

RECENT ADVANCES IN THE IRON AGE ARCHAEOLOGY OF TAIWAN

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ABSTRACT

During the last decade, quite a number of Iron Age sites have been discovered and excavated due to the rapid growth of rescue archaeology in Taiwan, and a lot of important archaeological materials have been brought to light. Seven regional Iron Age cultures have so far been recognized in Taiwan, including the Shisanhang culture, the Fanziyuan culture, the Daqiuyuan culture, the Kanding culture, the Niasong culture, the Guishan culture and the Jingpu culture. This paper is in an attempt to give a general introduction to each of these cultures.

NB: This paper uses Pinyin romanization for all Chinese archaeological and personal names, except for that of the author himself (Tsang Cheng-hwa), which is in Wade-Giles romanization.

Over half a century ago, the Japanese archaeologist Kano Tadao (1944) speculated that the Iron Age culture of Taiwan was introduced from the Philippines. Since then, few detailed studies on the Iron Age cultures in Taiwan have been conducted. During the last decade, however, quite a number of Iron Age sites have been discovered and excavated due to the rapid growth of rescue archaeology in Taiwan, and a lot of important archaeological materials have been brought to light. Seven regional Iron Age cultures have so far been recognized in Taiwan, including the Shisanhang, Fanziyuan, Daqiuyuan, Kanding, Niasong, Guishan and Jingpu (Figure 1).

The Shisanhang Culture

The Shisanhang culture is distributed mainly in the coastal regions of northwestern Taiwan and is typified by the Shisanhang site, which is located near the mouth of the Danshui River and was discovered by Sheng Qingyi, an

amateur archaeologist, in 1959. Professor Shi Zhang-ru and his students in the Department of Archaeology and Anthropology, National Taiwan University, conducted a trial excavation at the site in the same year. A few cultural remains were unearthed, including pottery, pitted stone pebbles, hammerstones, iron artifacts, glass artifacts and agate beads. In addition, two flexed burials were found. Based on these findings, especially the pottery decorated with check-impressions, Yang Junshi (1961) postulated that the culture of the Shisanhang site was similar to that of the historic Ketagalan tribe of northern Taiwan.

In 1990, the Archaeology Division of the Institute of History and Philology, Academia Sinica, conducted large-scale rescue archaeology at Shisanhang because of the damage done to it during the construction of the Bali Sewage plant. A large number of artifacts and features were unearthed which have greatly enriched our understanding of this culture.

The Shisanhang culture is characterized chiefly by a fine-paste, reddish-brown pottery decorated with geometric patterns such as checks, chevrons, circles, parallel lines, rhombi, and so on. The decoration was done mainly by impression, but incised and dot-stamped designs are also common. A few anthropomorphic representations are especially remarkable (Figure 2). The major pottery forms include bottles, bowls, basins and globular cooking pots. These pottery characteristics are indeed similar to pottery used by the Ketagalan and Kavalan tribes in northern Taiwan in recent times. Very few stone tools have been found, and most were objects for everyday use such as pitted stones, hammerstones, pestles, spindle whorls, and so forth. Bone and antler items were mainly pendants, spearheads, arrowheads and hooks. Most of the implements and weapons were probably made of iron, but only a few iron knives and pointed artifacts were found. An iron-smelting furnace found in a workshop in Shisanhang reveals that these people had the knowledge and ability to smelt iron.

