

On the Chinese Ko-halberd(戈)

Mong-Lyong Choi*

Preface

Ko-halberd, a typical Chinese weapon, had been used as a basic weapon of the foot-soldiers and of the charioteers since the Late Hsia or Early Shang dynasty, when this weapon is believed to have been invented. It is a weapon adopted for more than one thousand years by Chinese fighting force from then until the end of the Warring States.

According to Li Chi, the typology of this weapon is very important to study, because it shows three well-recognized developmental stages during over the one thousand years of the Classic period in Chinese history.

I believe this weapon is important for archaeologists to study not only about the typology itself but also about the impacts of this weapon on the war-strategies during the battles with other tribes and on the development of the Shang society.

In here, I am going to describe major factors concerned with this ko-halberd and try to find out its effect on the Shang society from the oracle inscriptions and other sources.

Name and Origin of the ko-halberd

The Chinese typical weapon, ko(or ge) is sometimes called as other

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names according to its different pronunciation such as ko-halberd (Chang, 1977:30), halbert, kou-ping (Li chi, 1950) and recently as dagger-ax(ge) by Tong En-zheng who had studied the typology of ko-halberds discovered from the southwest China(1979). Generally ko is included in the category of kouping weapon whose function is dragging some objects and cutting the neck horizontally. The halberd is named after the western counterpart called halberd or halbert, the weapon especially of the 15th and 16th centuries consisting of a battle-ax and pike on a long handle. We need a common name for this ko-halberd in terms of its function in the battle-field. And so at present it is safe to call this weapon as 'ko-halberd' because the name contains its own name from the Chinese character and its function from the western counterpart.

Later this ko-halberd combined with spearhead called 'mao' was developed into 'chi', the most effective weapon during the Ch'in, Han and Warring States (Li Chi, 1967:58).

Usually four kinds of materials, namely, jade, bronze, and iron, had been used for making ko-halberd and 'chi', but as far as iron is concerned, it was rarely used in making 'chi' in later times. According to Li Chi, the prototype of bronze ko-halberd was made of jade or hardstone, and during the Shang dynasty all bronze ko-halberds were cast in imitation of the 'jade-with-bronze-sleeve type' (Li Chi, 1950:434 and 1957:56).

His evidence comes from not only his typological study of the ko-halberd but also comes from the excavation of the bottom of the sunken pit, far below the floor of the wooden chamber in HPKM 1001, where no less than nine burial pits underneath the floor of HPKM 1001, loc-

ated in the center and four corners, were believed by him to be the tombs of guards who were responsible for protecting the dead master against subterranean evil spirits. What is more interesting is that each burial has a halberd weapon most noticeable is that while the halberds uncovered in all the four corner pits were all made of bronze, the central pit alone contained a stone halberd (Li Chi, 1977:91-92). "The one found in central pit, evidently the resting place of the chief guard and much larger in size than the other pits, is made entirely of stone; those found in corner pits are all made of stone, and was given a more honored position chiefly for its greater antiquity (Li Chi, 1957:56)".

But sometimes with regard to jade ko-halberd, such as the one discovered from the guardian tomb in Panlungcheng or Lijiazui M3, Huangpi Xian, Hubei province (length: 36 and 5/6 inches), we can assume that some jades were never hafted and only buried with the richest and powerful persons (Treasures from the Bronze age of China, 1980:178). And so we are able to infer that the bronze ko-halberd-imitation of stone or jade ko-halberd was adopted as a real weapon during the Shang dynasty. Hayashi has mentioned that the earliest bronze ko-halberd appeared during the Middle Shang dynasty with the evidence discovered from the No. 20 and 123 tombs in Liu-li-ke (1972:17). As far as the origin of the bronze ko-halberd is concerned, we might better wait for further excavation because one of the earliest bronze ko-halberd type was discovered from the pit in Ehr-li-t'ou, Yen-shih (KK, 1976). This area is estimated as 'Po', the first location of the Shang dynasty's capital city and recently new data have been accumulated in this region to indicate the existence here of a Shang settlement of major proportions at an early stage within the Shang period (Chang, 1977:220). If so,

it is possible to infer that the origin of the bronze ko-halberd may go back at least to the Early Shang dynasty period or possibly to the Late Hsia dynasty.

Form and Typology

According to Li Chi, there are three basic forms of the bronze ko-halberd during the three periods: the Shang, the Western Chou and the Ch'in-Warring States. A brief description of the characteristics of the bronze ko-halberd during the three periods is as follows (Li Chi 1957: 55-58 and fig. 1, upper right side).

1. The ko-halberd of the Shang dynasty is of the simplest type: it is frequently composed of an elongated tongue-shaped blade of jade or hard stone of fine grain, which may be hafted into a T-shaped bronze sleeve.

A more primitive type of ko, evidently an early survived form and used exclusively for burial, is made completely of stone: it has an elongated blade, pointed at one end, and with the other end out into a tang for hafting. All bronze ko of this period were usually cast in imitation of the jade having bronze sleeve type; the two projecting points on both edges of the sockets were retained at the junction between the blade, called 'yuan', and the hafting part, called 'nei'. These structural peculiarities were never found in the stone prototype.

2. During the Western Chou period, the primitive type of ko-halberd evolved into new types of ko-halberd; for the first time there was a definite sign of the development of 'hu', or neck, namely a downward projection at the hafting section of the blade; it is no doubt a device

invented to improve the efficiency of the hafting. Hayashi is against Prof. Li Chi's point of view that this new type of bronze ko-halberd with long 'hu' was invented during the Chou period, and, again in contrary to Li Chi, he maintains that this type of ko-halberd was invented during the Late Shang dynasty (Hayashi, 1972:33). His estimation is based on the bronze ko-halberd excavated from the late tomb at fourth period of Ta-ssu-k'ung-ts'un. Anyway we are able to assume that the new type of bronze ko-halberd was popular during the Western Chou dynasty. The Western Chou people tried to improve the efficiency of this weapon for the practical use during the combat. Their effort were shown in the composite weapon with ko and 'mao' (spear), which did not achieve any success till several hundred years later.

