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The Neolithic remains of the Shuangta Site in Baicheng City, Jilin

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Abstract

From August to October 2007, the Research Center for Chinese Frontier Archaeology of Jilin University and Jilin Provincial Institute of Cultural Relics and Archaeology conducted a joint rescue excavation in the western part of the Shuangta Site in Baicheng, Jilin Province. Remains from the Phases I and II of the site belonged to the Neolithic Age. The remains of the Phase I include pits, ditches, postholes, potsherd deposits and burials. The surfaces of most of the pottery wares are plain and the shapes are not very regular, and part of the wares' surface showed that they were constructed by clay bar-coiling method. The ^{14}C analysis of the human bones and the TL measurements of the potsherds showed that the date of these remains was at least 10ka BP, which are the earliest Neolithic remains discovered so far in Northeast China. The remains of Phase II found in this excavation were only four burials. The grave goods include pottery wares and jades; the style of the jades is very similar to that of the Hongshan Culture, but the pottery wares have distinctive local characteristics very different from that. The tombs' structures and the burial customs have even greater differences with that of the Hongshan Culture. Therefore, these remains certainly belonged to a new archaeological culture.

Keywords: Neolithic Age; pottery, primitive; settlement archaeology; Shuangta Site (Baicheng City, Jilin Province)

Outline of the site

The Shuangta Site located to the north of the Third Community of Shuangta Village in Deshun Mongolian Township, Taobei District, Baicheng City is lying on a horizontally extending gentle highland with the Taorhe River flowing 4km away to the south (Figure 1). The highland is gently sloping and slightly undulating within a height of 5–6m above the surrounding ground. From its southern side to the bank of Taorhe River, there was a stretch of swamp, which nowadays has transformed into rice fields. According to ground survey, the cultural remains are mainly distributed on the highland summit and southern slope, covering an area 1200m long from the east to the west and 200m wide from the north to the south.

The site was discovered in a general investigation of cultural relics in 1960, and was affirmed through several times of resurvey. The gathered artifacts tell rich information, which covers the Neolithic and Bronze Ages and the Liao and Jin Dynasties, etc. As it is an important Neolithic site, for coordination with a comprehensive study subject of the Ministry of Education, in August to October 2007, the Research Center for Chinese Frontier Archaeology of Jilin University and Jilin Provincial Institute of Cultural Relics and Archaeology conducted a joint rescue excavation in the west part of the site, within the zone damaged in the course of local farmers fetching earth. The center of the excavated area is located on the coordinate at lat. 45° 23.676 N by long. 122° 57.122 E with a height of 149m above the sea level.

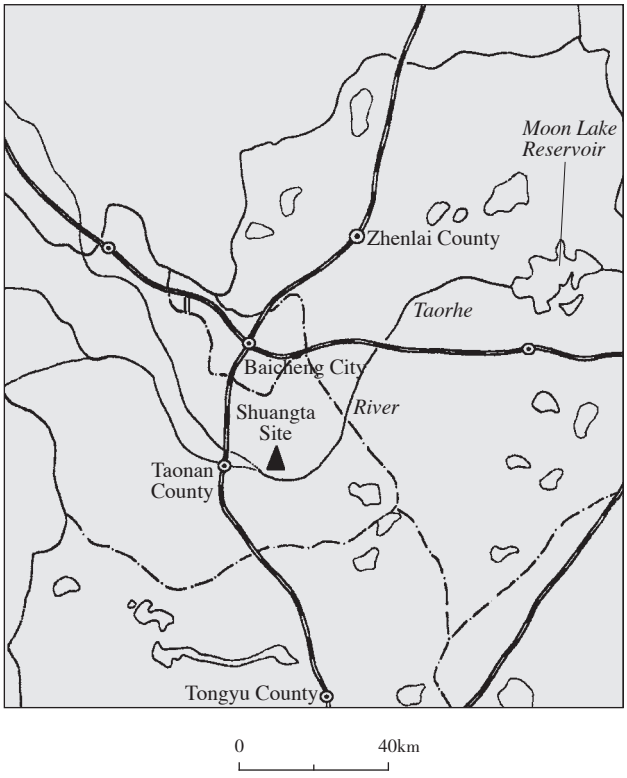

Figure 1 The location of the Shuangta Site.