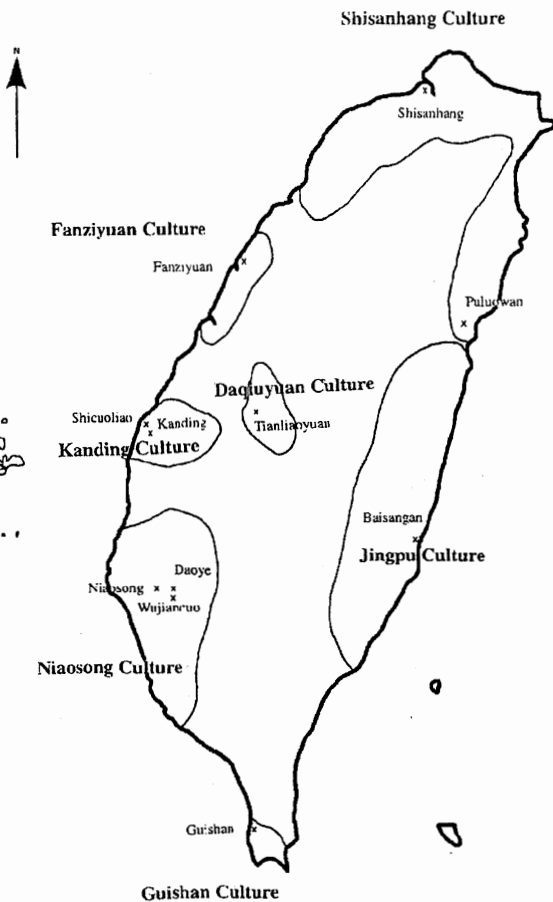


Figure 1: The Iron Age Cultures in Taiwan and their type-sites.

The settlements of this culture were mostly located near the sea and rivers. Their houses were probably in the pile-dwelling style. The inhabitants lived on cereals such as rice, but fishing, collecting shellfish and hunting were still important. They engaged in long-distance trade for obtaining exotic goods such as agate beads and ornaments, bronze artifacts, glass beads and bracelets, gold ornaments, porcelain, silver objects, and so on. One bronze bowl gilded with gold, together with copper coins and fragments of Tang and Song ceramics, were also found. These provide important evidence for early contact between Taiwan aborigines and Chinese. More than 200 hundred human burials were uncovered in the site, laid out in a flexed position with heads to the southwest.

Eight radiocarbon dates from three Shisanhang culture sites – Shisanhang itself (Song 1965, Tsang *et al.* 1995), Xixinzhuangzi (Song 1978) and Puluowan (Liu 1990), are listed in Table 1.



Figure 2: Earthenware pot with human face decoration from Shisanhang.

More than forty further C-14 age determinations have been obtained from the salvage excavations at the Shisanhang site recently, and will be published later in the excavation reports. These dates fall mainly between 2300 and 500 bp, and most cluster around 1500 to 1000 bp.

The Fanziyuan Culture

The Fanziyuan culture is located along the west-central coast of Taiwan. The site at Fanziyuan, Dajia Zhen, Taizhong Prefecture, is the type-site. Grayish black bottles, bowls and jars are the common pottery forms of this culture. They are commonly decorated with impressed patterns such as checks, chevrons, dots, herringbones, stamped circles and dentate-stamped wavy lines. The stone tools consist of chipped hoes, polished rectangular perforated stone knives, saddle-shaped stone knives, and pitted stones. The prevalence of knives chipped from pebble flakes is one of the major characteristics of the Fanziyuan culture. Bone and antler tools include harpoons, awls and points. Iron knives, glass and agate beads were also found at Fanziyuan.

Shell middens occur in all sites of the Fanziyuan culture. Shells as well as bones of deer, goat, pig, bird and fish suggest that the major food resources of the Fanziyuan people were acquired by fishing, collecting and hunting. However, the large number of stone knives seems to indicate that they were also agriculturalists.

The burials unearthed from the sites of the Fanziyuan culture reveal mortuary practices different from those of the Shisanhang culture. Here they practiced extended and prone burial with the head towards the east. The skull is usually covered by a pot (Song 1962).

Several radiocarbon dates have been obtained from the sites of Fanziyuan (Song 1965), Longquancun (Sun 1977), Shanjiào (Sun 1977) and Shanzhijiao (Qu 1991). They are listed in Table 2.

