

The burial M90 of Songze Culture at Dongshancun Site in Zhangjiagang City, Jiangsu

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Abstract

The tomb M90 at Dongshancun Site in Zhangjiagang City is a vertical earthen shaft pit burial in rectangular plan, from which 65 pieces or sets of grave goods were unearthed, including pottery wares, jades and stone implements, making this burial yield the most artifacts in the burials of Songze Culture excavated to date. The date of this burial is about 5800 BP, or the early stage of the early phase of Songze Culture. The high-ranking large burials represented by M90 found at Dongshancun Site filled the gap of the archaeological discoveries of high-ranking burials of Songze Culture and advanced the emergence of the military or royal powers represented by stone *yue*-battle axes and stone adzes from the mid and late phases of Songze Culture to the early phase; the important phenomena such as the separate arrangements of burials of different ranks advanced the date of the major transformation of the prehistoric society, which has been widely accepted by the academic field, for at least 300 years.

Brief introduction of the site

The Dongshancun Site is located to the north of Dongshan Village, at the Nansha Sub-district of Jingang Town in Zhangjiagang City, Jiangsu Province, lying to the east of Xiangshan Hill. In 2008 and 2009, with the authorization of the State Bureau of Cultural Heritage, the site underwent two seasons of rescue excavation. The work covered mainly the courtyard of the Nansha Sub-district Office and the nursery of young plants to its west. The excavation area was divided into three parts, which were numbered Zones I, II and III and occupied about 2300sq m in total.

The excavation revealed mainly a settlement site of the Songze Culture period. The vestiges include house

foundations, burials and ash pits. Zone I embraces 22 small-sized burials. Zone II is a residential area consisting of five house foundations. Zone III is a cemetery with 10 large-sized and five medium-sized graves, among which burial M90 is the largest in scale and the richest in grave goods.

Burial structure

M90 lies at the center-to-south of Excavation Grid T0610 in Zone III of the site (Figure 1). The cultural deposits of this area consist of six layers, of which the fourth and fifth layers belong to the Songze Culture period; the sixth layer is accumulations left over from the Majiabang Culture. M90 is opened beneath the fifth layer and intruded into the sixth one.

This is a rectangular earthen pit grave with an orientation of 340°, a length of 3.05m and a width of 1.7–1.8m for the opening, and, for the bottom, a measurement of 2.95 × 1.6–1.7sq m and a depth of 0.4m below the present ground (Figures 2 and 3). The grave is filled with grayish-black earth plus burnt clay clods. The revealed human bones are largely rotten away except for the skull, but still it can be made out that the tomb occupant was buried roughly in the middle of the grave bottom, a little to the west.

The funeral objects in the tomb number 65 pieces or sets, including 33 (pieces or sets) pottery vessels, 19 jades and 13 stone implements. The pottery vessels are largely

