On the Cultural Contents and Settlements of Northern Taiwan’s Prehistoric Peoples

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This paper makes use of the most recent archaeological data to examine and present the lifestyles at prehistoric settlements of northern Taiwan, in order to understand the developmental changes in the appearances of cultural contents and settlement patterns of these prehistoric cultures of northern Taiwan over several thousand years. On the basis of current archaeological data, it is clear that Shuntanpu Early Culture, Shuntanpu Late Culture, Yuanshan Culture, Botanical Garden Culture, and Shihsanhang Culture all had stilt-type (raised-platform) housing. Wooden pillars were erected in round holes of approximately 10-20 cm (though some are larger) dug into the earth, gravel layer, or sandstone bedrock, and it is surmised that these were then made more stable by packing small stones or ramming earth into the holes around the pillars. Coming to the long-standing controversy as to the origins of the Shihsanhang Culture, Shihsanhang Culture clearly inherited important content from the prehistoric cultures that inhabited northern Taiwan over the previous several thousand years and represents the developmental evolution of northern Taiwan archaeological cultures. One other aspect: Shihsanhang Culture has a stronger maritime character. Not only did it have frequent contacts with other contemporaneous archaeological cultures in Taiwan, but also conducted trading interactions with people in China and Southeast Asia, shaping Shihsanhang’s complex and unique cultural appearance.

Keywords: Northern Taiwan, Stilt-type housing, Shihsanhang Culture, Bloomery method

Preface

The development of archaeology in Taiwan has been closely connected to the discovery and research of sites in the north of the island. These include discoveries of the Chihshanyen (芝山岩) Site in 1896 and Yuanshan (圓山) Site in 1897, which raised the curtain on archaeological research. Moreover, large-scale excavation of metallurgical workshop and a large quantity of iron piece at the Shihsanhang (十三行) Site show how the technological level of the prehistoric peoples had already progressed from grinding stone tools to entering the Metal Age, and how metallurgy also had considerable impact on the social life and trade networks at that time. More recently, during large-scale excavations at the Botanical Garden (植物園) Site, the author unearthed abundant remains of rice and millet cultivation belonging to Shuntanpu Early Culture (訊塘埔早期文化), which represents local Taiwan continuation of the Nanguanli and Nanguanlidong (南關里, 南關里東) Sites in Tainan, other important sites at which cultivation of crop has been discovered, and which date back to approximately 5,000 to 4,000 years ago.

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This paper makes use of the most recent archaeological data to examine and present the lifestyles at prehistoric settlements of northern Taiwan (including the Taipei Basin and areas along the north coast) through time from Shuntanpu Early Culture (Tapenkeng Period of the Early Neolithic Age), through Shuntanpu Late Culture (Successive Period of TPK of the Middle Neolithic Age), Yuanshan Culture (Late Neolithic), Botanical Garden Culture (Final Neolithic Age), and up to the Shihsanhang Culture (Metal Age), in order to understand the developmental changes in the appearances of cultural contents and settlement patterns of these prehistoric cultures of northern Taiwan over several thousand years.

Table 1
Spatial-Temporal Framework of Prehistoric Cultures in Taiwan (From Kuo, 2019, Table 2.1)
Archaeological research in Taiwan has, for the greater part, tended to focus on a discussion of the forms of material artifacts, such as pottery vessels and stone tools, and rather less on discussing the various types of sites, and the settlement patterns common to these sites. Understanding how the prehistoric peoples of different periods lived on the land has great significance, however, which cannot merely be reduced to a study of their utensils. Furthermore, over recent years there has become available, to a certain extent, data relating to prehistoric settlement patterns in northern Taiwan. From this it is possible to consider, across vertical time zones (that is a temporal framework covering several thousand years), changes that took place in the lives of the peoples of different cultures and at different times in this geographic area of northern Taiwan. This kind of research offers another perspective on how prehistoric peoples lived from cradle to grave on a particular piece of land, and on the relationship between the land and its peoples, which also helps to advance an understanding of cultural affinities between prehistoric cultures.

**Early Neolithic Age (Tapenkeng Period)—Shuntanpu Early Culture (5600-4200 BP)**

Shuntanpu Early Culture was distributed around the Danshui River estuary and in the Taipei Basin. Important sites include Tapenkeng (大坌坑), Talongtong (大龍峒), Yuanshan (圓山), Botanical Garden (植物園), and Chihshanyen (芝山岩). Some of these are located on low hills on plains and some on coastal hills. Large, fixed settlements appeared, as well as systematic planning of their spatial layouts. Taking the Talongtong Site as an example, building forms, as evidenced by pillar-hole clusters, indicate the appearance of multi-roomed rectangular structures. Around these are a number of man-made ditches, which are generally parallel to the building’s perimeters. Most of the ditches are long and straight and, where they turn, this is mostly at right angles. In addition to being used to drain water from the homes and settlements, the ditches might also have functioned to demarcate space within the settlements. Ash pits are mainly distributed around the buildings, and there are examples of dug trenches and wells (Chu, 2012) (Fig. 1).