3. During the Warring States, Ch'in, and Han, the development of ko-halberd reached its zenith, and we can reconstruct the real shape and form from the 'Kao Kung Chi', written during the Chou dynasty. In earlier times, the 'nei' had served only ornamental purpose, but it was put to effective use by being provided with sharp points and edges or sometimes bent into hook-shaped cutters. Especially the new type called 'chi', which effectively combined the ko and 'mao' (namely, halberd plus spear), was invented during this time and this weapon took a great role as an effective and powerful weapon of foot-soldiers in the battlefields.

As we can see from figure 1, three developmental stages from ko-halberd to 'chi' can be recognized. Namely, (1) primitive type (ko-halberd during the Shang dynasty, (2) transitional type according to the development of 'hu' mainly during the Chou dynasty, and the last (3) 'chi' type, the last form of ko-halberd, can be classified according

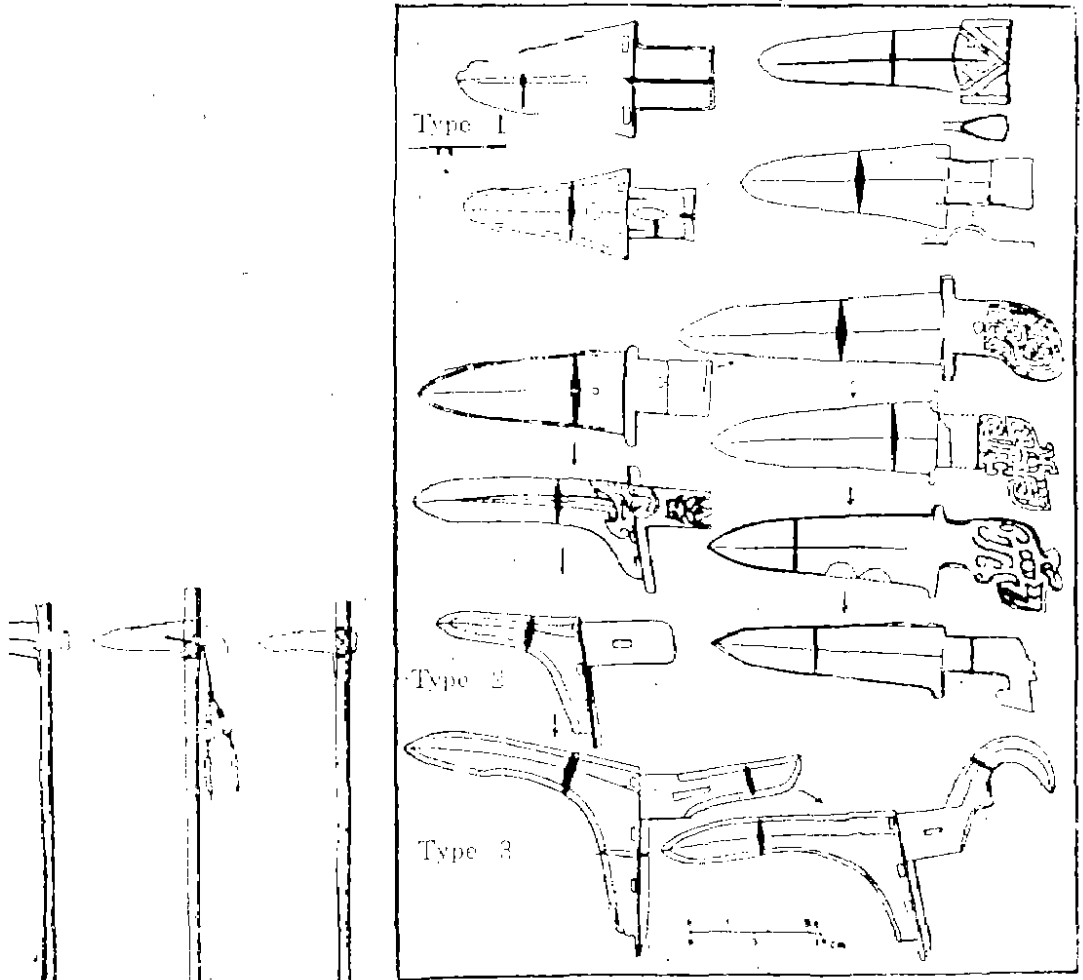
to the chronological order during Ch'in, Han and Warring States.

Function

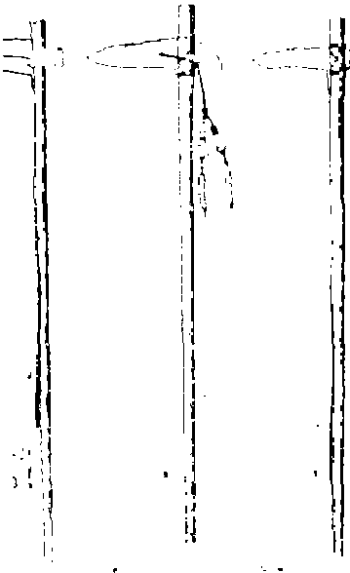
With regard to the function of the ko-halberd, we can think about two aspects. The first is its function related to the chariot, and the second is its use as a basic weapon of the foot-soldier in the close battlefield combat as shown in the picture of warriors who are doing close combat using the 'chi' in later Han dynasty. Beside the two functions mentioned above, the ko-halberd was used as a part of the burial goods whether it was made of jade or bronze. This is archaeologically well known from the tombs HPKM 1001 and 1004.