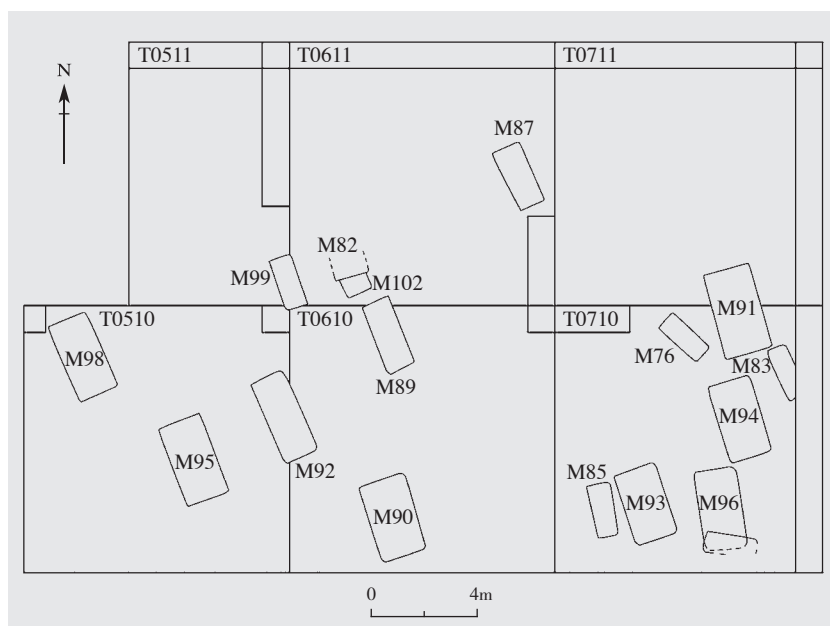


Figure 1 The location of burial M90 in the excavated area.