From the abundant remains of crop cultivation discovered at the Botanical Garden Site, it is clear that people of Shuntanpu Early Culture already knew how to cultivate rice and millet. Since reliance on crop cultivation as a livelihood would have involved complex farming techniques, as well as planned land-use, patterns of settlement, and irrigation, this would have led to the people’s increased dependency on the land, and thus paved the way for long-term habitation, large-scale settlements, and population growth.

Subsistence tools are mainly stone utensils. Most varied in form as well as most numerous are those made by chipping, grinding, hole drilling, slicing, and point drilling. This gave rise to such forms as a great quantity of chipped and ground axes (axe-hoe shape), with lesser numbers of shouldered stone implements, and a large number of nephrite adzes (some with trapezoidal cross-sections), stepped nephrite adzes, arrowheads, stone knives, choppers, scrapers, large pointed tools, grindstones, concave hammer stones, net sinkers, spindle whorls, and tapa beaters both with and without handles. Most numerous among these are stone hoes used for farming. The materials used to make these implements included both stone local to northern Taiwan, as well as nephrite from eastern Taiwan.

Utensils of daily use are mainly pottery vessels. Most are made of sandy paste, though a small number are of clay paste. All are red and fragile. Some are undecorated, but many have cord-marked patterns, especially below the neck, while some also have comb-incised patterns or red-line patterns inside or around the rim. A small number have comb-incised patterns executed on top of erased cord-marked patterns on the shoulder. The outer surfaces of the cord-marked and plain vessels are often coated in red slip, which peels off easily. There
are small quantities of pottery with check-impressed patterns, circle-impressed patterns, and black slip; the last being applied to vessels with cord-marked patterns or plain surfaces.

The overwhelming majority of pottery vessels have round bottoms, about 10 percent also have short ring feet, and a small number are tripods. Most common are variations derived from round-bottom, globular-bellied guan jars (罐), such as those with one or two rings of ridges extending from the rim, those with short ring feet, and those with notch patterns or comb-incised patterns executed around the rim or on the ridges. A small number of check-impressed pattern pottery guan were excavated from the Botanical Garden Site; a few large-mouthed pottery vessels measuring more than 40 cm in diameter were found at the Talongtong and Botanical Garden Sites, which were possibly used for storage purposes. The round-bottomed, globular-bellied guan jars include a large number with wide rims, as well as those with wide rims and folded bellies, some with short ring feet, and some with cord-marked patterns and some undecorated (Chu, 2012, p. 115, Fig. 93). This kind of wide-rimmed vessel with ring feet has also been found at the lower level of the Botanical Garden Site, while long-necked ping bottles (瓶) have been unearthed at both the Talongtong and Botanical Garden Sites. In addition, there have also been discoveries of globular-bellied bo bowls (缽), folded-bellied bo bowls, flat-bottomed bo bowls, two-handled or two-knobbed bo bowls, small bo bowls with straight bodies and flat bottoms, bo bowls with three short feet, tripod vessels, pottery gai lids (蓋) with round knobs, pottery spindle whorls (紡輪) either with undecorated bodies or bearing patterns of impressed dots, and bird-head-shaped pedestals (支腳).

![Figure 1. Layout of the Talongtong Site, Taipei City (from Tree Valley Foundation Report, 2012, p. 24, Fig. 5; redrawn by the author).](image)

**Middle Neolithic Age—Shuntanpu Late Culture (4200-3200 BP)**

Shuntanpu Late Culture was distributed over a wider area than Shuntanpu Early Culture, spreading out from the Danshui River estuary and Taipei Basin to include areas of today’s Yilan in northeastern Taiwan and Taoyuan in the northwest. Important sites include Shuntanpu (訊塘埔), Tachuwei (大竹圍), Chihshanyen, and Tayuanchienshan (大園尖山). These are largely located in coastal plains and foothills.