The bronze ko-halberd is used on the chariot. As Shih has mentioned from the archaeological evidence of chariot tomb M20, M40, M45, M202, and M206 in Section C, Hsiao-t'un (Shih, 1952:482), five chariots formed a squadron, and five squadrons formed a company. Each chariot had three charioteers: the middle one was driver carrying a whip, the one on the left was striker carrying a ko-halberd, and the one on the right was archer carrying bow and arrows. According to Shih, the basic weapons of the Shang warriors are bow, arrow, ko-halberd, shield, small knife and sharpening stone (Shih, 1950:20). If so, the bronze ko-halberd is very important for the foot-soldier and charioteer of the Shang dynasty like its counterpart the modern rifle or submachinegun of a panzer or armoured corps. If we see the decorative pattern of a 'chien basin' from Shan-piao-chen, Chi Hsien, the well developed 'chi' was used as a basic weapon for a foot-soldier in close combat. Anyway we can infer that ko-halberd was a basic weapon of Chinese soldiers from

中國青銅器時代

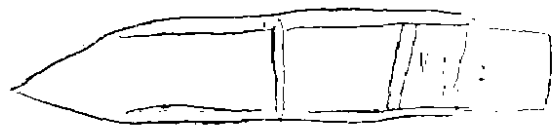


第一圖 中國發見銅戈形式圖



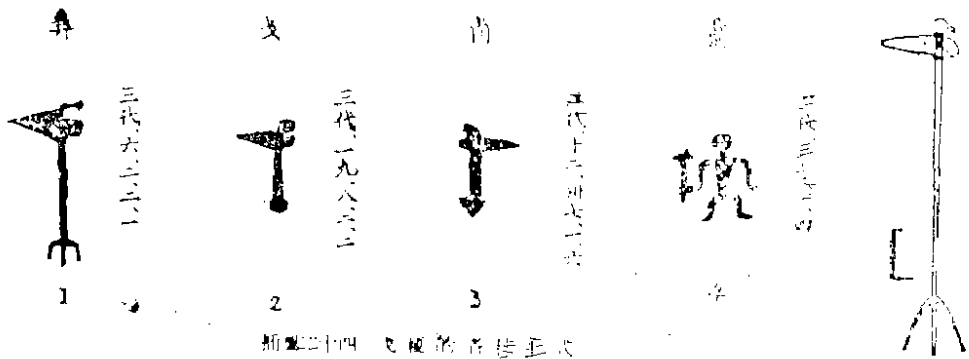
第二圖 中國發見銅戈之種類

中國青銅器時代



第三圖 銅戈

第四圖 銅戈之種類

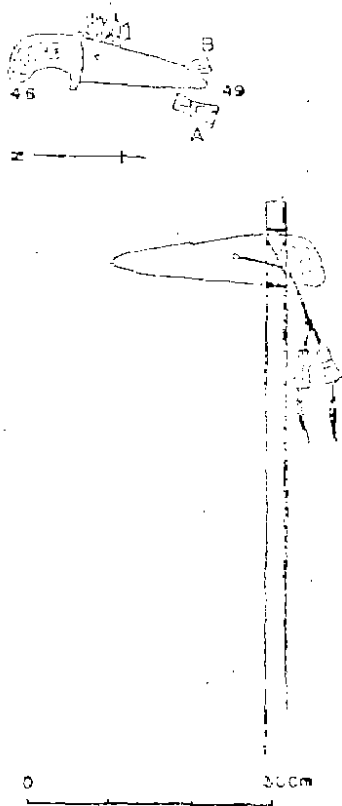


第五圖 銅戈之種類

第六圖 銅戈

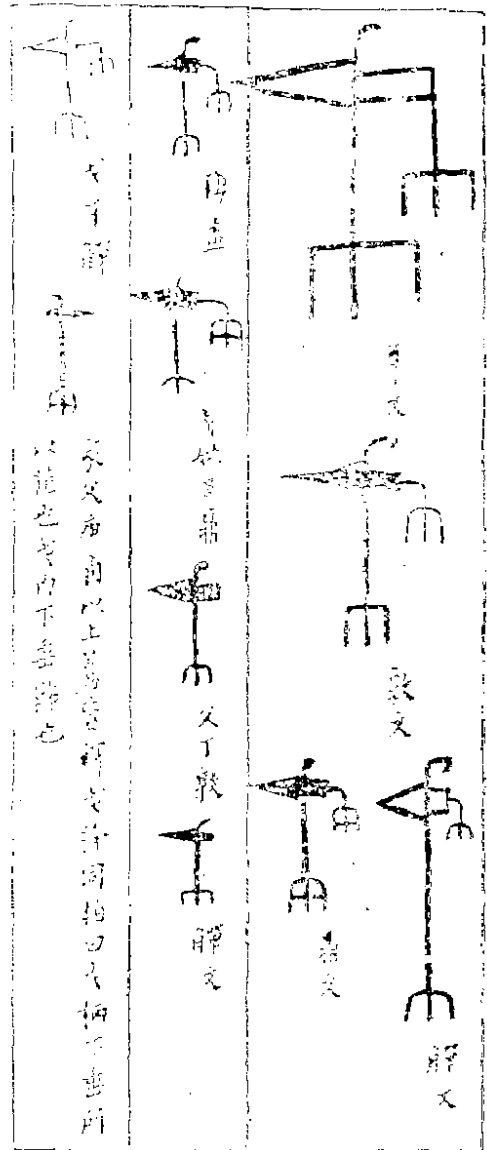
<Fig. 1>

中國考古報告集之二 小屯



新圖三十九：M20戈與短玉首的銅質

作 譯：麻 日 博



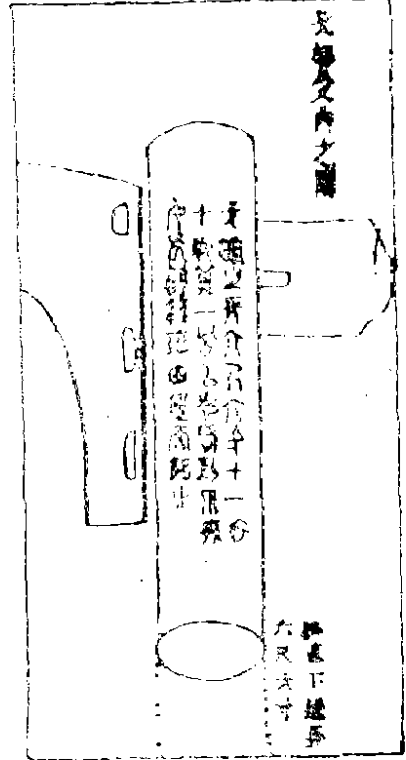
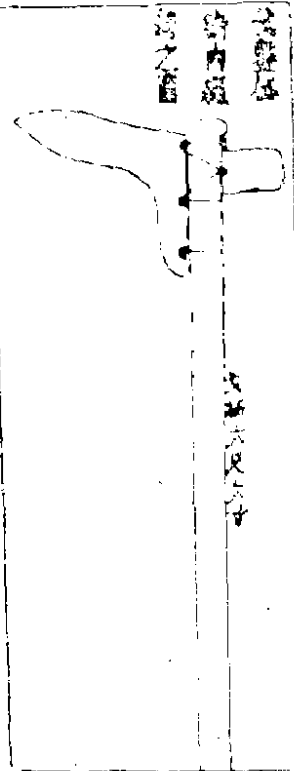
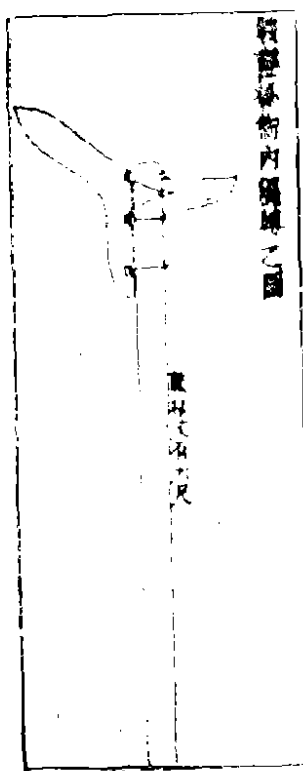
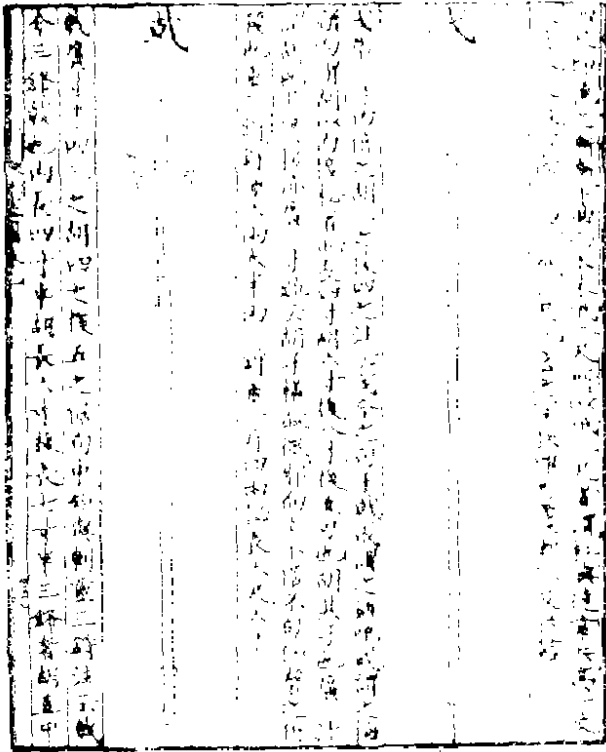
新圖十二：殷虛出土之戈字

甲骨文中發現「戈」字已有六條(參見《殷虛書契》卷十二)並且從戈的字也很有幾個。不過在這時代,這個字已不是完全象形了。這六處所見的戈字如下:

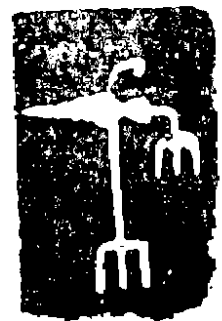


<Fig. 2>

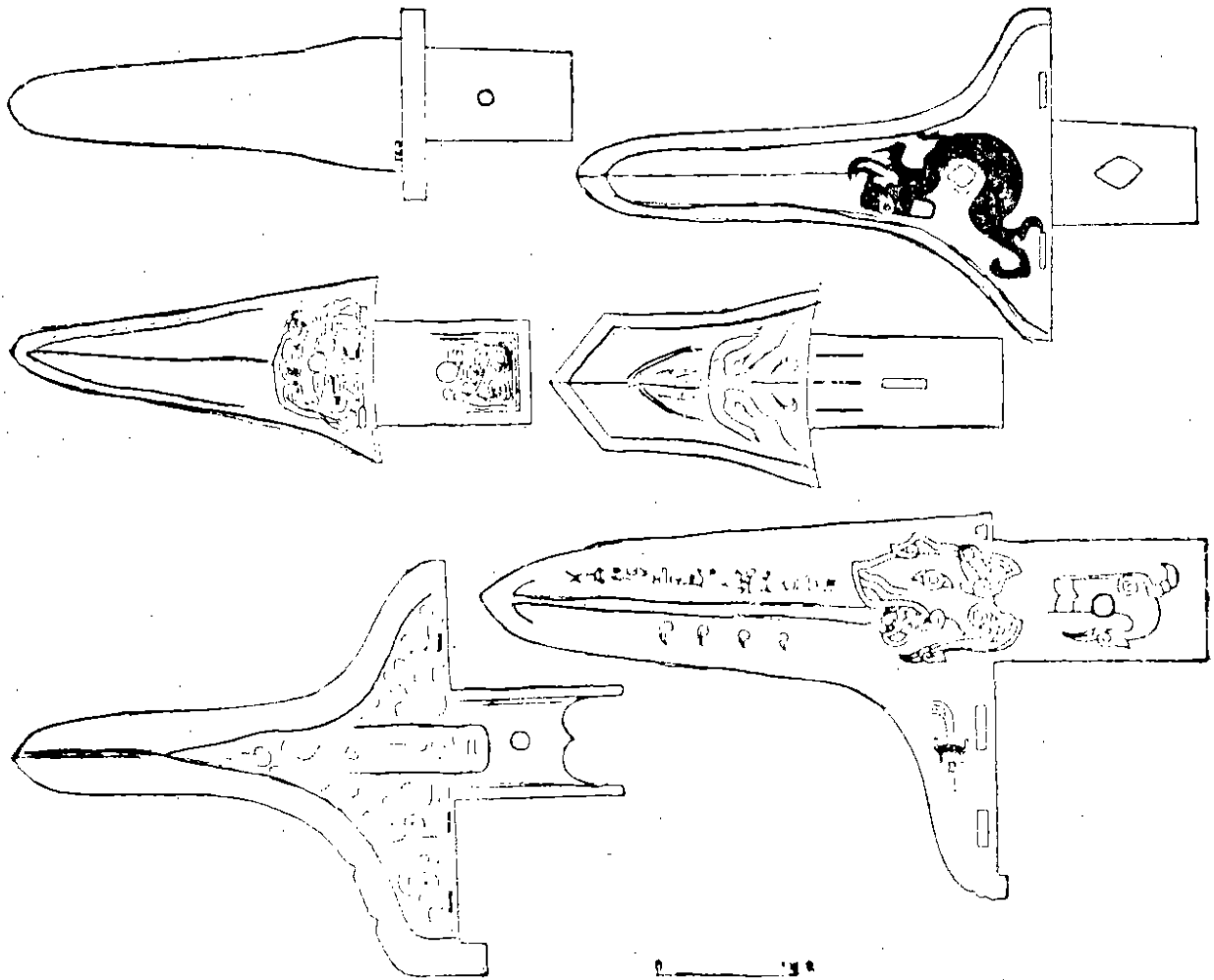
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(Fig. 3)



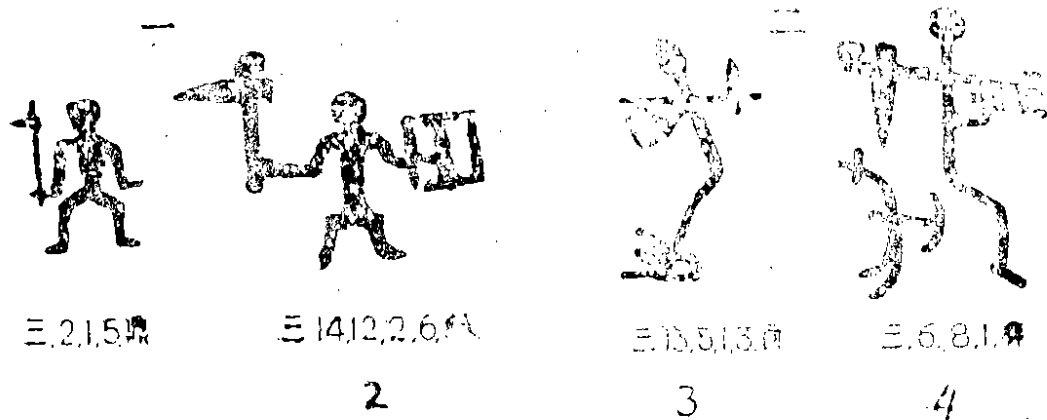
考古學報 1979 年第 4 期



圖一 巴蜀系統青銅戈

- 1. AI 型(新繁水觀音) 2. AII 型 A 式(郫縣竹瓦街) 3. AIV 型(成都)
- 4. AIII 型(成都) 5. AII 型 B 式(巴縣冬耳壩) 6. AV 型(郫縣紅光公社)

小屯殷代的戰斧兵器



三.2.1.5 鼎

三.14.2.2.6 鼎

三.13.3.1.3 鼎

三.6.8.1.4 鼎

2

3

4

插圖二十六：金文戰斧人與斧的比例

<Fig. 4>

the Early Shang dynasty to the Warring States with the function of striker, hook-cutter, piercing and cutting the neck as a halberd.