Stratigraphy and periodization of the cultural remains

The western part of the site is divided into two localities by a gully in north-south direction. To the west of the gully is Locality I (Zone I); to the east, Locality II (Zone II). Altogether within the two zones, 58 excavation grids

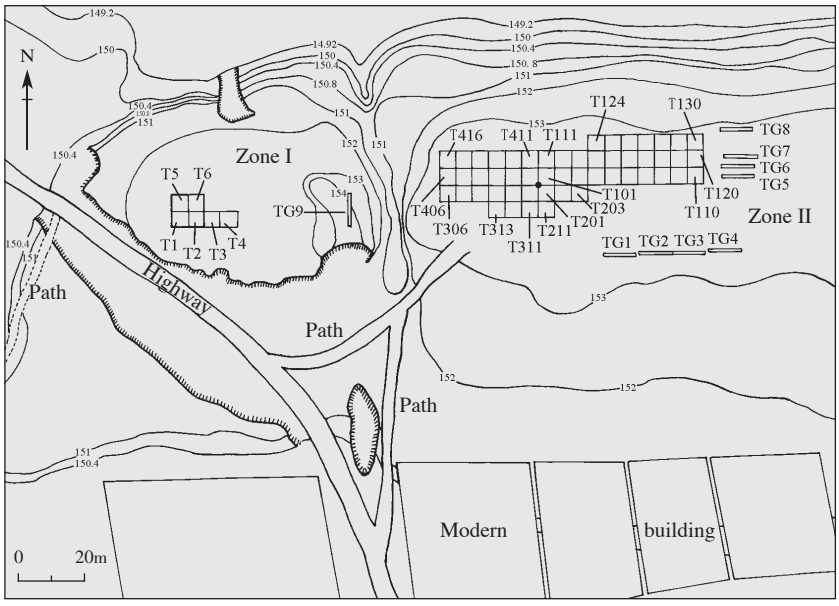

Figure 2 The distribution of the excavated areas of the Shuangta Site.

of 5m by 5m each were laid, and nine trial trenches, each 1m by 10m (Figure 2). The actual excavated areas measure 1 419sq m in total.

The stratigraphy of both zones showed quite simple condition. Only the first layer which was the ground soil and the second layer are commonly distributed in all of the excavated areas. In some grids of Zone II, a thin cultural layer appeared beneath the second layer. It is numbered the third layer. The second layer of Zone I and that of Zone II were originally linked together but later split by a gully. Below is a description of the stratigraphical accumulations with the northern walls of the excavation grids T411–416 and T111–120 of Zone II as examples.

The first layer: grayish-brown sandy soil, 0.05-0.3m thick, cultivated.

The second layer: dark gray sandy soil, 0-1.3m thick. The soil is dense and hard, and contains a lot of shells, animal bones, fish bones and potsherds.

The third layer: yellowish-brown sandy soil, 0-0.6m thick. The soil is spongy. It is distributed only in a few excavation grids. This layer contains some potsherds, fish bones, animal bones and shells.

According to the stratigraphical condition and an analysis to the unearthed artifacts, the cultural remains can be divided into three phases.

Phase I is represented by the second layer in all the excavation grids of Zones I and II and the third layer in some grids, as well as the vestiges discovered from there. The revealed vestiges are six ash pits (IIH1, IIH2, IIH3, IIIH4, IIH5 and IIH9), one burial (IIM10), two ash ditches (IIG2 and IIG3), 14 postholes (IID1–IID14) and two potsherd accumulations in the second layer (IIC1 and IIC2).

The remains of Phase II include four burials (IIM7, IIM8, IIM9 and IIM25).

The remains of Phase III consist of 25 burials (IM1, IIM1-IIM6, IIM11-IIM24, IIM26-IIM29) and one ash pit (IH1).

The vestiges of Phases II and III are all opened beneath the first layer and intruded into the second layer. Besides, there are four ash pits (IIH6, IIH7, IIH8 and IIH10) and an ash ditch (IIG1) yielding no datable artifacts, so their dates cannot be exactly determined yet.

Judged by the aspect and features of the finds, the remains of Phases II and III should be attributed to the Neolithic Age, while those of Phase III, to the late Bronze Age. The present report will take the remains of Phases I and II as the focal point of account.

Cultural remains of Phase I

1. Vestiges: Ash pits, ash ditches, postholes, potsherd accumulations and burials.

Six ash pits (IIH1–IIH6) are found. All are opened beneath the second layer of Zone II and intruded into the primary soil. In form two of them are in circular or oval plans and with round bottoms; three show the same in plans but with vertical walls; and one is indiscernible.

IIH2 lies a little to the east from the center of excavation grid IIT306. Its plan is roughly circular; the wall approximately vertical with a step in the middle of the western side; and the bottom slightly slopes from the west down to the east. In the pit are dark gray sandy soil accumulations with large yellow sandy clods, but the texture is fine and sponge. On the bottom is a hardened and impervious grayish-white calcareous stratum with a thickness of 0.02–0.06m. The unearthed matter includes quantities of fragmental fish bones and some potsherds and shells, and many fish gill covers appeared on the bottom. This indicates that the pit must have been a fish cellar. It measures 1.5–1.7m in mouth diameter, about 1.1m in bottom diameter and about 1m in depth (Figure 3).