The Daqiuyuan Culture

This culture is located in the hilly region of the middle Zhuoshui River valley in Nantou Prefecture, and is typified by the Tianliaoyuan Site at Jiji Zhen, Nantou Prefecture. The pottery of this culture is characterized by a reddish-brown, soft, coarse sand-tempered and plain ware. Stone tools are abundant including chipped and ground hoes,

knives and net sinkers. No iron tools have been found in this culture so far, but glass beads, which are similar to those found in the Shisanhang and Fanziyuan cultures in the coastal regions, have been found in the site of Tianliaoyuan. This suggests that interaction occurred between coastal and inland cultures during the Iron Age of Taiwan.

Four radiocarbon dates have been obtained for the Tianliaoyuan site (Tsang 1978) and are listed in Table 3.

The Kanting Culture

Located on the coast of Yunlin and Jiayi in west-central Taiwan, this culture has been discovered only recently (Tsang *et al.* 1995). Kanting and Shicuoliao are the type-sites. Stone tools are completely absent from this culture. Pottery is mostly yellowish brown in color, with a fine sandy paste and without decoration. Glass beads and fragments of Chinese ceramics of the Song, Yuan and Qing dynasties have been found in association. Two radiocarbon dates of 810±60 bp and 780±60 bp have been obtained from the Kanting site (Tsang *et al.* 1995).

The Niaosong Culture

The Niaosong culture is widely distributed in the southwestern part of Taiwan, north to the coastal plains and hills of Jiayi and Tainan, and south to those of Gaoxiong and Pingdong Prefectures. Niaosong, which is located at Yongkang Xiang of Tainan Prefecture, is the representative site of this culture. Most of the pottery is reddish brown in color, with a sandy paste. The major forms of pottery are globular cooking pots and bowls. Decoration is rare, but includes incised, circular and shell-impressed patterns. The occurrence of many black hollow bird's-head shaped pottery figurines, the functions of which are still unknown, form one of the characteristic features of the Niaosong culture. Stone tools, including knives, adzes and pitted pebbles, are very rare, and are even completely absent in some sites (Huang 1979). Iron arrowheads, spearheads, knives, nails, glass bracelets and beads, and fragments of Chinese ceramics of Ming dynasty date have been found in the sites of Niaosong, Daoye (Tsang n.d.), Wujiancuo (Tsang n.d.) and Xiliao (Liu 1994).

Several tens of human burials were discovered during recent salvage excavations in the Daoye and Wujiancuo sites of Tainan. Most skeletons rest in a supine and extended posture. An earthenware pot was usually put near the skull. Earthen rings, glass beads and bracelets, iron

Table 1: Radiocarbon dates for the Shisanhang Culture

Lab. No.	Site	Dated material	C-14 Date (bp)
NTU-7	Shisanhang	Shell	1444±204
NTU-8	Shisanhang	Shell	1145±206
NTU-52	Xixinzhuangzi	Shell	1940±135
NTU-237	Xixinzhuangzi	Shell	2390±200
NTU-232	Xixinzhuangzi	Shell	2010±200
NTU-1607	Puluowan	Charcoal	900±100
NTU-1090	Puluowan	Charcoal	667±80
NTU-1127	Puluowan	Charcoal	791±40

Table 2: Radiocarbon dates for the Fanziyuan Culture

Lab. No.	Site	Dated Material	C-14 Date (bp)
Y-1499	Fanziyuan	Shell	1500±80
NTU-235	Longquancun	Shell	1653±87
NTU-231	Longquancun	Shell	1689±51
NTU-233	Longquancun	Shell	1669±50
NTU-237	Longquancun	Shell	1597±48
NTU-232	Longquancun	Shell	1480±44
NTU-229	Longquancun	Shell	1429±71
NTU-234	Longquancun	Shell	1365±41
NTU-239	Longquancun	Shell	1349±67
NTU-230	Longquancun	Shell	1193±36
NTU-238	Longquancun	Shell	1185±59
NTU-236	Longquancun	Shell	1081±32
NTU-240	Longquancun	Shell	959±48
NTU-242	Shanjiào	Charcoal	1595±48
NTU-1363	Shanzhijiao	Charcoal	760±60
NTU-1364	Shanzhijiao	Charcoal	580±60

arrowheads and iron spearheads are occasionally found with the burials.

