In 1977, archaeologists discovered the remains of a small east-west oriented city at the site of Wangchenggang 王城岗 in Dengfeng 登封 County, Henan 河南 Province, which dated to the late Longshan period. The eastern part of the site was largely washed away by the Wudu 五渡 River, however the remaining western part of the site covered an area of roughly 8000 sq m. Inside the city the archaeologists discovered rammed earth structures which contained sacrificial victims in their foundations, as well as several fragmentary pieces of bronze. Based on inscriptions and the archaeological discoveries of the time, the excavators suggested that this site may be the remains of the “Yangcheng 阳城” founded by the Xia sovereign: Yu 禹. In 1996–2000, a division of the Xia-Shang-Zhou Chronology Project, “Research on the chronology of Xia Period: the early Xia Period analysis” collected samples from the late Longshan area of the site in order to ascertain its C14 dates.

In 2002–2005, two new archaeological projects were initiated around the site: “The pre-research on the origins of Chinese civilization project” carried out a survey of the Longshan era sites surrounding Wangchenggang. The actual project later began archaeological work which focused on the periodization of the site, its structure, and settlement patterns in the surrounding area. During these two projects the ruins of a late Longshan period city was discovered. This city was found to have a surface area of over 300,000 sq m and was surrounded by a large moat. The northern wall of this city measured 350m long and 0.5–1.2m high. The northern moat measured 620m long, 15m wide and roughly 5m deep. The western moat measured 135m long, 15m wide and 1.5–2m deep. From the surrounding geography and cores taken across the site it became clear that the other moats and walls had been destroyed.

During the excavation of the site we discovered late Longshan period sacrificial pits, jade cong 琮 tubes, and white ceramics: all of which point to the site’s importance and possible function as a central place in the region.

However, several questions such as the nature of the site of Wangchenggang and the relationship between the large and the small cities have been topics of interest in the scholarly world. This article will discuss each of these themes.

The Dating of the Larger Walled-site at Wangchenggang and Its Moat

In order to obtain the relative dates for the larger site at Wangchenggang and its moat we will examine the stratigraphic relationship of the cultural material found within the wall of the site and its moat.

Units W5T0669 and W5T0670 indicate that the stratigraphic relationship of the wall of the site is the following:

\[
W5T0669Q1 \rightarrow Q1 \rightarrow H87 \text{ and } H84 \rightarrow Q1 \rightarrow H72 \text{ and } H74 \rightarrow Q1
\]

The cultural deposits contained within these deposits show that these layers are associated with the Longshan period.

The following stratigraphic relationships were obtained from units W5T0672 and W5T0673:

\[
HG4 \rightarrow HG2 \rightarrow W5T0672 \rightarrow HG1 \rightarrow W5T0672 \rightarrow W5T0672H76 \text{ and } H77 \rightarrow W5T0672
\]

The cultural material contained in level HG4 dates to the Spring and Autumn period, whereas layer HG2 is related to the Erlitou 二里头 culture. The remaining layers are associated with the Longshan period.

If one looks at the stratigraphy of the cultural mate-
rial contained in the excavation units associated with the wall of the city and its moat (layers W5T0669, W5T0670, W5T0672, and W5T0673) one can roughly divide them into three different groups. The first group is composed of the following layers: W5T0669H87, H84, W5T0669 ⑨, W5T0670H72 and H74, W5T0670 ⑨, W5T0672H76 and H77, and W5T0672⑨. The second group contained layers W5T0669Q1, W5T0669⑧, W5T0670Q1, Q1 ①, Q1 ②, HG1, and W5T0672 ⑧. Only one layer is associated with the third group W5T0670 ⑤.

We will discuss the relative and the absolute dates of the site and its moat separately.

1. Relative dating

A ceramic ding 鼎 tripod discovered in the layers of the first group is similar to one in the 1992 report on Wangchenggang. The latter ding dates to the second period of the Longshan culture (From now on first, second and third periods will all refer to phases of the Longshan culture) (Figures 1:1 and 3). Other objects include a coarse pottery guan 罐 jar (Figures 1:2 and 4), an earthen weng 瓮 urn (Figures 1:5 and 7), an earthen bo 鏢 bowl (Figures 1:9 and 12), a bowl (Figures 1:10 and 13), a basin (Figures 1:16 and 19), a bent bellied basin (Figures 1:15,17 and 18), a bowl-shaped basin (Figures 1:11 and 14), and a dou 豆 stemmed bowl (Figures 1:6 and 8): all of which have similar counterparts in the second period. We can therefore say that the relative dates of this first grouping of stratigraphic units correspond to the second period of the Longshan cultural complex. This group of stratigraphic layers is situated under the wall and the moat which provide the terminus ad quem for this first grouping. The moat and its associated wall are thus later in date than this first stratigraphic group.