IIH5 is located in the northeast of excavation grid IIT112. For the excavated part, the mouth is roughly rectangular; the wall and bottom are uneven. In the pit are accumulations of sponge dark gray sandy soil mixed with some yellow sandy clods. The contents are a lot of broken fish bones and some animal bones, shells and potsherds. The excavated part measures 3.75m in length, 1.74–2.4m in width and 0.3-1.1m in depth.

Two ash ditches are discovered (IIG3 and IIG2). IIG3 lies in the east of the excavated area in Zone II. It consists of a southern section and a northern one. The former

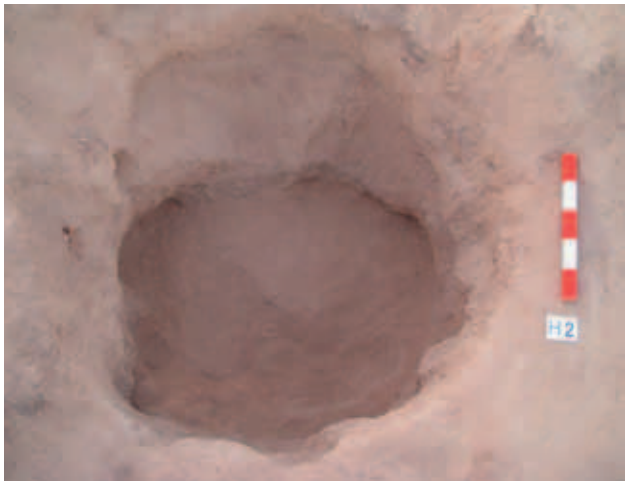

Figure 3 Ash pit IIH2 (E–W).

spans four excavation grids, which are IIT105, IIT106, IIT115 and IIT116; the latter, three, namely IIT116, IIT126 and IIT127. Both ditches are opened beneath the second layer and intruded into primary soil. They stretch in the same direction from the northeast to the southwest, and both are in an inverted trapezoidal cross-section, so they must have been one ditch as the planning. They are separated by a flat primary soil balk, which seems to have been a passage for the zones on the two sides of the ditch. Both sections contain accumulations of spongy yellowish-brown sandy soil. They yielded quantities of animal and fish bones and shells, along with some potsherds. Within the excavated areas, the northern section measures 6.4m in length, 2.4–3m in width at the mouth and 1.6–2.2m at the bottom, and 1.3–1.6m in depth; and the southern section measures 6.4m in width, 2.9–3.1m in width at the mouth and 2.1–2.8m at the bottom, and 1.2–1.4m in depth. The balk–shaped passage is about 3.2m in width (Figure 4). The postholes discovered beneath the second or third layers of Zone II are largely brought to light to the east of this ditch. It indicates that the then buildings must have been constructed mainly in this area, which should also be taken as the main distribution zone of the cultural remains in Phase I. Thus this ditch may have been the defensive moat of the settlement belonging to Phase I.

14 postholes were discovered. They appeared in groups or singly. Judged by their stratigraphical relationships and intervals and the presence or absence of trodden floor, there are four identifiable sets of postholes, which are IID1 and IID14, IID2 and IID3, IID5–IID7 and IID11 and IID12. The interrelationships among the other postholes cannot be clearly determined. All postholes and their central sockets are cylindrical and with round bottoms; between the socket and the hole wall are one or two circles of hard-rammed earth. Group IID1–IID14 is located in the northeast of IIT127; both holes are opened beneath the second layer and intruded the primary soil; and the distance between their edges is 0.07m. IID1 measures 0.32m in diameter and 0.2m in depth. Its central

Figure 4 Ash ditch IIG3 (SW–NE).

Figure 5 Postholes ID1 and ID14 (top is northeast).

post socket has a diameter of 0.06m and a depth of 0.09m and contains accumulated sponge grey sandy soil. Between the socket and the hole wall are two circles of hard-rammed earth. The inner circle is grayish-white and 0.03–0.04m thick; the outer one, dark gray and 0.04–0.1m thick. IID14 measures 0.15m in diameter and 0.16m in depth; its central socket is 0.09m in diameter and 0.08m in depth. The accumulations in the socket are sponge gray sandy soil. Between the post socket and the posthole wall is hard-rammed grayish-white earth, which measures 0.03–0.08m in thickness. Both the accumulations in the