Ten radiocarbon dates have been obtained from Niaocong (Song *et al.* 1992), Daoye (Tsang 1996), Wujiancuo (Tsang n.d.), Xiliao (Liu 1994) and Hunei (Song *et al.* 1992) and are listed in Table 4.

The Guishan Culture

This Guishan culture is represented by only a few sites including Guishan itself (Li *et al.* 1985) and Houbishan (Huang *et al.* 1987) in Pingdong Prefecture, and Chulu (Ye 1994) in Taidong Prefecture. Only the Guishan site, which was discovered by the late Li Guangzhou and others in 1985, has been recently excavated, by Li Kuangti (1993, 1994, 1995). Cultural remains from Guishan include potsherds, spindle whorls, pottery rings, ceramic figurines, hard glazed wares, chipped stone hoes, ground stone axes, shell scrapers, bone points, animal bones and shells, as well as iron knives and iron spearheads. The most remarkable feature of this culture is the unique pottery style, which is quite distinctive from that of the other cultures of the same time period in Taiwan. For example, some decorative motifs on pot surfaces, such as impressed human figures (Figure 3) and J-shaped elements, as well as the black bowls with flaring rims, constricted necks and wide bottoms with outward extrusions and low ring-feet, have not been found in any other sites in Taiwan.

Three radiocarbon dates (Li *et al.* 1985, Huang *et al.* 1987) are now available for the Guishan culture and are listed in Table 5.

The Jingpu Culture

Distributed mainly in the coastal regions between Huanlian and Taidong, the Jingpu culture has been recognized as the latest prehistoric culture on the eastern coast of Taiwan. Recent excavations at the sites of Jingpu in Hualien (Huang *et al.* 1989), Baisangan in Taidong (Ye 1993), and in sites along the southern bank of the Mawuku River (Huang and Liu 1993), have unearthed more materials belonging to this culture.

Jingpu pottery is reddish-brown and tempered with sand. The major forms consist of globular pots, urns, bottles, cups and plates. Some vessels were provided with handles. Most of the pottery is undecorated. A small number of stone tools, including hoes, adzes, pestles and hammers were discovered, as well as iron implements, bronzes, glass, porcelain and glazed pottery. Two human burials were recovered from the Baisangan site. Each of the burials was under a structure, which was piled up with cobbles in a roughly circular shape.

Table 3: Radiocarbon dates for the Daqiuyuan Culture

Lab. No.	Site	Dated material	C-14 Date (bp)
NTU-289	Tianliaoyuan	Charcoal	1705±51
NTU-231	Tianliaoyuan	Charcoal	1816±60
NTU-233	Tianliaoyuan	Charcoal	1874±55
NTU-237	Tianliaoyuan	Charcoal	1905±57

Table 4: Radiocarbon dates for the Niaocong Culture

Lab. No.	Site	Dated Material	C-14 Date (bp)
NTU-1037	Niaocong	Charcoal	1470±50
NTU-?	Xiliao	Shell	1630±40
NTU-?	Xiliao	Shell	1580±40
NTU-1402	Hunei	Shell	1560±40
GX-21849	Daoye	Charcoal	1705±51
GX-21851	Daoye	Charcoal	1695±115
GX-21850	Daoye	Charcoal	1700±170
GX-21852	Daoye	Charcoal	1265±215
GX-23633	Wujiancuo	Shell	1460±65
GX-23634	Wujiancuo	Shell	1625±70

The skeleton was poorly preserved in each burial and remaining teeth and limb bones show that the bodies were probably in supine and extended postures. One burial was particularly rich, with bronze necklaces, copper bells, gold leaves, glassware, glass beads, agate beads and iron tools (Ye 1993).