Large-scale, fixed and planned settlements continued to develop. Pillar-hole clusters are found containing pebbles of varying sizes in the gravel layer at the Shuntanpu Site. These would have been packed tightly around the pillars after erection to stabilize them. The pillar holes generally run along a north-south axis, that is, in line...
with where a nearby embankment falls away (Liu, Chung, & Yen, 2008). From the layout of these pillar holes in the gravel layer, it would seem that firstly there must first have been a conceptual configuration for the spacing of the pillar holes, and the resulting constructions would probably have been stilt houses. Pillar-hole clusters found at the Tachuwei Site (Liu, Chiu, Tai, Wang, & Li, 2001) were possibly also from stilt-house-type structures. One wooden frame was unearthed at the Tachuwei Site measuring 54 cm in height and with a maximum diameter of 98 cm, and frame timber width of 2-10 cm, and there are marks on the surface where it was trimmed flat. It is very similar to a wooden frame for a well found at the Shihsanhang Site, from which the author presumes it may well have also been used as a supporting structure lining the inside of a well. In terms of livelihood, evidence of rice with tassels has been found at the Chihshanyen Site (Fig. 2).

Subsistence tools are mainly stone implements, though there are also a small number of pointed wooden implements and wooden chisels, as well as bone and horn tools. Among the stone tools, in addition to continuation of Shuntanpu Early Culture’s chipped stone axes and hoes, ground axes, hoes, adzes, chisels, and arrowheads, there have also been found new items such as fluted stone arrowheads (with a groove to allow the flow of blood), large arrowheads with holes, knives with curved blades, double-grooved net sinkers, round discs with holes, and concave stone hammers. Of these, the knives with curved blades are exclusive to northern Taiwan, where they continued to be used by Late Neolithic Age cultures at Wanshan (丸山), and Huakangshan (花岡山), and at Chilin (麒麟) in the east Taiwan.

Implements of daily use include woven items and pottery. Both bamboo and grass weavings have been unearthed at the Chihshanyen Site.

Most pottery vessels are made from sandy paste, though a few are of clay paste; all are soft pottery. Cord marks are the most common patterns, predominantly executed on the external sides of the vessel bodies, though there are also a lesser number on the rims and ring feet; most are made using relatively thick cord. Other decorative patterns found include impressed checks, lines, nets, and circles, as well as incised check patterns, vessels with black slip, and a small number with painted geometric patterns, such as of parallel lines, V shapes, waves, and checks.

Round-bottomed and ring-footed vessels are most typical, with tripods very rarely or never found. Most numerous and most varied are vessels with ring feet, the majority of which are undecorated, though a few have cord-mark patterns. Globular-bellied, round-bottom guan jars continue to be most numerous, though also found are various kinds of bo bowls, dou plates (豆), long-necked ping bottles, flat-bottomed vessels, various pottery handles, and pottery spindle whorls. The ridged rims and thick corded patterns of Shuntanpu Early Culture were also continued. Taking the Tachuwei Site as an example, undecorated pottery represents the majority, indicating a trend towards plain surfaces across the entire vessel body. In addition to continued use of the main vessel forms of Shuntanpu Early Culture, there also appeared new forms such as pottery containers with a raised ridge around the neck or belly, as well as not insignificant numbers of vessels with concentric circular string patterns around the rim, or even on both the interior and exterior of the rim. Also newly appearing is an increased diversification in styles of vessel handles and knobs. All these new vessel forms have undecorated surfaces or, at least, do not have the cord-marked patterns, and this thus represents one of the defining characteristics of this period, one which would be continued during the successions to and developments of Yuanshan Culture in the north, Wuanshan Culture in Yilan in the northeast, and Huakangshan Culture in Hualien in the east.
Of ornamental pieces, there are pottery huang semicircular pendants (璜), pottery huan rings and bracelets (環), as well as bracelets, L-shaped bracelets, grooved bracelets, round plates with holes, bell-shaped beads, and pendants, all made of nephrite from eastern Taiwan. In addition, a long tubular stone core (of which the surviving fragment measures 8 cm in length) was unearthed at the Shuntanpu Site, which shows developments in the rotary-cut techniques of stone craft, and was perhaps related to the manufacture of stone bracelets.

Figure 2. Layout of pillar holes of Shuntanpu Culture at the northern section of the Shuntanpu Site (from Liu et al., 2008, p. 51, Fig. 3-11; redrawn by the author).

Late and Final Neolithic Age—Yuanshan Culture to Botanical Garden Culture

**Yuanshan Culture (3200-2300 BP)**

Yuanshan Culture of the Late Neolithic Age was distributed in the Taipei Basin, along the north coast, and into interior regions of northwestern Taiwan. Important sites include Yuanshan, Chihshanyen, Tudigongshan (土地公山), Zhanlongshan (斬龍山), Tapenkeng, and Tayuanchienshan. Most are located on riverbanks or hillsides.