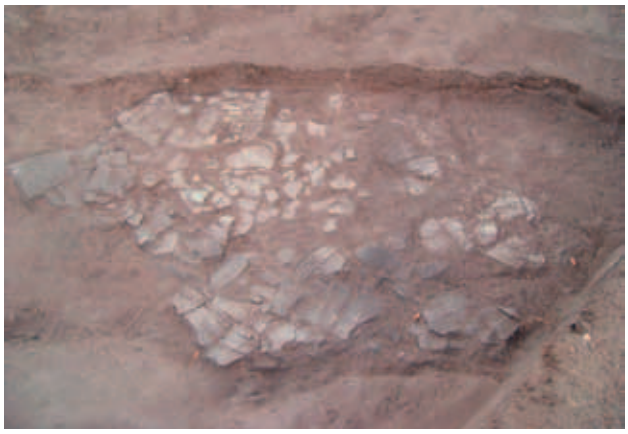

Figure 6 Pottery accumulation IIC1 (NW-SE).

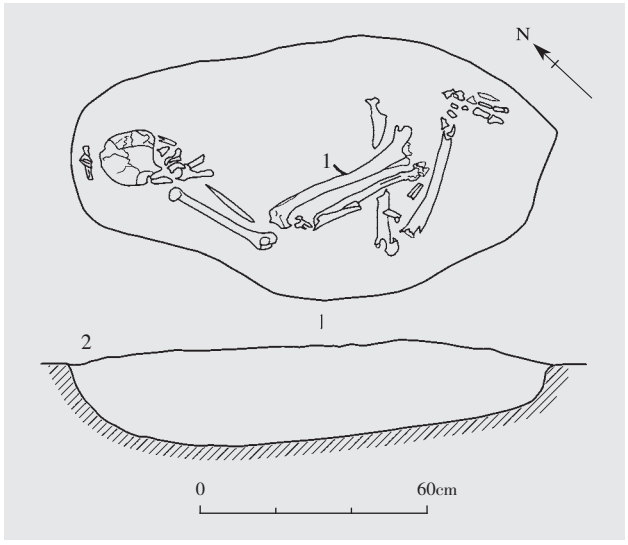

Figure 7 The plan and section of burial IIM10.
1. Bone awl; 2. Broken shells.

Figure 8 Cylindrical pottery jar (IIT406 ② :4).

socket and the rammed earth along the hole-wall contain smashed fish-bones and shells (Figure 5).

Potsherd accumulations were revealed in two spots, both in black sandy soil of the second layer in Zone II. IIC1 lies in the second layer within the western part of excavation grid IIT104, and has a depth of about 0.4m beneath the layer surface. This is a small heap of potsherds mixed with dark gray burnt clay. It measures 2.1m in length, 1.3m in width and 0.02–0.1m in thickness. In type they belong to the urn, cylindrical jar, etc. and represent at least three individual vessels (Figure 6). Most of them bear soot traces. Judged by the structure and color of the soil in the second layer and the erosion degree of the contents, the potsherd heap must have been gradually formed under the weather action. Its existence indicates that traces of human activities came into being at the latest in the course of the formation of the second layer, but the second layer itself is difficult to again divide into more layers, thus we see the particular phenomenon that the potsherd accumulations have been "wrapped" inside the second layer.

Only one burial was encountered (IIM10). It is located in the east of excavation grid IIT111 with an orientation of 318° . It is opened beneath the second layer and intruded into the primary soil. The mouth is roughly oval and measures about 1.25m in length, 0.7m in maximum width and 0.08–0.2m in depth. The bottom is uneven and slightly lower nearby the head of the occupant. The earth fill is yellow sandy soil with gray spots. This is a flexed prone single burial with the face downward. The upper limbs, spine, ribs and pelvic are all incomplete. The burial occupant is a male of more than 50 years old. Beneath his left thighbone is a bone awl; above the skull are a few broken shells (Figure 7).

2. The unearthed artifacts. Including pottery wares, stone, bone and horn and shell implements.

The pottery wares are totally sherds, from which two vessels can be restored. All sherds belong to sandy ware. The fine sand was not intentionally added tamper but an original component of the local soil. Generally the pottery pastes contain shell dust with very few exceptions. In color the yellowish-brown ware comes first, grayish-brown next, and gray sherds occurred rarely. The duration and degree of firing are commonly low and the structure is spongy. The identifiable types include the cylindrical, bulging-bellied and contract-mouthed jars, urn, basin, *yu*-broad-mouthed container, *dou*-stemmed bowl, bowl and cup (Figures 8–11). The cylindrical jar is the most popular type. The large-sized vessels usually bear clear traces showing that they have been constructed by clay coiling method, though some small objects are hand made. The thicknesses of the vessels are uneven: generally the middle and upper bellies are made thinner, measuring 0.5–1cm in thickness, while the lower part close to the bottom has a thickness of 1.5–2cm. The surfaces are usually uneven, and the forms are sometimes irregular. In decoration, the surfaces are mostly plain; part of jars and urns bear one to five rings of clay strips nearby the rim; a

Figure 9 Pottery urn (IIC1:2).