Archaeologists tend to believe that the predecessors of the Ami people, who still live in this region of eastern Taiwan today, probably created the Jingpu culture. No radiocarbon dates are yet available for the Jingpu culture, but a time range from 1000 to 500 BP has been postulated (Ye 1993).

CONCLUSIONS

On the basis of the above information, it is now known that the Iron Age cultures in Taiwan are indeed far more complex than speculated by Kano. Iron Age cultures in Taiwan occupied not only the eastern coast, as Kano pointed out, but existed all around the island. In addition, all except for the Daqiuyuan culture were distributed mainly in coastal areas. Kano also suggested that the introduction of iron metallurgy into Taiwan probably occurred around AD 600-900, corresponding to the later phase of the Philippine Iron Age as reconstructed by Beyer (Song 1955). But current archaeological data show that Iron Age cultures in Taiwan began around 2000 BP or a little earlier. This date is almost contemporary with that of 370 BC suggested for the first appearance of iron-using societies in the Philippines by Dizon (1998:124).

Although regional differences in pottery styles and burial practices among the Taiwan Iron Age cultures can obviously be seen, almost all possessed a similar assemblage of trade

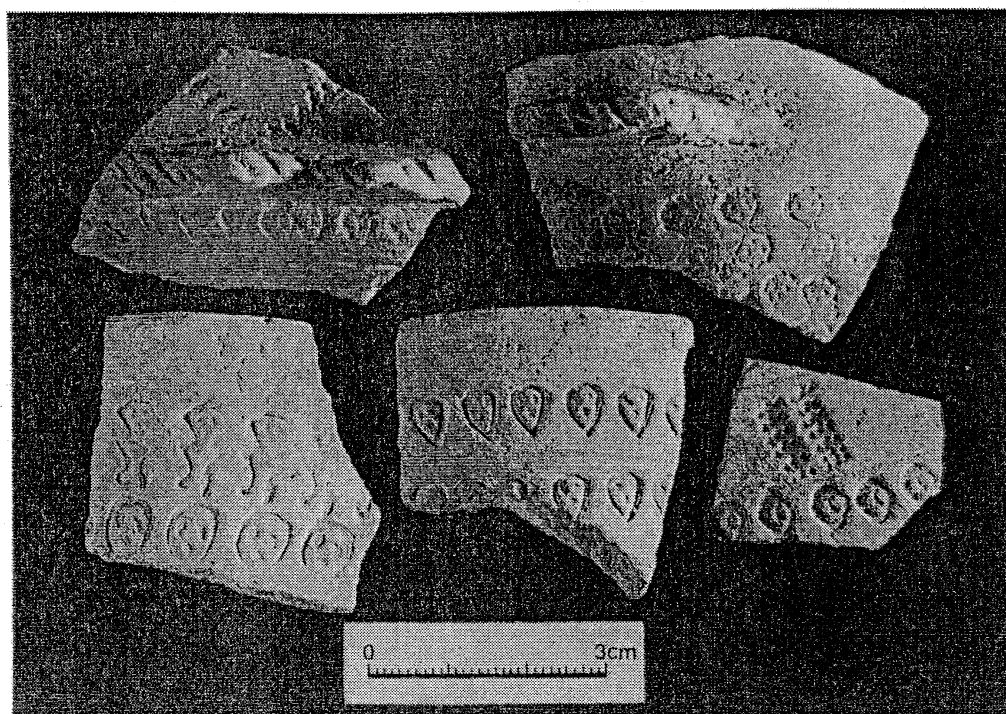


Figure 3: Potsherds with human figure decorative stamps from Guishan (from Li 1985).

Table 5: Radiocarbon dates for the Guishan Culture

Site	Dated material	C-14 Date (bp)
Guishan	Shell	1550±60
Guishan	Human bone	1525±120
Guishan	Human bone	1470±15

goods, including ceramics and artifacts made of iron, bronze, glass and gold. This seems to indicate that networks of regional exchange and maritime trade existed in Taiwan during the Iron Age.