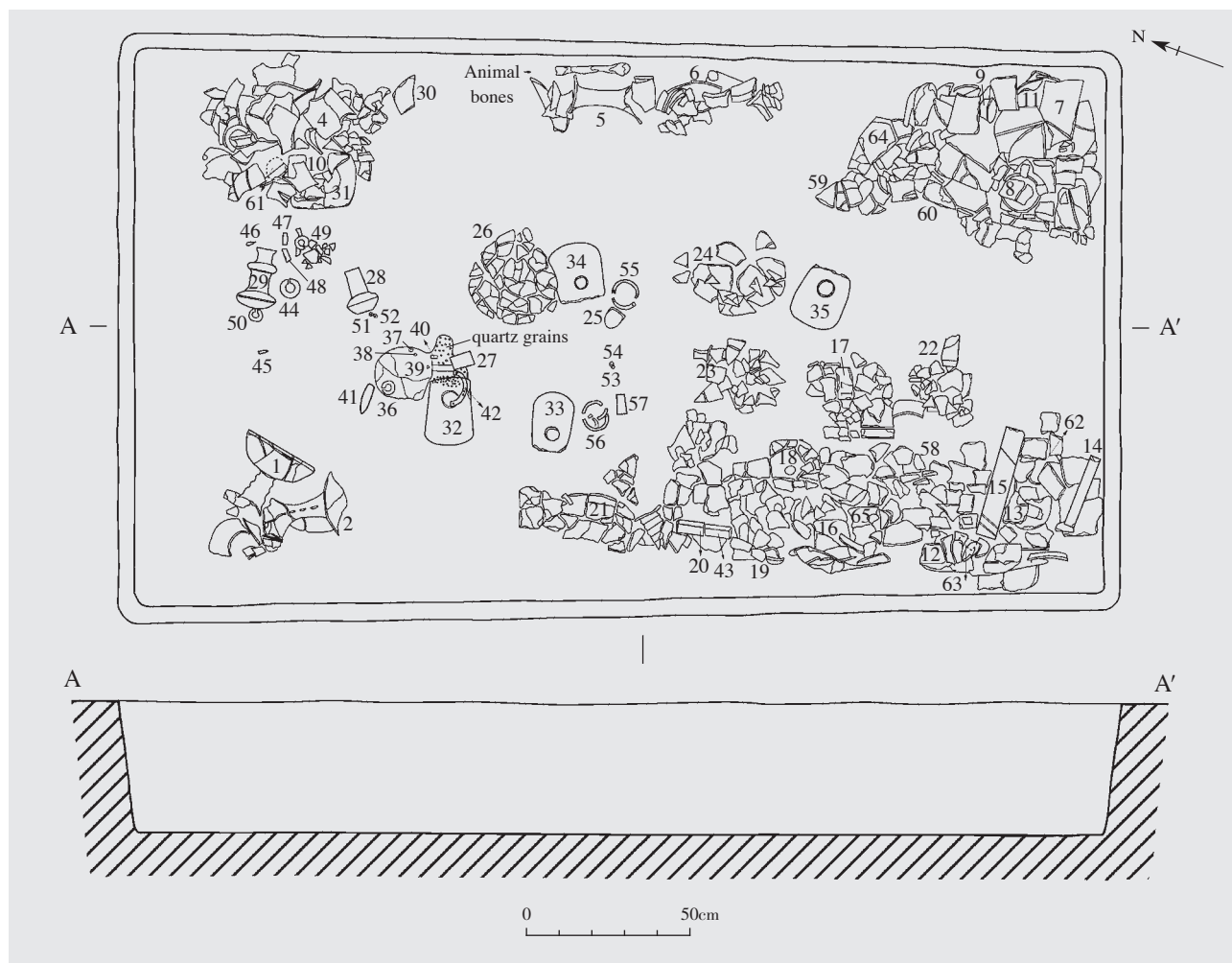


Figure 2 Plan and section of burial M90.

1, 2, 5, 11, 21, 30, 58 and 63. Pottery *dou*-stemmed bowls; 3, 8, 10, 12, 16, 17, 19, 62 and 64. Pottery jars; 4, 22, 28 and 29. Pottery pots; 6 and 13. Pottery *ding*-tripods with spade-shaped legs; 7. Round-bottomed pottery vat; 9, 59 and 60. pottery *gui*-pitchers; 14. Stone chisel; 15 and 57. Stone adzes; 18; Pottery vat with pointed-bottom; 20, 25, 27 and 43. Whetstones; 23 and 61. Pottery *ding*-tripods with chisel-shaped legs; 24. Pottery basin; 26. Pottery plate; 31–35. Stone *yue*-battle axes; 36, 44 and 49–52. Jade *jue*-earrings; 37, 53 and 54. Knob-shaped jade ornaments; 38–40 and 47. Jade tubes; 41. Stone awl; 42. Jade *huang*-semicircular pendant; 45 and 46. Triangular jade ornaments; 48. Tubular jar ornament; 55 and 56. Jade bracelets; 65. Bowl of pottery *dou*-stemmed bowl.

put around the tomb occupant, mainly on the two sides of the body and in the four corners of the grave bottom. Among them are two large-mouthed vats, one is put in the southeastern corner, the other is on the western side of the pit, roughly in the middle, a little to the south.

The jades are chiefly put on the tomb occupant's head, to its upper left and at the two wrists. The stone implements are largely put on the two sides of the tomb occupant's body, and also in the southwestern and northeastern corners of the pit. A lot of quartz grains were discovered around the mandible and neck, and a reddish-brown stone awl was found on the right upper of the skull (Figures 4–6).

In addition, a number of broken animal bones were

revealed near the middle of the eastern pit wall, but their species is difficult to determine for they have badly rotten.

Unearthed artifacts

1. Pottery (excluding the jar M90:62 that could not be reconstructed owing to its great damage).

The *ding*-tripods with spade-shaped legs, two pieces. They belong to reddish-brown sandy ware. Either has a jar-shaped body with a round lip, an out-bent rim, a curved belly, a round bottom and high legs. M90:6 features slanting shoulder and a sagging belly and measures 21.8cm in mouth diameter and 25.9cm in height (Figure 7).



Figure 3 Burial M90 (NE-SW).



Figure 4 Head of the occupant of burial M90 (E-W).



Figure 5 Detail of burial M90 (E-W).

The *gui*-pitcher, three pieces. They belong to fine clay ware. Each has a flaring mouth, a pointed round lip, a contract lower belly, a round bottom and a chisel-shaped handle attached to the upper part of one of three chisel-shaped legs. M90:9 is grayish-black on the whole but reddish in the body. It features round shoulder, a round belly and a shallow round bottom, and measures 7.2cm in mouth diameter and 24.2cm in height (Figure 8).