Figure 10 Pottery basin (IIT118 ② :3).

Figure 11 Large-mouthed pottery *yu*-container (IT5 ② :1).

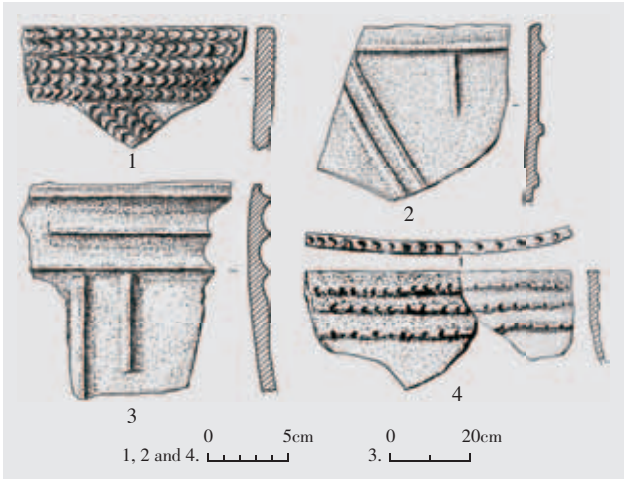

Figure 12 The rim sherds of pottery vessels of Phase I.
1. IIT415 ② :4; 2. IIT129 ② :7; 3. IIT405 ② :13; 4. IIT402 ② :5.

Figure 13 Potsherd with human face design (IIT416 ② :3).

Figure 14 Potsherd with human face design (IIT127 ② :6).