Reconstruction of shape in terms of 'K'ao Kung Chi'

According to 'K'ao Kung Chi', Chou-li, the width of the ko-halberd is two-ts'un, the 'nei' is double, the 'hu' is triple, the 'yuan' is quadruple and the length of the wooden shaft is six ch'ih and six ts'un. The weight of the ko-halberd is three liueh (equal to six liang) (Ma Heng, 1930:1). We can not estimate the specific weight and length according to this document mentioned above, but Shin reconstructed the length of the ko-halberd as about 1.1m from the proportion of ko-halberd to the man who is carrying the halberd in an inscription on the bronze vessel as shown in figure 4 (Shih, 1950: Fig. 26). But as time goes on, the length of the ko-halberd become longer than those of the Shang dynasty. The length is about 2m as shown in 'K'ao Kung Chi' and pictographs on the 'chien basin' from Shan-piao-chen', because of the improvement of efficiency of this weapon during the battle. The 'K'ao Kung Chi' was written during the Chou dynasty and we can infer the shape of the well-developed 'chi' type whose length is almost similar to the height of warrior, but not the primitive ko-halberd adopted during the Shang dynasty. Anyway the change of the length of the ko-halberd itself reveals that as time goes on, the warrior or the ko-maker themselves had well known the efficiency in the war with making the length longer and even joining the 'mao' to the ko-halberd.

Analysis

According to Li Chi, a comparison of chemical proportion of ko-halberd of the various periods reveals the increase of the tin (Sn) and the lead (Pb) elements in alloyment during the later periods shown in

Analysis of Bronze Ko-halberds

Sample	localities	Sn	Pb	Cu	Fe	Zn	Ni	total
Shang dynasty	E 16 (1634)	4.01	2.59	88.98	0.13	no trace	not determined	95.71
Western Chou Dynasty	M28.8	13.61	0.78	82.72	0.05	0.10	not determined	97.26
Western Chou Dynasty	29.8	10.75	0.10	87.44	0.10	0.09	not determined	98.48
Western Chou Dynasty	M19.2	12.10	12.41	73.38	0.11	0.07	not determined	98.07
Eastern Chou dynasty	73	17.61	13.35	66.37	0.22	0.13	0.11	97.89

李濟 (Li-chi)

Sample number	Cu	Sn	Pb	Fe	Ni	As	Zn	S	Total
2	78.70	0.13	18.09	1.12	0.07	1.65	—	0.22	99.98
1	85.26	13.86	0.13	0.26	—	0.10	0.05	—	99.66
5	84.85	9.97	3.51	0.12	0.07	0.40	0.43	—	99.35
6	76.06	12.03	10.89	0.43	0.08	0.44	0.20	—	100.14

梅原末治 (Umehara Sueji)

<Fig. 5>

figure 5 (upper). The chemical analysis of five ko-halberds from three localities of Anyang, Chün and Chi Hsien is shown on the upper table in fig. 5 (1957:46-47).

In making bronze ko-halberd, copper (Cu), tin (Sn) and lead (Pb) are necessary, and the Shang people might have got those minerals from the area such as Yuan-ch'ü, less than 300km from the ancient

remains of the Shang dynasty (Li Chi, 1957:48). According to Anamo, 6 copper mines and 6 tin mines in Honan, 2 copper and 2 tin in Shantung, 15 copper and 6 tin in Shansi, and 4 copper and 1 tin in Hupei are found to be located in the Shang area (Amano, 1953:231-237). Shi Chang-ju identified 3 copper mines and 4 tin mines within 100km of Anyang, 6 copper and 3 tin within 200km, 11 copper and 4 tin within 300km, and 6 tin within 400km (Shih, 1955:102).

Anyhow the Shang people knew very well the alloyment of copper and tin into bronze making and exploited copper and tin resources at least within 400km of capital city of Anyang.

As seen on lower table of analysis of bronze ko-halberd by Umehara in figure 5 sample no.2 has only small tin (0.13%) and much lead (18%). According to Umehara, this means that No.2 sample was made for ceremonial object. Using the lead instead of tin has the aim of lowering the melting point, making the object beautiful and making treatment easier. He mentioned that bronze ko-halberd Nos. 1, 5 and 6 were made and used for practical weapon using the tin as an alloy. Namely he concluded that much content of tin was for the practical use and much content of lead for the ceremonial use. Anyway the Shang people knew the chemical alloyment very well in making bronze and this period can be called as a real bronze age in China (Umehara, 1936:46-48).

Discovery of the ko-halberd and its distribution

Most of all ko-halberd were discovered from tombs during the pre-dynastic and dynastic Shang periods. The Shang period is divided into

three phases: Ehr-li-kang (Ehr-li-kang, Cheng-chou), Late Ehr-li-kang (predynastic Shang, Anyang) and dynastic Anyang (Chang, 1980:318). This has been based on the chronological order of major sites of the Shang, Yenshih in northwestern Honan (Ehr-li-t'ou), Cheng-chou in northern Honan (Ehr-li-kang) and Anyang in northern Honan. The capital city of 'Po' has been uncovered near Yen-shih, 'Ao' has been uncovered near Cheng-chou, and the last capital city of Yin near Anyang which was ruled by king P'an Keng to Ti Hsin for alleged 273 years (Chang, 1977:218-241). The Shang period is estimated approximately from 1750 to 1100 B.C. As far as ko-halberd is concerned, it came from the earliest Ehr-li-t'ou, Yen-shih (Fig. 1 middle). Let us see the ko-halberd sites and accompanied artefacts briefly.

1. Ehr-li-tou, Yenshih—From the earthen pit tomb, chüeh, tripod, jade ko, bronze ko and other jade objects are discovered (KK, 1976-4).

2. P'an-lung-ch'eng, Hunang pi, Hupei (M2, at Li-chia-tsui)—jade ko-halberd was excavated with other bronze objects from the chamber tomb excavated in 1963, which are identical to the bronzes of Cheng-chou (WW, 1976-2).

3. Ching-tang, Ch'i-shan, Shansi—This site is included in the late Ehr-li-kang subphase and bronze ritual vessels such as chüeh, ku and li, and bronze ko-halberd were discovered (WW, 1977-12).