The *dou*-stemmed bowls, eight pieces. They belong to fine clay ware and feature a contract mouth and a flared ring foot. M90:1 is a reddish-brown vessel with a round lip, a deep contract belly and a bamboo joint-shaped stem, which bears five groups of thin bowstring patterns, each of which is decorated with four curvy shallow holes. The



Figure 6 Detail of burial M90 (W-E).

whole vessel measures 23.2cm in mouth diameter and 23cm in height (Figure 9). M90:2 also belongs to reddish-brown ware but features a pointed round lip, a carinated bowl and a contract-waisted stem, which is decorated with four groups of concave bowstring patterns; each group bears four rectangular shallow holes. The mouth diameter measures 23.2cm, and the height 23cm (Figure 10). M90:5 belongs to grayish-black ware and has a round lip, a shallow carinated plate and a high slender stem decorated with four groups of thin concave bowstring patterns that bear a round shallow hole on the third group of bowstrings. It measures 15.8cm in mouth diameter and 24.8cm in height (Figure 11).

The red pottery jars, six pieces. M90:3 is a red-slipped fine clay vessel. It has a flared mouth, a rounded lip, a

high contract neck, slanting shoulder, a flat belly and a large flat bottom. The mouth diameter measures 12.7cm and the height 18.6cm (Figure 12). M90:12 is also a red-slipped fine clay vessel. The mouth is flared, the lip squared, the neck narrowed, the shoulder bulging, belly round and bottom are flatten. It measures 13.5cm in mouth diameter and 18.1cm in height (Figure 13).

The grayish-black jar, three pieces. They belong to clay ware and each has a flared mouth, a rounded lip and a flatten bottom. M90:8 is a black vessel with a contract neck, carinated shoulder, a carinated belly and bears thin bowstring patterns on the shoulder and belly. The mouth is 11cm in diameter and the whole body 19.2cm in height (Figure 14). M90:64 is a gray jar and has a contract neck, carinated shoulder and a carinated belly. It



Figure 7 Pottery *ding*-tripod with spade-shaped legs (M90:6).



Figure 8 Pottery *gui*-pitcher (M90:9).



Figure 9 Pottery *dou*-stemmed bowl (M90:1).



Figure 10 Pottery *dou*-stemmed bowl (M90:2).



Figure 11 Pottery *dou*-stemmed bowl (M90:5).



Figure 12 Red pottery jar (M90:3).



Figure 13 Red pottery jar (M90:12).



Figure 14 Grayish-black pottery jar (M90:8).

is decorated with three sunken bowstring patterns below the rim. The mouth diameter is 8.8cm and the height 16.8cm (Figure 15).

The pots, four pieces. They belong to clay ware. Each has a slightly flared mouth and a flat bottom. M90:28 is black in body and features a pointed round lip, a thick long neck and a flat carinated belly. It bears thin sunken bowstring patterns below the neck and measures 5.5cm in mouth diameter and 14.1cm in height (Figure 16). M90:29 is gray in body. It has a pointed round lip; the upper belly is bulging while the lower part is flat and carinated; the bottom is slightly concaved inward. On the belly are thin sunken bowstrings. The mouth diameter measures 6.3cm and the height 18.2cm (Figure 17).

The pointed-bottomed vat, one piece (M90:18). It is a red sandy vessel. The mouth is wide, the lip is round with a slightly curved rim, and the belly is a deep cylinder.



Figure 15 Grayish-black pottery jar (M90:64).



Figure 16 Pottery pot (M90:28).

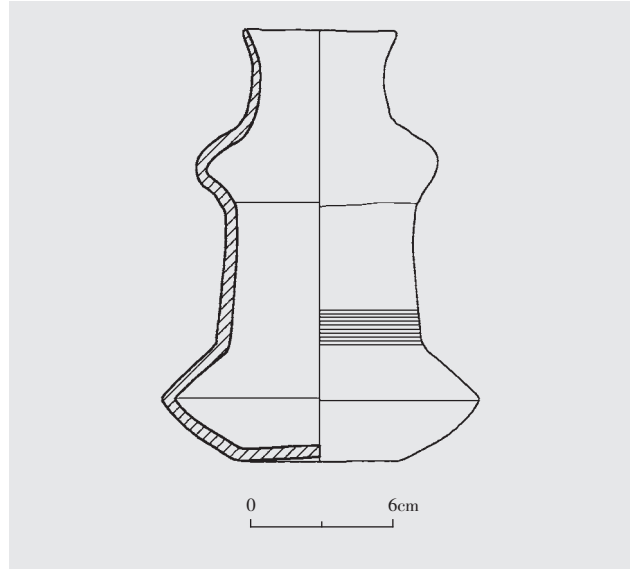


Figure 17 Pottery pot (M90:29).