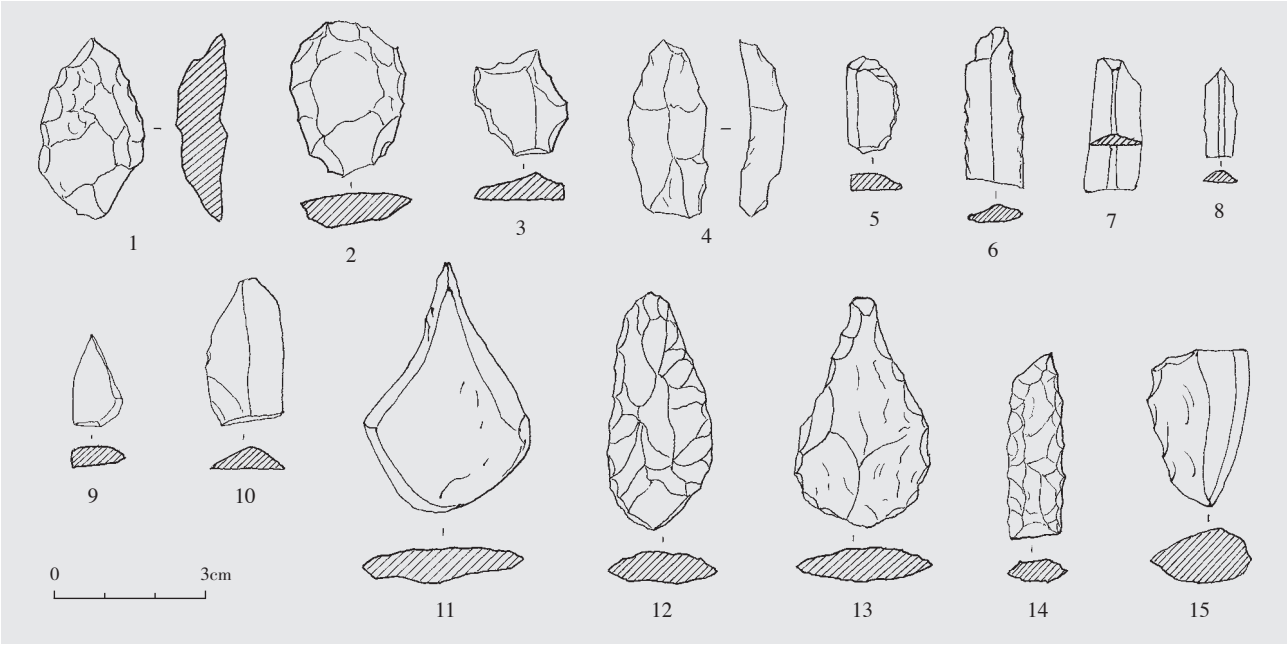

Figure 15 Microliths from the vestiges of Phase I.
1–5. Scrapers (IIT106 ② :1, IIT119 ② :2, IIT403 ② :2, IIT111 ② :1 and IIT116 ② :4); 6. Blade (IIT211 ② :2); 7. Microblade (IIT126 ② :1); 8. Burin (IIT106 ② :4); 9. Drill (ITG9 ③ :2); 10. Flake (IIT106 ② :6); 11. Awl (IIT412 ② :1); 12. Arrowhead (IT1 ② :2); 13. Point (IIT119 ② :13); 14. Compound tool (ITG9 ③ :3); 15. Core (IIT116 ② :1).

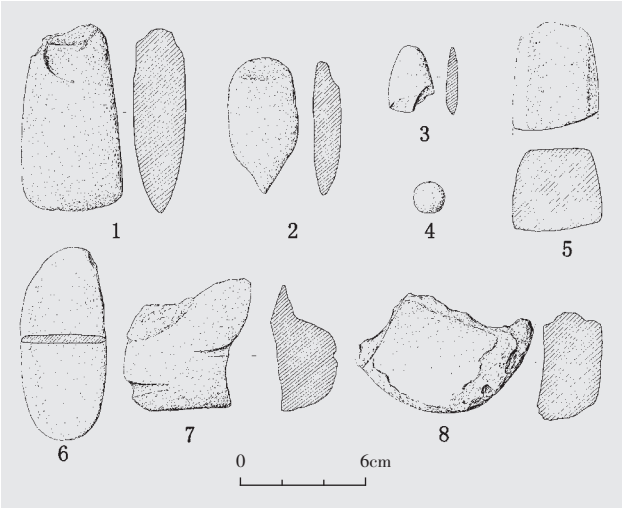

Figure 16 Polished stone implements from the vestiges of Phase I.
1. Ax (IIT119 ② :11); 2. Drill (IIT416 ① :2); 3. Adze (IIT401 ② :3); 4. Bola (IIT103 ② :4); 5. Roller (IIT413 ② :4); 6. Whetstone (IIT108 ② :2); 7. Net weight (IIT405:1); 8. Quern (IIT303 ② :9).

few vessels are adorned with geometrical patterns formed of horizontal, vertical or diagonal clay bands. On some samples, stamped or finger pressed patterns are found on the bands and rim surface (Figure 12). For a small number of vessels, mat traces exist on the vessel bottom as remains of the making process. Beside, there are three sherds with human face design, which is added by incising with pointed tools (Figure 13) or adhering narrow clay strips (Figure 14).

In total 102 pieces of stone artifacts are unearthed. They are microlithic or polished samples. The former number 66 and belong to the scraper, point, blade, arrowhead, burin, awl, drill and other types along with stone cores, flakes and microblades (Figure 15). The latter are 36 pieces that belong to the types of axe, adze, quern, roller, whetstone, net weight, bola, jade ring, etc., among which the whetstones are most frequent finds (Figure 16).

80 bone and horn (antler) implements were unearthed. They belong to the awl, spoon, fish spear, shuttle-shaped object, arrowhead, etc (Figure 17). In number the awl comes first. In addition, there are 17 pieces of bone blanks unearthed.

13 shell artifacts were unearthed. They belong to the types of knife, spoon, ring, perforated shell ornament and spiral shell ornament.

Cultural Remains of Phase II

1. The vestiges include four burials (IIM7–9 and 25). All of them are opened beneath a thin surface soil, intruded into the second layer, and are filled with black sandy soil with gray spots. These are all small-sized sub-rectangular earthen pit burials. The burial occupants are buried in a flexed supine position heading northwest. Their upper