In terms of settlement patterns, stilt structures were the main type used for Yuanshan Culture homes. Two types are found: One, such as in remains of pillar holes found in the Yuanshan Culture stratum at the Tapenkeng Site, had timber pillars inserted directly into the earth layer; the other, such as the pillar-hole clusters found in the sandstone bedrock at the Yuanshan Site and Chihshanyen Site, had pillar holes firstly chiseled into the sandstone bedrock using a tool made of antler or similar material, into which the pillars were then inserted and the structure erected. Taking the pillar-hole clusters at the Yuanshan Site as an example, these are mainly distributed over a large rock on a small isolated hill located on the plain of the Keelung River Basin.
Clam shells and animal bones from the diet of prehistoric peoples, as well as broken pottery, stone tools, and so forth, were discarded in a low ravine and on sloping ground to the west, forming shell middens. The distribution and arrangement of pillar-hole clusters at the Yuanshan Site are in accordance with subtle topographic variations in the bedrock, and are generally distributed into two separate upper and lower elevations, one being roughly 1-1.5 m higher than the other; thus unevenness in the bedrock terrain is overcome by using timber pillars to construct stilt-style buildings. Among the pillar-hole clusters at the higher elevation there are five parallel, narrow, man-made ditches, which run perpendicular to the slope of this upper elevation, and have the function of draining water away. Drainage grooves are also widely seen between the upper and lower pillar holes and between the pillar holes and the ditches, which could have been to draw water from the upper pillar holes to the lower ones or into the drainage ditches.

In terms of graves, five human skeletons have been unearthed from shell mounds at the Yuanshan Site. All were supine (face-up) burials with limbs extended, their heads pointing in the same direction, and without accompanying funerary goods. Three of the skeletons each had four teeth extracted: the lateral incisors and canines on both the left and right sides of the upper jaw. At the Chihshanyen Site, bodies were also buried together, in supine position, with limbs extended, and without funerary goods. A human-and-animal motif nephrite jue earring (玦) was unearthed from beside the skull of one of these supine, limb-extended burials, which was facing east and also had the lateral incisor and canine teeth removed from both sides of the upper jaw. Furthermore, one special weng urn (甕) coffin grave was also found in this burial area.

Subsistence implements are mainly stone tools, though there are also a small number of bone adzes, bone arrowheads, deer antler harpoons, and bone double-grooved net sinkers, as well as occasional bronze arrowheads and axes. Stone tools include axe-hoes (both shouldered and not), polished batu-style axe-hoes, adze-chisels (both shouldered and not), arrowheads, knives, knives with curved blades, net sinkers, tapa beaters, hammers, and grindstones.

Items of daily use are mostly pottery, though there are a few stone lids and pedestals. The pottery ware is mainly of sandy paste, with a lesser number of items of fine clay. Most are soft red pottery, of which the majority are undecorated, but coated on the surface with one layer of red slip. The insides and outsides of the lids, and the handles, ring feet, and spindle whorls, are often seen stamped with stabbed dot patterns. There are also a smaller number of line, impressed-circle, impressed-net, and geometric designs, or red paint on the vessels’ bellies. Of these, the impressed-net patterns were created using soft netting.

Round-bottomed vessels are most numerous, some of which have ring feet, though a small number are flat-bottomed. No tripods have been found here. Vessel forms include globular-bellied guan jars with round bottoms, pinch-mouthed guan with spouts, double- and triple-spouted guan with ring feet, double-handled guan, guan with four loop handles, bo bowls, zeng cauldrons (甑), lids with knobs, pedestals, and spindle whorls. Most are variations derived from the basic globular-bellied guan with round bottoms through changes in aperture, spout, handle, ring-foot and so forth.

A wide variety of ornament types have been found. These include nephrite huan rings/bracelets, C-shaped jue earrings, jue with four protuberances, rectangular jue, human-and-animal motif ornaments, tubular beads, boat-shaped ornaments, pendants, semi-circular huang pendants, small round discs, and bifurcated ornaments. In addition, there are a handle with dog-head motif, and a few bone beads and bronze huan. The boat-shaped nephrite ornament is unique to Yuanshan Culture; it is carved with the image of a human and a dog riding in a
wooden canoe, and is similar to images of human-and-animal nephrite jue earrings. The part in which the dog is standing should be the stern.