Figure 18 Pointed-bottomed pottery vat (M90:18).



Figure 19 Round-bottomed pottery vat (M90:7).

Below the rim are two unsymmetrical cockscomb-shaped lugs. The mouth diameter measures 29cm and the height, 52.1cm (Figure 18).

The round-bottomed vat, one piece (M90:7). It belongs to red sandy ware. The mouth is flaring, the lip round, the cylindrical belly deep, and the bottom round. It measures 35.2cm in mouth diameter and 48.4cm in height (Figure 19).

In addition, there are a basin and a plate.

2. Stone implements, including the *yue*-battle axes, adzes, chisel, pebble and awl.

The *yue*-battle axes, five pieces. Each has a rounded square or trapezoidal body with a short tongue-shaped bifacial edge and a tube-drilled round hole. The surface is smoothly polished. M90:31 is made of lapillus tuff. The top is slightly flattened and bears flake scars resulted from percussion. When it was unearthed, some imprints of red color designs were seen in the soil beneath the ax. The whole artifact measures 19.4cm in length and 19.1cm in maximum width (Figure 20). M90:32 is made of volcanic tuff. It is 20.2cm in length, 11.2cm in upper body width and 13.5cm for the lower part (Figure 21).



Figure 20 Stone *yue*-battle ax (M90:31).



Figure 21 Stone *yue*-battle ax (M90:32).

The adzes, two pieces. The top is not retouched, but the rest parts are well polished, and the flat edge is unilaterally trimmed. M90:15 is made of mudstone; the body is slender rectangular and large, measuring 34.3cm in length and 6.8cm in maximum width (Figure 22).

The awl, one piece (M90:41). Its color is dark purple. According to an analysis by the Laboratory of Scientific Archaeology & Cultural Relics of the School of Archaeology and Museology of Peking University, the composition of the object is mainly iron ore, which can be converted into Fe_2O_3 with the content reaching 90%, and the rest component part belongs to silicate ore. This object is shaped like a circular cone with a tiny flat point and small scars. The whole body measures 8.4cm in length (Figure 23).



Figure 22 Stone adze (M90:15).



Figure 23 Stone awl (M90:41) in situ.

3. Jades, including the *huang*-semicircular pendant, bracelet, *jue*-earring, tube and some other ornaments.

The *huang*-semicircular pendant, one piece (M90:42). It is made of tremolite-actinolite with pyrophyllite and serpentine. In color it is milky white with penetrating brown spots. In shape it is semicircular with rounded inner and outer sides. Either end has a unilaterally drilled hole. The body has been broken into two sections. On either part, near the breakage there remains a bifacial cross perforation; between the perforation openings is a shallow groove, which was used for tying the broken parts back together. It measures 10.1cm for the outer diameter and 7.3cm for the inner one (Figure 24).

The bracelets, two pieces. M90:55 is made of serpentine. It is milky white with penetrating dark green spots.

The outer edge is made thinner, and the cross-section is approximately triangular. The body was also broken into two sections and restored by means of perforating and tying. The outer diameter measures 7.3cm (Figure 25).

The *jue*-earrings, six pieces. M90:36 is made of tremolite with high aluminum content. The material is white with translucent green stains; the cross-section is approximately rectangular. The outer diameter measures 4.2–4.8cm (Figure 26). M90:44 is made of translucent quartzite with opal and trace gibbsite. The cross-section is roughly triangular. The outer diameter measures 5.9cm (Figure 27).

