

The Mesolithic in South China

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ABSTRACT – *The history of the study of the Mesolithic in China is longer than sixty years. In south China many cave sites relating to the Mesolithic have been found. Typological implements excavated in these sites imply that the cultural transition in this period was closely related to climatic changes that cause environmental diversification, and inevitably lead to changes in humans' mode of subsistence. Although the discussion of the existence of Mesolithic culture in China is still a controversial topic to many Chinese archaeologists, the author insists that archaeologists pay more attention to the subsistence mode of ancient people in this transitional period, than become immersed in the traditional historiographic orientation.*

IZVLEČEK – *Zgodovina raziskav mezolitika na Kitajskem je dolga že več kot šestdeset let. V južni Kitajski so bila odkrita številna jamska najdišča, ki so povezana z mezolitikom. Izkopani predmeti iz teh najdišč kažejo, da je bil kulturni prehod tega obdobja tesno povezan s klimatskimi spremembami, ki so povzročile spremembo okolja, kar je neizogibno vodilo v spremenjen način preživljanja takratnega človeka. Čeprav je razpravljanje o obstoju mezolitske kulture na Kitajskem za mnoge kitajske arheologe še vedno sporno, avtor članka vztraja pri mnenju, naj arheologi posvečajo več pozornosti načinu preživljanja starodavnih ljudi v tem prehodnem obdobju, in naj se ne poglobljajo toliko v tradicionalno zgodovinsko usmeritev.*

KEY WORDS – *South China; Mesolithic; pebble tools; hunting-gathering; broad-spectrum food*

INTRODUCTION: MESOLITHIC STUDIES IN SOUTH CHINA¹

The history of the studies of the Mesolithic in China has not been more than seventy years since the archaeologists began to pay attention to this topic in the mid-1930s (Zheng 1936.20, 54). In 1934, Prof. Pei, one of the earliest Chinese archaeologists, surveyed three limestone caves, namely Baqiao, Baxun, and Tengxiang, in Wuming County, and D cave in Guilin, Guangxi Province² in south China, and found some pebble artefacts. He thought some of these stone implements bore a few characteristics similar to those of the Hoabinhian Culture, the famous Me-

solithic in North Vietnam, and implied these could belong to the Mesolithic (Pei 1935.393–412). Also, these sites were further identified as Mesolithic by the archaeologist An twenty years later (An 1956.36). From then on, the study on Mesolithic in China never stopped. In 1960s and 1970s, more findings relating to the Mesolithic were found in South China. These include: Gaitou Cave, Chenjia Cave in Liujiang, Aidong Cave in Congzuo County, Guangxi Zhuang Autonomous Region (Jia et al. 1960.64–68); Qingtang in Yingde County, Guangdong Province (Peng

¹ According to the accepted common practice, 'South China' geographically refers to the area of Pearl River Valley, which covers from eastern Guangdong in the east to the eastern edge of the Yungui Plateau in the west, and from Wuling Mountains in the north to Hainan Island in the south. Accordingly, South China in this article includes the whole area of Guangdong Province and Guangxi Zhuang Autonomous Region, the main body of Pearl River Valley, which is about 0.41 million km².

² In this article Guangxi Province refers to as the same place as Guangxi Zhuang Autonomous Region.

1961.585–588); Dongyan Cave in Guangxi (Wu, Xin-zhi 1962.408–411); Zengpiyan Cave in Guilin, Guangxi (Working Team For Cultural Relics of Guangxi Zhuang Autonomous Region 1976.20). After 1980, more systematic surveys were done in south China, in which more Mesolithic sites were found, such as Dushizai in Yangchun, Huangyan Cave, Dongzhongyan and Luojiyan in Fengkai County, Guangdong (Song *et al.* 1981.292–293; 1991.1–12); Miaoyan Site in Guilin, Liyuzui Site in Liuzhou, Guangxi (Liuzhou Museum 1983.769–774); II second stratum in Bailian Cave in Guangxi (Yang 1991.154; Kong *et al.* 1994.147–155); Luosha Cave in Guangdong (Zhang 1994.300–308), and Niulan Cave in Yingde, Guangdong (Qiu, Li-cheng *et al.* 1999.1–111). Most of these sites are limestone caves located at branches of Xijiang River Valley and Beijiang River Valley (Fig. 1).