**Botanical Garden Culture (2300-1800 BP)**

The Botanical Garden Culture of the Final Neolithic Age was distributed in the Taipei Basin, along the north coast and into Taoyuan. Main sites include Taipei City’s Botanical Garden, Yuanshan, Chihshanyen, Guandu (關渡), Tsifakung (慈法宮), Goutishan (狗蹄山), and Hutoushan (虎頭山). Most are located on low hills or gentle slopes.

In terms of settlements, remains of pillar-hole clusters possibly for construction of level stilt-style structures have been found at the Botanical Garden Site. Measuring approximately 8 m by 3 m for each structural unit, their long axis was aligned either north-south or east-west; pebbles were placed into the base of the pillar holes (Liu, 2011). Numerous pits with discarded utensils were unearthed near the houses.

Subsistence implements include roughly ground axe-hoes and ground batu-style axe-hoes, stone and nephrite adzes, stepped stone adzes, stone arrowheads, double-grooved net sinkers, and tapa beaters with handles.

Utensils of daily use are primarily pottery ware, the majority being made of sandy paste and a smaller number of fine clay. They are mostly red, soft in texture and, in addition to those that are undecorated, they mainly have struck-impressed geometric patterns, such as checks, ladders, zigzag lines, leaf-veins, and lines on their bodies. A small number of guan jars have rims decorated with impressed check patterns. In terms of forms, most are round-bottomed vessels; some are ring-footed, though a small number of flat-bottomed and concave-bottomed vessels are found, though no tripods. Most common are globular-bellied guan with round bottoms, and ring-footed guan, though a small number of large globular-bellied guan measuring over 40 cm in height are found, as well as a small number of guan with folded shoulders or folded bellies, bo bowls, long-necked ping bottles, and a few pottery handles, knobs, lids, pedestals, and spindle whorls.

Ornaments include nephrite huan rings/bracelets, many of which are broad and flat, as well as a small number of nephrite jue earrings, nephrite items with holes, and, occasionally, glass beads. One brass huan ring was unearthed at the Botanical Garden Site. It measures 1.4 cm long, 1 cm wide, by 1 cm tall, on the lower spherical part is not seen a hole, on the lower surface is some decoration; the inside is hollow. As it is made of composite copper and zinc, that is, brass.

**Metal Age—Shihsanhang Culture (1800-500 BP)**

**Cultural Content**

Around 1800 years ago or slightly later, the whole island of Taiwan sequentially entered the Metal Age. The most evident characteristics of this are the emergence of small iron and bronze implements, glass huan rings and bracelets, and jue (rings or earrings with segments missing) and glass beads, as well as the technology for iron and bronze metallurgy. Nevertheless, use of stone tools continued to differing degrees in different prehistoric cultural zones, in particular in Taiwan’s interior mountainous areas.

Archaeological cultures of this period primarily include Shihsanhang Culture in the north, which as well as being distributed throughout the areas of the earlier Yuanshan/Botanical Garden Cultures and Wuanshan Culture, also extended eastwards to the Liwu River (立霧溪) watershed in Hualien County, and northwestwards to a section of the Holong River (後龍溪) watershed in Miaoli County. Important sites include
Shihsanhang, Chihshanyen, Yuanshan, and Botanical Garden. Most are located along the coast, or on the plains or low hills of the Taipei Basin.

In Liu Yi-chang’s opinion, different subtypes of the Shihsanhang later period could have developed as ancestors of indigenous peoples recorded in historical documents of the 17th century. These include the Pidaqiao (埤島橋) type of the Danshui River estuary and western section of the northern coast, who can be regarded as ancestors of the Danshui People (淡水人), Lin-a People (林仔人; Sinack) or Beitou Community People (北投社人; Ki-pataw) as recorded in Dutch colony period records. The Jiushe type (舊社類型) on a part of the Lanyang Plain in today’s Yilan County represents remains of the ancestors of the Kavalan ethnic group, and parts of the Qauqaut group (猴猴族) and Torobiawan (哆囉美遠人) people; as regards the Jiushe type of the north coast, this has a very close relationship to peoples of the Basayaboriginal Group (巴賽族) (Liu & Lin, 2019, p. 66).

In terms of settlement at the Shihsanhang Site, pillar holes, ash pits, and grave burials have been found, details of which are described below. In terms of graves, of which there are around 300, a significant number are preserved in good condition. In the vast majority, the corpse is buried on its side with limbs bent (fetal position). In addition to single-person burials, there are various kinds of two-person or group interments. A majority of the graves contain funerary goods, and more than half of burials were in areas outside of the house structures (as indicated by the pillar holes), so were perhaps conducted as burials outside the house but still within the activity area of the settlement. A minority of burials overlap each other (Tsang, Liu, Thu, & Chen, 2001, p. 39). There is also one example of prone (face and body down) burial (Fig. 3). The author surmises that the dead person may have come from central Taiwan and died at the Shihsanhang settlement while getting married or on some other occasion, but was then interred in accordance with their home-community burial customs.