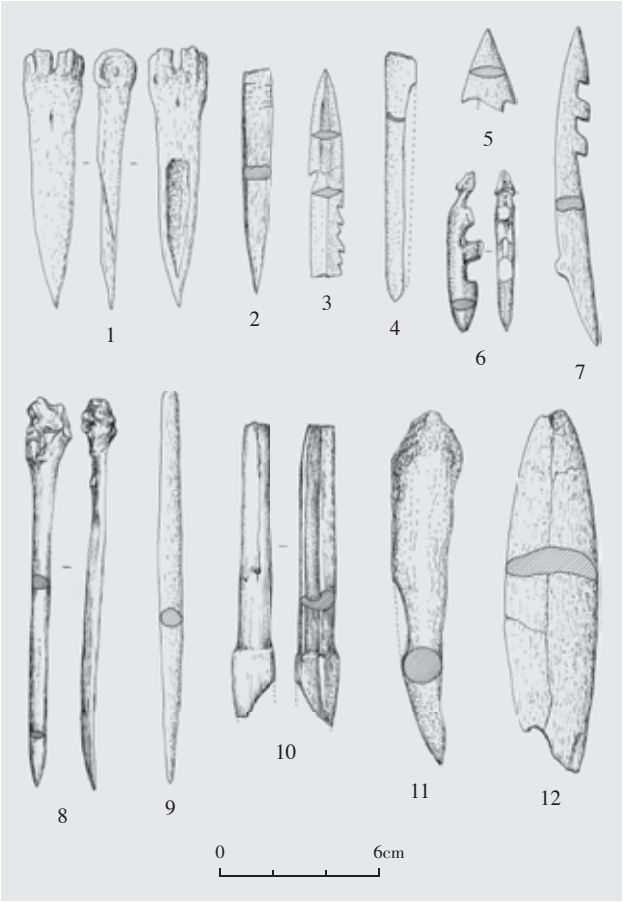

Figure 17 Bone and horn (antler) implements from the vestiges of Phase I.
1, 2, 8 and 9. Bone awls (IIT117 ② :2, IIT107 ② :3, IIT130 ② :4 and IIT117 ② :10); 3, 6 and 7. Harpoons (IIT109 ② :9, IIT105 ② :6 and IIT107 ② :1); 4. Bone spoon (IIT404 ② :1); 5. Arrowhead (IIT111 ② :6); 10. Broken bone implement (IIT105 ② :4); 11. Antler awl (IIG ③ :7); 12. Shuttle-shaped bone object (IIT128 ② :1).

Figure 18 Burial IIM9 (NE–SW).

Figure 19 Burial IIM25 (SW–NE).

Figure 20 Pottery cup (IIM8:1).

limbs are varied in position, while the lower limbs are commonly flexed, laid one upon the other and put on the belly. No burials yielded receptacle traces. IIM7, IIM8 and IIM9 seem to have been gathered in a group, forming a "品" shape at distances of less than 1m.

IIM9 is 315° in orientation. The burial occupant is facing upward. The spine and ribs are incomplete; the other bones remain in a good condition. The upper limbs are flexed upward and reach the shoulders; the leg bones are flexed and crossing on the belly. It is a male's remains of about 25 years old. The grave goods consist of a jade ring, a stone ax, a roller, a piece of oolitic hematite and a shell ornament. The jade ring is on the neck, the stone ax near the left shoulder, the roller on the belly, the piece of oolitic hematite outside the left thighbone, and the shell ornament at the pelvis. In addition, there are two stones, an ox-tooth and a few fish and bird bones. The grave measures 1.24m in length, 0.56–0.58m in width and 0.06-0.14m in depth (Figure 18).

IIM25 lies at an orientation of 312°. The burial occupant is facing upward. The spine and ribs are partly missing; the other bones remain in a good condition. The hands are closed to the hip, and the leg bones are flexed and piled

Figure 21 Jade ring (IIM9:5).

Figure 22 Jade pendant with animal mask design (IIM7:1).

up on the belly. This is the remains of a male of 25–36 years old. The grave goods comprise a tooth awl, a broken bone implement and a string of shell beads. The tooth awl lies outside the left hip, the broken bone implement on the right side of the skull, and the strung shell beads are spread at the head and neck. In addition, a quartz sandstone pebble is found outside the right hip. The grave measures 1.25m in length, about 0.68m in width and 0.16–0.26m in depth (Figure 19).

2. The artifacts. The grave goods include a pottery cup (IIM8:1, Figure 20), a stone ax, a stone roller, a jade ring (IIM9:5, Figure 21), a jade pendant with animal mask design (IIM7:1, Figure 22), a tooth awl, a broken bone implement, a string of shell beads, a shell ornament and a piece of oolitic hematite.

Preliminary Conclusion

The excavation of the Shuangta Site is a large-scale archaeological fieldwork carried out recently in the western Jilin. It revealed rather rich Neolithic cultural remains, which constitute a batch of important achievements in the Neolithic archaeology of western Jilin and even the whole western part of the Songhua River-Nenjiang River Plain.

The pottery assemblage from the remains of Shuangta Phase I show features different from those characteristic of any Neolithic cultures discovered previously in the middle and lower reaches of the Nenjiang River. These pottery wares present obvious primitive characteristics in both texture and technology, which tells that their making techniques belong to the most primitive pottery industries recorded so far in Northeast China. For example, during the excavation in 1980 and 2010, the Tengjia Gangzi Site in Ang'angxi District of Qiqihar yielded some remains similar to those recovered at Shuangta. The systematic report on the Tengjia Gangzi excavation has not been published yet, but in the published material, a potsherd of a vessel belly with an attached fish hawk figure in relief shows great stylistic similarity with its counterpart in the pottery assemblage of Phase I of Shuangta. In previous surveys, such remains were seldom encountered; only the Jubaoshan Site in Zhenlai, Laofu Datuozi and Aobaoshan Sites in Tongyu, all in Jilin Province yielded similar artifacts. It indicates that the cultural remains represented by Phase I of Shuangta are probably distributed mainly in the middle and lower reaches of the Nenjiang River.