4. M232, Hsiao-t'un—This tomb is included in predynastic as the tomb 388 and from the wooden chamber and wooden coffin, 2ku, 2 chüeh, 2 chia, 2 p'o, 1 ting and 9 p'an, 6 bronze ko, 2 stone ko, and 1 ax were discovered (Shin, 1973).

5. M388, Hsiao-t'un—As the tomb M232, it is included in the predynastic period, and from the pit grave 2 ku, 2 chüeh, 1 ting, 2 chia,

2 p'ò, 1 p'ing-yü, 5 bronze ko, 33 jade and stone pieces, and 2 pottery tous were excavated (Shih, 1961).

6. HPKM 1001—From the nine underground waist pits, stone and bronze ko-halberds were excavated (Liang and Kao, 1962)

7. HPKM 1003—A head of ko-halberd was excavated (Liang and Kao, 1967:123-125)

8. HPKM 1~4—100 helmets and 72 bronze ko-halberds were excavated (Liang and Kao, 1970:154-157).

9. M164 also contained ko-halberd (Shih, 1973:12).

According to the chronology of the tombs found in Hou-chia-chuang and Hsi-pei-kang, the stratigraphic interrelationship of the tombs are established (Chang, 1980: Summary from PP. 110-124) as follows;

Ehr-li-t'ou....P'an-lung-ch'eng...Ching-tang.....

M232 and M338 (predynastic).... HPKM 1001.... HPKM 1004
(dynastic)

Bronze ko-halberds discovered from the tomb PKM 1001 and HPKM 1004 demonstrate the chronological order as well as suggest on the origin of the bronze ko-halberd as has already been mentioned about the relationship of the bronze and stone ko-halberd discovered from the tomb HPKM 1001.

Seventy-two bronze ko-halberds were discovered from the tomb HPKM 1004 and 731 bronze spears were discovered from the same tomb; this may mean that the ko-halberd was a more important weapon than the spear during that time, and also the ruler of the Shang dynasty recognized the importance of the bronze ko-halberd as a basic weapon of military forces.

The distribution of ko-halberd is confined to the central area of the

Shang dynasty: Shantung, Honan and Hupei provinces. Recently according to Tong Enzheng, the bronze ko-halberds were used by many tribes in southwestern China including Sichuan and Yunnan provinces and Ehrhai area probably during the Late Shang dynasty to the Middle Han dynasty. Although the ko-halberds found in Yunnan province and Ehrhai area were included in the later times, but the ones from the Sichuan province which are classified as type A (fig.4 upper) are similar to the ones during the Late Shang period. Although the type A is not exactly the same as the ones found in the Late Shang dynasty, we can agree that this type also was influenced by the Shang culture (Tong, 1979:441-456). If so, the distribution of the Shang culture will be greater than we assumed.

Mold

It is assumed that two pieces of clay or stone molds were used for casting bronze ko-halberd because of flat shape of the ko-halberd, unlike the other bronze vessels which were cast with multi-pieces of stone or clay molds. After the bronze casting ko-halberd must be treated carefully on the grinding stone (sharpening stone), that is requisite to the Shang warrior, for making the blade sharper.

Emblem

As shown on the bronze vessels and written calligraphy are a clue to the professional occupation (specialization) related to the ko-halberd and possibly clans in the Shang dynasty. From the emblems that may be related to professions, we can find out 'halberd maker', 'halberder' and 'halberd carrier' (Chang, 1980:232).

If we focus on the professional military force only, as Ch'en Mengchia (1965) has listed, there are various military officials such as horse attendant, archery commandant, garrison commandant, dog attendant and frontier attendant like ko-carrier or halberder. We may assume that there are many specializations in the military forces only. The Shang dynasty is based on the military forces, and oracle bone inscriptions mention that there are many wars, conquests and alliances during the period I (Wu-ting) and period V (Ti-hsin and Ti-yi) such as king Ti-hsin's great campaign (Keightley, 1968:180). The Shang military forces might have well trained warriors with the well developed weapons and equipment such as ko-halberd and chariot. That is the reason why the Shang dynasty were superior to the other tribes or the Hsia and the Chou, if Prof. Chang's hypothesis that the Hsia, the Shang and the Chou were parallel and interrelated states (Chang, 1980:354).

According to Hayashi, the bronze ko-halberd is also represented in the flags (1966). Flags were apparently an important symbol of authority throughout the ancient world. In this sense, the bronze ko-halberd has special meaning of symbolizing the specialized corpse in the military force or the important weapon for protecting the state as shown in the oracle bone inscription. The importance of ko-halberd can be seen as a basic weapon of the Shang military forces as well as a symbols of king himself and the protector of the Shang region.

The effect of the ko-halberd on the Shang dynasty

a. Inference from the oracle bone inscription

Two characters among the many oracle bone inscriptions related to

ko-halberd can be seen and they have to be believed as special meaning on the development of the Shang dynasty.

(1) 𠄎=我 According to Wang kuo-wei, this means that the king uses this character, 我, to express himself and the shape of character has the form of the ko-halberd(戈)

(2) 𠄎=或=國 According to Sun (1937), this means that state is composed of the region (口) and ko-halberd, namely the ko-halberd protect the region and state.

From these two oracle bone inscriptions, we are able to recognize the meaning of the ko-halberd not only as basic weapon of the Shang dynasty, but also as a symbol of king himself and the symbol of military force itself protecting Shang region.

b. Warfare

We have no direct evidence for the using of ko-halberd during the war against the other tribes, but from the archaeological evidence, we can infer that this ko-halberd was a basic and important weapon such as spear, archery and chariot of the Shang military forces.