Tools of subsistence are mainly concave stones and stone hammers, as well as stone-made pedestals and grindstones (including portable grindstones), stone anvils, and stone-made spindles, stone-made net sinkers (stone weights), as well as a small number of chipped axe-hoe shaped implements, ground stone adzes, and
ground discs. A total of 344 iron items were unearthed at the Shihsanhang Site, most were badly corroded. These included knives, nail-drilled tools, axe-hoes, and arrowheads. There were also two bronze arrowheads and 11 bronze knife handles (Tsang et al., 2001, pp. 76, 80, 83). Most of these arrowheads and handles were fixed to iron shafts or iron blades to make composite metal tools, that is, iron arrows with bronze arrowheads and bronze-handled iron-bladed knives.

Tools of daily use are mainly pottery and bronze items. Pottery was made by the slab-built technique. Vessels are mainly orange-red with impressed geometric patterns, though some are undecorated. The quality is somewhat hard in texture, and most forms belong to the guan jar-type, though there are also some guan with single handles, folded shoulders, human-face motifs, ring feet, and so forth. Decorative patterns are mostly executed on or below the neck, impressed geometric-shaped pottery is made by pressing paddles or firm netting into soft clay vessels. Others have impressed circular patterns, stabbed patterns, and incised patterns.

There are 11 bronze/brass vessels; most are fragments of wan (碗) bowl-shaped vessels, of which one is a gilt-copper wan bowl, unearthed at CM48. In the bowl’s central carving there is a stabbed dot flower-and-grass pattern, which is similar to the decorative style of Tang dynasty items. Other bronze items include a plaque, two bronze pincers, two round discs, one clip, one hook, one pointed item, and one rivet (Tsang et al., 2001, pp. 80, 82-83).

Ornaments include pottery, nephrite, agate, glass, and metal items, such as glass huan bracelets, glass jue earrings, glass beads, and agate bead ornaments, various kinds of human-shaped or animal-shaped pottery figures, gold foil round ornaments, silver huan rings/bracelets, shell ornaments, and shell beads. There are also many bronze ornaments, which may be divided as follows:

(i) 50 bronze bells, of which only a small proportion were found in graves and, since most were ornaments with accompanying beads, it is surmised that the bronze bells were mainly decorative items of daily use rather than being especially made for funerary use (Tsang et al., 2001, pp. 76-77).

(ii) A total of 99 bronze coins were unearthed, including 1 wuzhu (五銖) coin, 45 kaiyuantongbao (開元通寶) coins, 3 qianyuanzhongbao (乾元重寶) coins, 5 taipingtongbao (太平通寶) coins, 1 chunhuayuanbao (淳化元寶) coin, 4 zhidaoypuanbao (至道元寶) coins, 8 xianpingyuanbao (咸平重寶) coins, 5 kangxitongbao (康熙通寶) coins, 1 yongzhengtongbao (雍正通寶) coin, 9 qianlongtongbao (乾隆通寶) coins, 9 jiaqingtongbao (嘉慶通寶) coins, 1 daoguangtongbao (道光通寶) coin, 1 Japanese ryoheieiho (隆平永寶) coin, 1 kuanyongtongbao (寛永通寶) coin, and 13 other tongbao (通寶) coins on which the inscription cannot be identified due to corrosion.

These can be divided into coins of early and later periods: The wuzhu, kaiyuantongbao, qianyuanzhongbao, taipingtongba, chunhuayuanbao, zhidaoyuanbao, and yuanbao are all bronze coins of Chinese dynasties preceding the Southern Song (1127 CE). The wuzhu coin, based on its size and inscription, is known to be as early as from the Epoch of Division between North and South (420-589 CE). Japanese ryoheieiho coins were first minted in the 15th year of Emperor Kammu (桓武天皇) (the 12th year of the Zhenyuan reign period of the Tang-Dynasty Emperor Dezong, i.e., 796 CE). These coins were mainly unearthed from graves in the Shihsanhang Culture stratum, where they had been used as funerary items. Moreover, since all the coins have a circular hole of approximately 2 mm diameter, it can be surmised that they were strung together for use as a hanging ornament. They were possibly obtained by the people of the Shihsanhang Culture through trade with Chinese or Japanese, and were then used as ornaments or funerary goods, but not as currency (Tsang et al., 2001, pp. 79-80).
There are eight bronze huan of two sizes. The larger ones are perhaps bracelets, the smaller ones rings for decoration of fingers or ears (Tsang et al., 2001, p. 82). The other ornament is a bronze plaque with the image of a camel, which perhaps was connected with the Middle East or similar location.