The tubes, four pieces. M90:38 is milky white with a few brown stains. The body is short and nearly cylindrical, and has a unilaterally drilled hole. The diameter is about 1cm and the length about 0.5cm (Figure 28). M90:40 is made of translucent quartzite with gibbsite, opal and trace brucite (i.e. chalcedony).

The body is an approximately elliptic cylinder and has a bifacial hole perforated from the ends. The length measures about 3.8cm (Figure 29).

The tubular ornament, one piece (M90:48). It is made of translucent chalcedony. The body is a trapezoidal cylinder. At either end there is a bifacial cross hole that leads to the central tube. The length measures 4.2cm (Figure 30).

The knob-shaped ornaments, three pieces. M90:37 is made of tremolite with serpentine. The body is dark green and slightly translucent. The upper part is semispherical; the lower part is a disc. The height measures 1cm (Figure 31). M90:54 is made of serpentine with daphnite and a high content of aluminum. It is grayish-white with dark green stains. The body is flared with a vertical perforation through the center. It measures 2cm in the upper diameter, 1.3cm in the lower diameter and 0.9cm in height (Figure 32).



Figure 24 Jade *huang*-semicircular pendant (M90:42).



Figure 25 Jade bracelet (M90:55).



Figure 26 Jade *jue*-earring (M90:36).



Figure 27 Jade *jue*-earring (M90:44).



Figure 28 Jade tube (M90:38).



Figure 29 Jade tube (M90:40).



Figure 30 Tubular jade ornament (M90:48).



Figure 31 Knob-shaped jade ornament (M90:37).

Conclusions

1. The date of the M90.

The burial M90 yielded 65 pieces or sets of pottery, jade and stone artifacts in total. It comes first in the number of grave goods among the Songze Culture burials discovered to date; a lot of object types were brought to light from related cultural sites in the surrounding areas.

The pottery *ding*-tripod with spade-shaped legs (M90:6) is similar to that from tomb M18 of the Songze Site (M18:2), either has a carinated rim and a sagging belly. The latter belongs to Phase II of the mid layer of the Songze Site according to the chronological report. The pottery *dou*-stemmed bowl associated with M18:2 features a flared high stem that shows clear inherited style from the Majiabang Culture and so can be attributed to the early stage of the Songze remains. Another *ding*-tripod



Figure 32 Knob-shaped jade ornament (M90:54).

with spade-shaped legs (M90:13) is somewhat different from the *ding* unearthed at the Shimadou Site (M67:2) for the former is flat-legged while the latter's legs are fish fin-shaped and laterally attached to the body that, however, is exactly the same as that of M67:2 in shape. Burial M67 on the Shimadou Site goes back to the earlier stage of the early Songze Culture according to the dating report.

The Dongshancun pottery *dou*-stemmed bowl M90:2 has a carinated shallow plate and a high stem with slender bowstring patterns and long narrow perforations. It extremely resembles the *dou* M13:4 and M21:13 unearthed at the Songze Site, M5:3 at the Xuejiagang Site and M49:2 at the Shimadou Site. Burials M13 and M21 of the Songze Site belong to, respectively, Phases II and I of the mid layer of the Songze Site, while burial M5 of the Xuejiagang Site goes back to Xuejiagang I, also corresponding to the earlier stage of the Songze Cemetery, and burial M49 on the Shimadou Site dates from the early stage of the Songze Culture. That is to say, except for burial M13 of the Songze Site that has been dated a little later, the above stated burials are roughly identical in chronology.

The Dongshancun pottery *gui*-pitchers M90:6 and M90:9 are roughly the same as that from a burial of the Xuejiagang Site (M5:1). The latter is dated to Xuejiagang I, i.e. corresponding to the slightly earlier phase of the mid layer of Songze Site.