Many military expeditions with an army of between 3000 and 5000 men were conducted against the 'fang' tribes beyond the Shang border during the reign of king Wu-ting and Ti-hsin (Chêng, 1960:210). During those expeditions the Shang military forces must have operated well-developed strategies with well-organized troops. As Shin has already mentioned, the chariot were the basis for the Shang military forces, and ko-halberd were used by charioteers and by foot-soldiers in close combats.

c. Strategy in warfare

As the 'Yin pen chi' says, the military forces of the Chou dynasty must have been composed of three parts: middle, right and left. King Wen himself stands on the chariot among the middle part corps and commands the whole army) (爲文王木主載以車中軍, 武王自稱太子發)

From this document, we can infer that the Shang military forces must have kept well-trained troops and excellent strategies when operated the large military forces composed of between 3000 and 5000 men.

Conclusion

Ko-halberd as a basic and important weapon of the Shang military forces contributed to the development of Shang dynasty, and also the successive Chou and the Warring States recognized its efficiency in the war and contrived new type 'chi' (May 7, 1982).



Acknowledgement

I wish to express my gratitude to my adviser, Prof. K.C. Chang, Dept. of Anthropology, Harvard Univ. for reading this small paper and correcting errors during my stay at Cambridge.

〈追 補〉

中國戈에 대하여

崔 夢 龍

필자는 일찌기 한국에서 발견된 銅戈에 대해 관심을 가지고 그들의 型式分類를 통해 기원 및 연대문제에 대해 언급해 본 적이 있다. (崔夢龍, 〈韓國銅戈について〉 朝鮮考古學年報 2, 東出版, 1971, pp. 21-41).

여기에서 필자는 우리나라에서 발견되는 戈의 조형을 찾기위한 시도로서 중국의 商나라 부터 발견되는 戈를 정리해 보았다. 그러나 그러한 시도에 대해 만족할만한 결과를 얻지 못하였고, 중국戈가 발견되는 역사적 사회적 배경을 파악해 보았다는데서 필자 나름대로 자위를 해본다. 우리나라戈의 기원이나 조형문제에 대하여는 앞으로 기회 있는대로 다시 언급하고자 한다.

Bibliography

Amano Motonosuke

1953. "Some problems related to the industry of the Shang dynasty" *Tohogakuho* 23, Kyoto: 231-258.

An exhibition from the People's Republic China

1980. *Treasures from the Bronze age of China*, The Metropolitan Museum Chang K.C.

1977. *The Archaeology of Ancient China*, Yale press

1980. *Shang Civilization*, Yale Press

Ch'en Meng-chia

1956. *Synthesis of the oracle bone of the Shang dynasty*: Peking Science press
Cheng Te-k'un

1960. *Shang China*, Archaeology in China vol. 2: Cambridge: Heffer,
Chu Fang-p'u

1933. *Oracle bone inscription*, vol. 12:12 peking
Hayashi Minao
1966. "The flags before the Ch'in dynasty" *Shirin* 49, 234-262.
1972. *Weapons of Yin and Chou dynasty*: Kyoto Univ.
- Keightly David N.
1978. *Sources of Shang History*, The oracle-bone inscriptions of Bronze Age China: Univ. of California Press
- KK (AIAS)
1976. "Bronze vessels and jades newly discovered from Ehr-lit'ou, Yen-shih"
No. 4: Peking
- Li Chi
1950. "Typological Studies of the Bronze Kou-ping (Chinese halberd) excavated from Northern Honan, with a classified and illustrated list" *BIHP, Academica Sinica* vol. 22:1-18.
1957. *The Beginnings of Chinese Civilization*: Univ. of Washington Press
1977. *Anyang*: Univ. of Washington Press
- Liang Ssu-yung and Kal Ch'uhsun
1962. *Hou-chia-chuang 1001*, Taipei: Institute of History and Philology, Academica Sinica
1967. *Hou-chia-chuang 1003*, Taipei: IHP Academia Sinica
1970. *Hou-chia-chuang 1004*, Taipei: IHP Academia Sinica
- Ma Heng
1930. "A Study of Ancient Chinese Bronze Weapons, ko and chi" *The East Asiatic Archaeological Association*: Tokyo
- Shih Chang-ju
1950. "Yin weapons in sets as excavated from Hsiao-t'un" *BIHP* Vol.22:19-84.
1955. "Casting technique of the Shang" *IHP* vol. 26:95-129.
1961. "*Hsiao-t'un, The Yin-Shang Site, Honan. Site at Ping tsu Section In papers presented to Mr. Tung Tso-pin on his Sixty-fifth birthday*, IHP Academica Sinica Taipei: 781-802.
1970. *Hsiao-t'un, The Yin-Shang site at Anyang, Honan: Burials of Northern Section*, IHP Academia Sinica No. 2.
1973. *Hsiao-t'un, The Yin-Shang site at Anyang, Honan: Burials of South-*

ern Section, IHP Academia Sinica No. 3.

Sun Hai-p'o

1937. *The Oracle bone Inscription*, Honan.

Tong Enzheng

1979. "Bronze dagger-ax (ge) in Southwest China" *Kaogu Xuebao* No. 4:
441-457.

Umehara Sueji

1936. *A Study on the Chinese Bronze Age* (translated by Hu Houhsuan)
Shang-wu co. China

WW (Wen Wu)

1976. Bronze artefacts discovered from P'an-lung-cheng site of Shang dynasty
No. 12:26-4.

WW (Wen Wu)

1977. Bronze artefacts of Shang dynasty discovered from Shan-hsi sheng
Ch'i-shan hsien, No. 12:86-87.