The discovery of an iron workshop at the Shisanhang site is of the utmost interest and provides hard evidence for the existence of iron technology in prehistoric Taiwan. A radiocarbon date of 1570±90 bp (NTU-2173) for a sample of iron slag collected from this workshop indicates that the earliest appearance of iron making at the Shisanhang site is no later than 1500 BP. This means that the iron artifacts found in many other Iron Age sites in Taiwan were not necessarily all imported from outside, as Kano and others thought, and some were probably locally made.

The trade between Taiwan and China, as evidenced by Chinese goods such as the gilded bronze bowl, copper coins and porcelains found in Shisanhang and other Iron Age sites, seems to imply that the Chinese mainland would have

been a major source area for the introduction of iron technology to Taiwan, in addition to Southeast Asia. But one problem needs to be resolved. All of the trade goods from China have been dated no earlier than the Tang dynasty (AD 618-907), thus apparently later than the date of the appearance of iron technology in Taiwan. Is it possible that trade contact between Taiwan and China could have occurred earlier? Or is the single radiocarbon date for the Shisanhang iron slag problematical? In any event, we can postulate on the basis of current evidence that iron artifacts were introduced to Taiwan as trade goods a little earlier than the birth of Christ, and actual knowledge of iron technology was introduced from neighbouring areas at a later date.

Although a large number of Iron Age sites have been recovered in Taiwan during the past decade, the research on them has been mainly focused on chronology. A detailed time-space framework for the Iron Age cultures has now been reconstructed. Few studies, however, have paid attention to issues of iron technology and the socio-economic and political complexities behind the material remains. Further research on these aspects will be certainly very important, not only for our understanding of the culture and society of Iron Age Taiwan, but also the later prehistory of Southeast Asia.