The Dongshancun Site pottery pot M90:4 resembles M5:5 of Xuejiagang Site and M30:3 of Songze Site, each having carinated shoulders and a carinated belly. M5 of Xuejiagang Site belongs to Phase I of Xuejiagang according to the dating report, corresponding to the slightly earlier phase of the mid layer of Songze Site, and M30 of the Songze Site is also dated to Phase I of the mid layer of Songze Site.

Based on the above comparisons it can be concluded that in date M90 is roughly corresponding to the tombs M13, M18, M21 and M30 of the Songze Site, M5 of the Xuejiagang Site, M49 and M67 of the Shimadou Site and M53 and M118 on Xingang Site, i.e. belong to the early stage of the Songze Culture. Presently most researchers believe that the Songze Culture covered the time from 6000 to 5100 BP with 5500 BP as the demarcation line between its early and late stages. Thus tomb M90 of the Dongshancun Site should be dated to the temporal scope from 6000 to 5500 BP.

For testing the absolute date of the Songze Culture, we sent 10 dating samples (four charcoal samples, four human bones and two animal bones) to Rafter Radiocarbon Laboratory of GNS Science, New Zealand. As the human and animal bones were badly rotten, no test specimen could be obtained from them, but the four charcoal samples were successfully tested. The results show that M92 and M90 are corresponding to each other chronologically. Their ^{14}C date is 5037 ± 25 BP, or 5893–5718 BP for the calibrated data. To sum up the above analysis, the absolute date of M90 is roughly 5800BP or so, i.e. in a slightly earlier stage of the early phase of the Songze Culture.

2. Academic significance.

The high-ranking large-sized burials of the Dongshancun Site constitute to date one of the most important archaeological discoveries of the Songze Culture period. They provided new archaeological data for re-understanding the procedure of social civilization in the lower reach of the Yangtze River and for re-investigating the development level of the prehistoric society in the circum-Lake Tai Basin.

(1) Although there have been discovered a number of burials on a lot of sites of Songze Culture, these burials are still lower in rank and reflect only the common development level of productive forces in the then society. In the Liangzhu Culture, high-ranking large-sized burials existed at the very beginning; in addition, a Liangzhu city site was discovered recently. Although the Liangzhu Culture was developed from the Songze Culture, the “sudden change” reflected by those remains was difficult to be rationally explained. The discovery of the high-ranking large-sized burials represented by M90 on the Dongshancun Site just filled up this gap and found out the origins of highly-developed social civilization in the Liangzhu Culture.

(2) Judged by the unearthed artifacts, M90 is the highest in rank and the richest in unearthed pottery among the burials of the Songze Culture excavated to date. Such pottery assemblage was not encountered in any excavated burials of the Songze Culture, especially the red sandy thick-bodied vat, which must have been for aristocrats' special use. The 19 jades also come first in number among the already excavated Songze Culture burials. They are largely made of tremolite, a sort of nephrite; the main techniques are thread cutting, stone core direct rotating grinding, sandstone drill-bit left and right alternately rotating grinding, etc. All finds are practical objects. The 13 stone implements were all well polished and bearing no use-wears. In addition, there is a stone awl, purplish-brown in color, the main component of which has been identified to be iron ore with high iron content. It was discovered to the upper right of the burial occupant's skull, and a pile of quartz grains plus a whetstone, etc. was discovered below the skull. These finds might have been a set of tools for jade working. The grave goods from M90 provided newest physical data for researching the shape, assemblage, making techniques and use of the artifacts in the Songze Culture period.

(3) In social nature, the high-ranking large-sized burials of the early and mid Songze Culture periods represented by M90 indicate that the formation of the military and royal power represented by the stone *yue*-battle ax and adze should be antedated from the mid and late Songze Culture periods to the early phase. The division of the burial zone on the site into two areas, respectively, for high-ranking large-sized and small-sized burials suggests that a clear social stratification had come into being, which pushes the date of the great prehistoric social transformation in ancient China from 5500 BP as generally believed in the academic circles to an earlier

time at least for three hundred years.

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Postscript

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