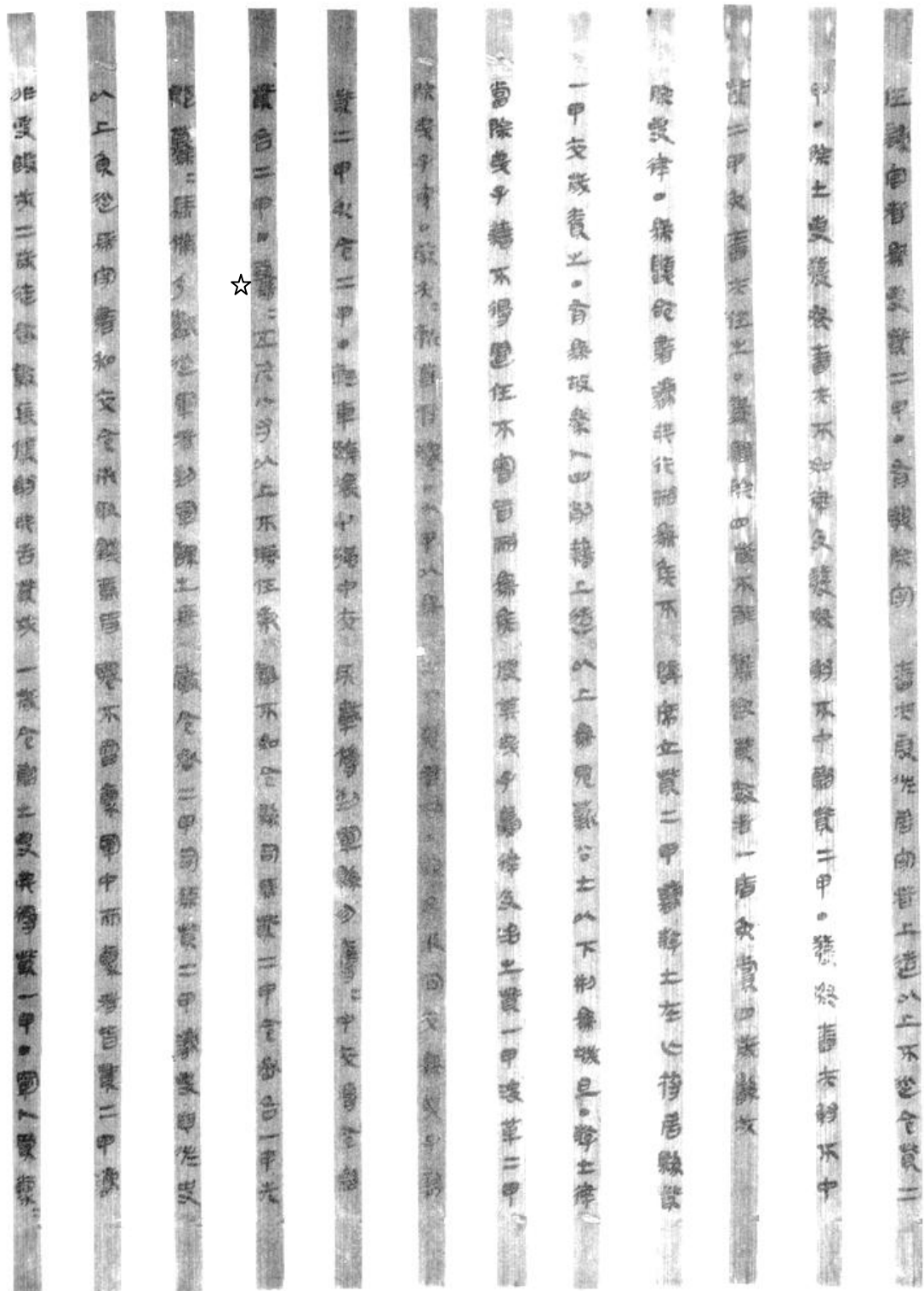


Fig. 64 Miscellaneous Copies of the Qin Laws, Shuihudi Qin tomb bamboo documents

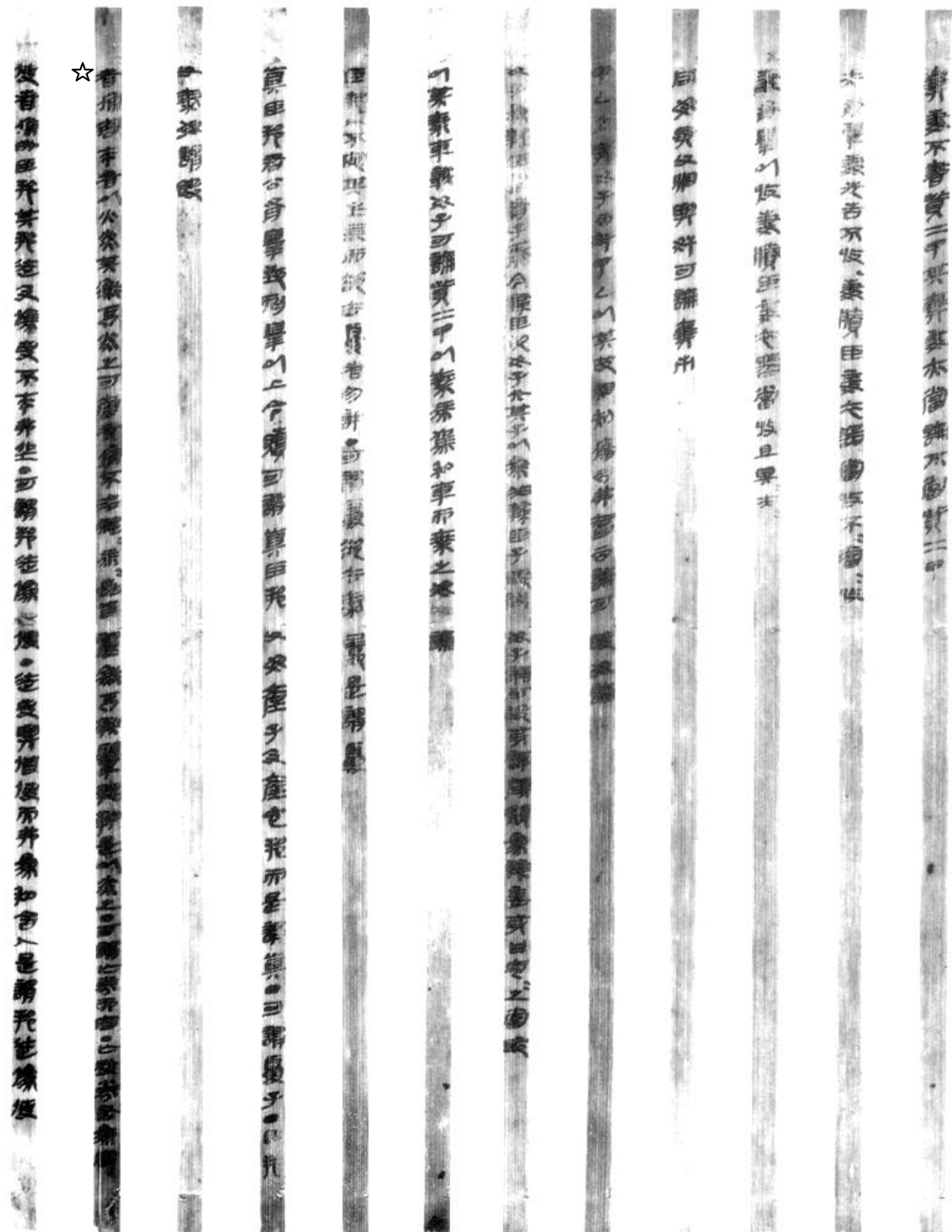


Fig. 66 Questions and Answers on the Laws, Shuihudi Qin tomb bamboo documents



Fig. 67 Rider driving a mystic “chariot” pulled by a dragon from a silk painting from Zidanku, Changsha, Hunan (Yates 2003: 13)

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