REFERENCES

- Dizon, E. 1998. The metals of civilization. In Fr. Gabriel S. Casal, E. Dizon, W. Ronquillo and C. Salcedo (eds), *The Earliest Filipinos*, pp. 113-26. New York and Manila: Reader's Digest and Asia Publishing Co.
- Huang Shiqiang and Liu Yichang 1993 *Salvage and Assessment of the Prehistoric Sites, North and South of the Tonghe Bridge*. Department of Anthropology, National Taiwan University, *Monograph* no. 19 (In Chinese).
- Huang Shiqiang, Chen Youbei and Yen Xuecheng. 1987. *Report on Archaeological and Ethnological Investigations in the Kending National Park*. Hengchun: Kending National Park (in Chinese).
- Huang Shiqiang, Zhang Huiduan, Chen Weixin, Zhu Zhengyi and Chen Youbei. 1989. Prehistoric cultures. In *Investigations and Analyses on the Land resources of the East Coast of Taiwan*. Bureau of Housing and City Planning of Taiwan Provincial Government (in Chinese).
- Huang Taixiang. 1979. The Niasong Site of Yongkang, Tainan Prefecture. MA dissertation, Department of Anthropology, National Taiwan University (in Chinese).
- Kano Tadao. 1944. Taiwan Senshijidai no Bunkaso. *Gaku-kai* 1(6) (in Japanese).
- Li, Guangzhou. 1985. *Archaeological Investigations in the Kenting National Park*. Pingtung: Administrative Bureau of Kenting National Park.
- Li, Guangzhou, Chen Yongsheng, Ling Bingchang, Chen Weijun, Han Xutung and Chen Youbei. 1985. *Report on the Archaeological Survey in the Kending National Park*. Hengchun: The Kending National Park (in Chinese).
- Li Kuangti. 1993. *Research Report on the Survey and Assessment of the Prehistoric Site of Guishan at the Construction Ground of the National Marine Biological Museum*. Hengchun: Preparatory Office of the National Marine Biological Museum (in Chinese).
- Li Kuangti. 1994. *Investigation on the Marine Adaptations of Prehistoric Settlements at the Southern Tip of Taiwan - example from the Guishan Site*. Hengchun: Preparatory office of the National Marine Biological Museum (in Chinese).
- Li Kuangti. 1995. *A Comparative Study on the Prehistoric Coastal Settlements in the Hengchun Peninsular, Southern Taiwan*. Hengchun: Preparatory office of the National Marine Biological Museum (in Chinese).
- Liu Yichang. 1990. Report on the first season excavation at the Puluowan site, Xiulin, Hualien. *Bulletin of the Institute of History and Philology, Academia Sinica* 62(2):317-82 (in Chinese).
- Liu Yichang. 1994. *Prehistoric Sites in Gaoxiong Prefecture*. Gaoxiong: Gaoxiong Prefectural Government (in Chinese).
- Qu Huili. 1991. Preliminary Report on the first season excavation at the Shanzujiao site, Nantun District, Taichung City. *Field Archaeology* 2(1):61-72 (in Chinese).
- Song Wenxun (translator). 1955. *Outline Review of Taiwan Archaeology and Ethnology* (translated from Kano Tadao (1952). *A Study of Ethnology and Prehistory of Southeast Asia, vol. 2*). Taipei: The Historical Research Commission of Taiwan Province (in Chinese).
- Song Wenxun. 1962. Human burials at the Fanziyuan shell mound, Dajia, Taichong. *Bulletin of the Department of Archaeology and Anthropology, National Taiwan University* 19-20:83-90 (in Chinese).
- Song Wenxun. 1965. The dates of the prehistoric cultures in western Taiwan. *Taiwan Wenxian* 16(4):144-55. Taipei (in Chinese).
- Song Wenxun. 1978. Taiwan during the prehistoric period. In *Records of the Symposium on Taiwan History*. Taipei: Department of History, National Taiwan University (in Chinese).
- Song Wenxun, Yin Jianzhong, Huang Shihqiang, Lian Zhaomei, Tsang Cheng-hwa, Chen Zhongyu and Liu Yichang. 1992. *The First Stage Report on the Preliminary Assessment of the Important Archaeological Sites in Taiwan*. Taipei: Ministry of Interior (in Chinese).
- Sun Baogang. 1977. Reports on the trial excavations on the sites of Zhuanghoucun, Longquancun and Shanjiao, *Annual of Taiwan Museum*. no. 20 (in Chinese).
- Tsang Cheng-hwa. 1978. The trial excavation at the Tianliaoyuan site, Jiji Zhen, Nantou Prefecture. *Bulletin of the Institute of History and Philology, Academia Sinica* 49(4):3-58 (in Chinese).
- Tsang Cheng-hwa. 1996. *Report on the Archaeological Survey and Assessment in the Tainan Science-based Industrial Park*. Taipei: National Science Council (in Chinese).
- Tsang Cheng-hwa. n.d. *Progress Report on the Salvage Archaeology at the Wujiancun site, Tainan*. Manuscript (in Chinese).
- Tsang Cheng-hwa, Chen Zhongyu and Liu Yichang. 1995. *A General Survey of Archaeological Sites in Tai-Min Area (Phase III)*. Taipei: Ministry of Interior (in Chinese).
- Yang Junshi. 1961. Archaeological report of the prehistoric sites at Shisanhang and Tabenkeng, Taipei. *Bulletin of the Department of Archaeology and Anthropology, National Taiwan University* 17-18:45-70 (in Chinese).
- Ye Meizhen. 1993. A preliminary report on the trial excavation at the Baisangan site. *Newsletter of the National Museum of Prehistory* 1:30-58 (in Chinese).
- Ye Meizhen. 1994. The discovery and the reconnaissance of the Chulu site in Beinan Xiang, Taidong Prefecture. *Newsletter of the National Museum of Prehistory* 3:75-94 (in Chinese).