Settlement Patterns

With regard to the patterns of settlement of Shihsanhang Culture, that of the Shihsanhang Site can be taken as an example. This site is located on the southern side of today’s Danshui River estuary, and is a large-scale coastal settlement, of which a total 7246.8 m² have been excavated. These excavations unearthed an extremely large quantity of materials, of which important structural features include ash pits, wells, hearths, graves, an iron-smelting workshop, shell middens, and pillar-hole clusters. The Shihsanhang Site dates from 1,800 to 500 years ago, with its peak activity around 1,500 to 1,000 years ago. Its main characteristics are as follows:

Furnace site: Pieces of iron (鐵塊) are distributed throughout almost the entire Shihsanhang Site. The important iron smelting locations were all discovered in Area D on the western side of the site bordering Pitang (埤塘), however. One relatively intact iron-smelting site was excavated at the T2P13 pit in Area D at the southwest part of the site. A large number of iron pieces were unearthed from the upper stratum of the furnace. In particular this pit’s southern half has reddened earth where the ground shows clear evidence of having been scorched, while below was a structure of piled stones. The stones in these piled structures of the smelting furnace are varied, but include andesite, sandstone, and slate. The different stone materials have particular characteristics; the pieces of slate and andesite, for example, have iron slag adhering to one end, which, on some of the slate, shows a clear red color of scorching. A number of pieces of andesite and sandstone are found that were intentionally used as, or modified for use as, a small platform, which perhaps had a specific function.

Many grindstones were unearthed from around the furnace site, mainly of sandstone and andesite, and generally scorched red. It is therefore surmised that grinding of the iron tools was carried out on the grindstones directly after their manufacture (Tsang et al., 2001, pp. 40-41).

The iron-smelting furnace excavated at Pit T2P13 in Area D is the most complete example at the Shihsanhang Site. Associated objects unearthed and phenomena include stone masonry structure composed of slate, andesite, and sandstone; a small number of concave stones; heaps of pottery pieces; and an almost complete pen (盆) basin-shaped implement (pottery index number PT099). This pen-shaped vessel was collected from near the iron-smelting pit. Since Pit T2P13 Eex at Area D has a large expanse of fire-scorched earth, there were evidently dense concentrations of pottery shards unearthed, and to judge from the fact that their rims and decorations are not from the same items, but on the whole are first type pottery, it is surmised that these piles of pottery pieces had some intimate connection with the iron smelting workshop (Tsang et al., 2001, pp. 40-41).

Fired pottery remains are mainly found in Area H. A total of three concentrations of pottery remains were discovered in the shapes of shallow circular plates with diameters around 1.5-2 m and depths of around 10-20 cm. The surface of the bottoms are all burned to a hard, dark brown color, their shapes are regular, and charcoal ashes and pottery pieces were frequently found within. It is thus surmised that these were open-air spaces for

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1 In the original excavation report, these were referred to as “iron slag” (鐵渣). Considering that these would have been pieces of iron that had been initially smelted from iron ore, which would then be material with economic potential to be traded with other places throughout Taiwan for further manufacture into iron implements, and so to avoid the misunderstanding that the term “slag” might imply “discards” or “residue”, the author has therefore changed it to “pieces of iron” (鐵塊).
firing piles of pottery vessels. A long ditch was discovered nearby, inside which were a large number of imperfectly fired pottery shards (Tsang et al., 2001, pp. 39-40).

Two well sites have also been excavated. One is located at Pit T1P3D in Area E on the east side of the center of the site. There are remains of pillar holes on both the north and south sides of this well, which would have been used for erection of a simple shed frame to provide shade or prevent leaves falling into the water. Carbon dating of charcoal from the upper part of the well dates it to 1,140+70 BP (corrected to 1,025 BP). Remains of the other well were excavated at T15P2 Eex of Area H. A wooden hoop excavated from the bottom of the well has a corrected date of 916 BP (Tsang et al., 2001, pp. 41, 43-44).

In addition, a large, deep trench was found on the northern side of the Shihsanhang Site, which is surmised to be a drainage system. After long-term abandonment, however, it had accumulated a large quantity of trash, including pottery shards and other remains (Tsang et al., 2001, p. 44).