<table>
<thead>
<tr>
<th>The first group from the larger walled site at Wangchenggang</th>
</tr>
</thead>
</table>

Figure 1. Comparable chart of ceramic assemblages of the first group from the larger walled site at Wangchenggang and Phase II of Wangchenggang Longshan culture.

1, 3. ding tripods 2, 4. guan jars 5, 7. weng urns 6, 8. dou stemmed plates 9, 12. bo bowls 10, 13. bowls 11, 14. bowl-shaped basins 15, 17, 18. basins with bent body 16, 19. basins with curved body
The second group contains several cultural remains that are contemporaneous with the third period of the site. These include a *ding* (Figures 2:1–4 and 7), a *weng* (Figures 2:5 and 8) a *bo* (Figures 2:10, 11, 14 and 15), a similar array of bowls (Figures 2:12, 13, 16 and 17), a basin with bent belly (Figures 2:19 and 21), a bowl-shaped basin (Figures 2:6 and 9) and *dou* (Figures 2:18 and 20). One can thus date the remains from this layer to that of the third period of the site. Both the wall of the site and its moat are associated with this period.

The third group contains cultural remains which are associated with the forth period of occupation at the site. These include *ding* (Figures 3:1, 2 and 4), coarse paste *guan* (Figures 3:3 and 5), *weng* (Figures 3:6 and 8), *bo* (Figures 3:11 and 14), bowl (Figures 3:12 and 15), bowl-shaped basin (Figures 3:10 and 13) and *dou* (Figures 3:7 and 9). We can therefore reason that the relative dates of the third group are roughly contemporaneous to the forth period of Longshan occupation. Both the moat and the wall are situated underneath this third group thus making it the *terminus ad quem* for the city site’s moat and wall.

---

*Figure 2. Comparable chart of ceramic assemblages of the second group from the larger walled site at Wangchenggang and Phase III of Wangchenggang Longshan culture*

2. Absolute dating

We can use radiocarbon dates to discuss the absolute dating of the wall and moat of the site of the larger urban center at Wangchenggang. The $^{14}$C dates obtained from the second period of the Longshan occupation of the site are as follows (all of the following dates are calibrated $^{14}$C dates): T157 Foundation No. 6 dates to 2132–2082 BC; T179 Foundation No. 8 dates to 2128–2084 BC. The median of the range of these years is 2107 BC for the first unit and 2106 BC for the latter. The Xia-Shang-Zhou Chronology Project places the date for the beginning of the Xia Dynasty in 2070 BC and we can see that these units correspond to this period. The smaller city at Wangchenggang dates to the second period of the Longshan era, thus approaching in time the beginning of the Xia Dynasty.

The radiocarbon dates for the third period of the Longshan occupation are as follows: excavation unit T31H92 dates to 2090–2030 BC and excavation unit T179H470 dates to 2090–2030 BC. The median date of both of these radiocarbon dates is 2060 BC. The usage period of the city wall and moat of the larger site dates to this period, within the early period of the Xia Dynasty. We can thus hypothesize that the larger city at Wangchenggang is the earliest and the largest site in the Xia period.
The radiocarbon dates for the forth period are 2050–1985 BC for excavation unit T92H192, 2038–1998 BC for excavation unit T242H536, and 2041–1994 BC for excavation unit T154H418. The median for these dates is 2017 BC or 2018 BC. These dates are within the chronological period of the Xia Dynasty. The layers covering the wall of the larger town and its moat date to this period, suggesting that the city was already abandoned during this period.

The Relationship between the Larger and Smaller Walled-sites at Wangchenggang

In terms of location of the two walled-sites: the smaller wall-site is situated to the northeast of the larger one. Both walled-sites are roughly oriented in the same direction suggesting that there was some degree of planning in their construction. Both walled-sites also share similar methods of construction: in both cases pure yellow earth was used to create layers of similar thickness and holes of ramming. River pebbles were found in the layers of both walls, indicating that these pebbles were used as tools to compact the earth. The cultural material contained in the walls of both sites clearly dates to the late Longshan period.