Concerning the chronological issue, a human bone and five potsherds of the Phase I of Shuangta Site have been analyzed by the AMS Laboratory and Thermo-luminescence Laboratory of Peking University. The human bone from the burial IIM10 is ^{14}C-dated as 9550±45 BP or 9150–8760 BCE (2σ, half-life: 5568 years) according to its calibrated datum. The potsherds from the southern and northern sections of IIG3 date back to 10162±630 BP and 9445±710 BP respectively according to their thermo-luminescence determined data. The two potsherd accumulations (designated as IIC1 and IIC2 respectively) are dated as 10400±600 BP and 10202±1000 BP according to thermo-luminescence analysis, and the potsherd from excavation grid IIT107 ② is dated to 9679±750 BP by means of the same analysis. The ^{14}C-dating of the human bone and the thermo-luminescence dating of the potsherds gave quite similar results, both showing a datum of circa 10ka BP. It indicates that this type of remains should be attributed to the earliest Neolithic culture discovered to date in the middle and lower reaches of the Nenjiang River and even in the whole Northeast China.

Among the cultural remains of Phase II of Shuangta we see quantities of wild animal bones, fish bones and shells but no grain crop remains. The stone implements are largely scrapers, points, arrowheads and blades, along with a few querns and rollers for food processing, but those for agricultural production are absent. Among the bone artifacts are numbers of awls, spears, shuttle-shaped objects and other implements for handicraft and fishing-and-hunting, which are made of wild mammal and bird bones. All these indicate that before us is a cultural complex with fishing and hunting as the main subsistence types, while the discovery of ditches, ash pits, postholes

and potsherd accumulations reflect that the settlement site belonged to the sedentary type.

In the Phase II of Shuangta, only four burials were found. Their grave goods include pockmark-decorated pottery cups, jade pendants with animal mask design and jade rings. The jade pendant with animal mask design from the burial IIM7 resembles its counterpart from Niuheliang IIM22:2 in shape. The jade ornaments of the ring, *bi*-disc and pendant types are very similar to those of the Hongshan Culture, and the burials intruded into the accumulations of the Shuangta Phase I, so the Phase II can be dated roughly to the same time as the Hongshan Culture.

Judged by the available information, the cultural complex featuring the pockmark pottery is mainly distributed in the Baicheng region of Jilin Province, the southwest Hinggan League of Inner Mongolia and the greater part of the Tongliao area. Its border with the Hongshan Culture of western Liaoning is roughly the zone from Hure Banner to Tianshan (Ar Horqin Banner). The discovery of the remains of Phases I and II of Shuangta Site and the establishment of the two archaeological cultures laid a firm foundation for clarifying the chronological sequence of the Neolithic archaeological cultures in the western Songhua River-Nenjiang River Plain and for revealing their pedigree relationships with other archaeological cultures.

References

Jilin Provincial Archaeological Team 吉林省文物工作队 . 1983. 吉林洮安县双塔屯原始文化遗址调查 (The investigation of the remains of primitive cultures at Shuangta Village in Tao'an County, Jilin). *Kaogu* 考古 (Archaeology) 12:1092–6 and 1121.

Jilin Provincial Museum 吉林省博物馆 . 1998. 吉林镇赉县聚宝山新石器时代遗址 (The Jubaoshan Neolithic Site in Zhenlai County, Jilin). *Kaogu* 6:39–46.

Zhu, Yonggang 朱永刚 and Junfu Zheng 郑钧夫 . 2008. 通榆县三处史前遗址调查与遗存分类 (The survey of three prehistoric sites in Tongyu County and classifing[sic] remains). *Bianjiang kaogu yanjiu* 边疆考古研究 (Research of China's frontier archaeology) 7:343–5.

Postscript

The original report written by Lixin Wang 王立新 , Xudong Jin 金旭东 , Tianjing Duan 段天璟 and Zhuowei Tang 汤卓玮 was published in *Kaogu xuebao* 考古学报 (*Acta Archaeologica Sinica*) 2013.4:501–38 with 35 illustrations and six plates. The present abridged version is prepared by Lixin Wang and translated into English by Runxian Mo 莫润先 .