In terms of spatial distribution, reference to Fig. 4 shows burials were on a northeast-southwest axis, and were distributed in spaces outside or between houses. Thus, although burials were carried out externally, these were nevertheless near to the houses, indicating a continued intimacy between the living and deceased. Moreover, that the areas in which concentrations with large quantities of iron pieces have been excavated had pillar-hole clusters suggests they perhaps represented the sites of workshops or similar structures. Surrounding these areas with concentrations of iron pieces are homes, shell midden rubbish pits, hearths, fire pits, water channels, and graves, which indicates that iron smelting was carried out within the settlement and not independent of it. From the above it is clear that all aspects of people’s lives, from the cradle to the grave, as well as the process of iron smelting and production, all co-existed within the settlement of the Shihsanhang Site.

Figure 4. Spatial distribution at Area H of the Shihsanhang Site (ref. Liu & Lin, 2019, Figs. 5-10; redrawn by the author).
Conclusions

In summary, on the basis of current archaeological data, it is clear that Shuntanpu Early Culture, Shuntanpu Late Culture, Yuanshan Culture, Botanical Garden Culture, and Shihsanhang Culture all had stilt-type (raised-platform) housing. Wooden pillars were erected in round holes of approximately 10-20 cm (though some are larger) dug into the earth, gravel layer, or sandstone bedrock, and it is surmised that these were then made more stable by packing small stones or ramming earth into the holes around the pillars.

The Shihsanhang Site, where the author has participated in large-scale excavations over many years, is taken as an example. The bottoms of the pillar holes were approximately 50 cm below the ground level of that time (the cultural stratum), and the stratum measured another 30-40 cm in depth. These cultural strata were created mainly by residents of stilt houses discarding rubbish directly beneath or around them. From a consideration of the depth of the discarded rubbish aggregation, and that the residents would perhaps raise chickens or use the underneath of their homes for other purposes, it is surmised that the minimum height would have been around one meter. This height would have been suitable for people entering the space beneath the house for cleaning, feeding animals, and repairing the wooden pillars. In particular, since the Shihsanhang Site is built on ancient sand dunes, sea wind and rain would very likely have caused significant erosion of the earth substrate, resulting in exposure of the pillar bases and endangering the safety of the buildings. Consequently, regular maintenance of the lower parts of the houses, the surrounding earth layer, and the pillars would have been important routine tasks.

Coming to the long-standing controversy as to the origins of the Shihsanhang Culture, given its iron smelting and abundant funerary items, scholars have tended to focus on these novel elements and new technologies. Nevertheless, a few scholars have also drawn attention to those aspects of northern Taiwan’s prehistoric cultures inherited by Shihsanhang Culture.

Thus for any consideration of Shihsanhang Culture’s origins, and why it was the north of Taiwan that first entered the Metal Age from the Neolithic Age, it is necessary not to focus merely on those aspects that were introduced from outside but, rather, it is also necessary to understand and consider the Shihsanhang cultural content as a whole, and undertake a comparative study of the affinities with the northern archaeological cultures of earlier ages. Only then will it be possible to understand the role of local cultures within Shihsanhang Culture.

According to current understanding, there were at least the following important cultural elements inherited by Shihsanhang Culture from various earlier prehistoric cultures in northern Taiwan:

1. The distribution range of Shihsanhang Culture initially overlapped, and later developed from, those of Shuntanpu Early Culture, Shuntanpu Late Culture, Yuanshan Culture, and Botanical Garden Culture.

2. All these peoples lived in stilt houses and cultivated rice, used long-term, fixed, medium and large-scale settlements, had wells with wooden structures, and built drainage ditches.

3. All made pottery using the slab-build method, which was then fired in the open air. The basic form of pottery was the globular-bellied, round-bottomed guan jar, and from Shuntanpu Early Culture, Shuntanpu Late Culture, Yuanshan Culture, and Botanical Garden Culture to the Shihsanhang Culture, all showed impressed lattice patterns. Although the vessel proportions, firing temperatures, and hardness all show differences, nevertheless the vessel forms remained similar.

4. All the ground stone adzes, grindstones, hammers, and so forth unearthed were made using similar production techniques.
From the above similarities, Shihsanhang Culture clearly inherited important content from the prehistoric cultures that inhabited northern Taiwan over the previous several thousand years and so, without doubt, represents the developmental evolution of northern Taiwan archaeological cultures. One other aspect: Shihsanhang Culture has a stronger maritime character. Not only did it have frequent contacts with other contemporaneous archaeological cultures in Taiwan, but also conducted trading interactions with people in China and Southeast Asia, shaping Shihsanhang’s complex and unique cultural appearance.

**References**

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