In the area W5T2873 we found that the northern wall of the larger walled-site intruded the northwestern corner of the smaller town. We already know that the smaller walled-site dates to the second period of the Longshan era. A comparative study of the material in the two cities indicates that the larger one dates to the third period of the Longshan era. It is however worth noting that remains of both the third and forth periods are found within the smaller site, indicating the inhabitants of the larger site still continued to use the smaller site.

The Nature of the Walled-site of Wangchenggang

Late Longshan remains were discovered at the site of Wangchenggang as early as the 1970’s and at the time some scholars believed that this site was the ruins of the capital (of the sovereign of the Xia Dynasty): Yu. Consequently, the region to which the site belongs (a late Longshan culture) was deduced to be the remains of the early Xia Dynasty. But other scholars opposed this point of view on the basis that they believed the site was less than 100m in its length and width and would thus seem too small to be the capital of this illustrious dynasty. In the last decade or so, many discoveries of Longshan period cities have been made in Henan and surrounding areas. All of these sites are much larger than the smaller walled-site at Wangchenggang, which dealt a blow to the contention that this walled-site was the capital. The larger walled-site at Wangchenggang, which is considered the largest of all walled-sites dating to the Longshan culture ever discovered in Henan Province, has lent new support to the idea that the later Longshan sites were in fact the remains of the Xia Dynasty and that the larger urban center was its first capital.

Scholars have used published archaeological material to discuss the nature of the smaller site at Wangchenggang. The excavator of the smaller site Mr. An Jinhuai 安金槐 suggested that the late Longshan period site at Dengfeng, may be the “Yudu Yangcheng” or “Yuju Yangcheng” city of the Xia Dynasty. Mr. Sun Zuoyun 孙作云 reasoned that the Wangchenggang walled-site is the capital Yudu Yangcheng because all of the legends of Gun 鲧, Yu and Qi 启 were situated in this region...the Yangcheng of the Warring States period was confirmed to be in the northeast part of Gaocheng 告城 Township of the Dengfeng County; therefore, isn’t the “Yudu Yangcheng” (Yu Capital Yangcheng) mentioned in the Guben Zhushu Jinian 古本竹书纪年 and the Shiben 世本 texts of the Warring States Period in the vicinity of the Yangcheng they mentioned? It is thus possible that the ancient walls and foundations discovered at the site of Wangchenggang... are not only possibly the capital of the sovereign Yu but may also be the capital founded by the sovereign Gun... However the archaeological material cited in support of these perspectives were all from the smaller walled-site of Wangchenggang. When we face the new discovery of the large walled-site of Wangchenggang, we must now re-examine our previous material and opinions regarding this site.

In an experimental simulation we calculated that using the stone tools of the period, in order to construct this 300,000 sq m walled-site, it would have required 1000 healthy young men working an eight-hour day for a period of fourteen months. If supervision, measuring, design personnel, as well as logistics maintenance were added to this figure, the number of people needed to
work to construct this site, is far beyond what Wangchenggang habitation site itself could have accommodated. It would thus have been necessary to conscribe labor from an even larger region. Therefore, it is possible that the upper reaches of the Ying River 颖河 was home to a settlement pattern in which the site of Wangchenggang operated as a central place. Such a society would have already benefited from a high degree of complexity. Using estimates based on our knowledge of the contemporary countryside in the region, we calculated that in a normal year a village can provide a labor force of 50–100 healthy young men. In order to build a city of this size in a year, it would have been necessary to obtain labor from 10–20 villages in order to complete this task. This number corresponds neatly to the number of sites that were discovered by our surveys in the region. Hence, it is probable that the late Longshan site of Wangchenggang mobilized the population of surrounding settlements to complete its urbanization.

The larger walled-site at Wangchenggang is the largest late Longshan period site in Henan. The sacrificial pits contained within this site, the jade cong, as well as the presence of white ceramics all suggest that this site was the central place of the south east foothills of the Song Mountains 嵩山 and the upper Yinghe River valley. As the historical mentions of the Xia sovereigns Gun, Yu and Qi all concentrate in this region, we believe it is possible that the smaller urban center at Wangchenggang was the capital constructed by Gun and the larger capital was the “Yangcheng” constructed by his successor Yu.

Reference Works


Note: The original paper, published in Kaogu 考古 (Archaeology) 2006.9: 16–23 with three illustrations, is written by Fang Yanming 方燕明. This summary is prepared by the original author and English-translated by Jade Guedes.