Generally, all of these sites are located in valleys and small alluvia basins of perennial rivers. Most of them are found in caves of limestone hills, which are topographically common in mountainous areas in south China. The typological findings of these limestone caves are pebble tools including chipped scrapers, choppers, stone gravers, and holed stone, bone implements, remains of mussels and shells, shell tool, and animal bones. At some site are found a few stone arrows and flint microlithics (Fig. 2). Radio-carbon dating shows the earliest date of these Mesolithic remains is more than 15 000 BP (Bailian Cave) and the latest date is earlier than 9000 BP (Zengpiyan Cave), which means the cultures of these

sites exist between the last stage of the late Pleistocene and the first stage of the early Holocene.

THE SUBSISTENCE OF MESOLITHIC PEOPLE IN SOUTH CHINA

A systematic and dynamic review of Mesolithic findings at these sites in south China exposes the socioeconomic structure and the subsistence style in this period.

The culture of this period obviously not only carries some old characteristics of Palaeolithic culture, but also some new elements for Neolithic culture, which is mostly shown in the composition of implement typology. In south China, the dominance of large and medium sized pebble tools had existed for a long time since the early Palaeolithic. One of the examples is that of pebble tools found in the terraces along the You River in Guangxi, which is dated to as early as 700 000 BP (Huang *et al.* 1990.105–112). The pebbles were selected by ancient people from a nearby riverbed. The technology of these pebbles is simple, since most of them are one-side chipped and have wide and flat tops and deep flake scars. Choppers, scrapers, hammers, and drills are common types of pebble implements. While pointed tool, tools for sculpture are seldom found. The composition of these tools had lasted from the early to late Palaeolithic in this area. While in Mesolithic times, the skills of making pebble tools were not only inherited, but also obviously improved: pebble



Fig. 1. Localities of Mesolithic Sites in South China: 1. Wuming County (Baqiao, Baxun and Tengxiang Caves); 2. Gaitou Cave; 3. Chengjia Cave; 4. Aidong; 5. Qingtang; 6. Dongyan Cave; 7. Zengpiyan Cave; 8. Dushizai; 9. Huangyan Cave; 10. Dongzhongyan Cave; 11. Luojiyan; 12. Miaoyan Cave; 13. Liyuzui; 14. Bailian Cave; 15. Niulan Cave.

Site	Location	Stratified Deposit	Main Findings	Radio-carbon dating (BP)
Liyuzui	Liuzhou City, Guangxi Province	Lower layer	Chipped pebble tools, stone artefacts with polished edge, holed stones, a few bone tools, animal bones such as needle, awl, and knife, mussels, a little piece of cored sandy pottery	12 880
Zengpiyan Cave	Guiling City in Guangxi Province	Early stratum	Chipped pebble tools, stone artefacts with polishing edge, hole stone, grinding stones, mussel bones, animal bones, sandy pottery shards	More than 9000
Bailian Cave	Liuzhou City, Guangxi Province	Middle layer (II period)	Chipped pebble tools including choppers, scrapers, holed stones, stone artefacts with polishing edge, flint microlithics including arrows, points, two-sided scrapers, one-sided scrapers, and stone gravers, shells, animal bones	15 910
Huangyan Cave	Fengkai County, Guangdong Province	Middle layer	Quantity of pebble scrapers, pebble choppers, and hammers, stone awl stone artefacts with polishing edge, a few holed stones, shells, animal bones	10 950
Dushizai	Yangchun County, Guangdong Province	Upper layer	Chipped pebble tools, stone artefacts with polishing edge, bone tools, shells, bone arrow	11 500
		Middle layer	Chipped pebble tools, holed bone tools, bone tools, shells, animal bones	14 260–15 350
Niulan Cave	Yingde County, Guangdong Province	Middle layer	Chipped pebble tools, stone artefacts with polishing edge, holed bone tools, shell net-weights, shells, animal bones, silicified remains of rice	10 450

Fig. 2. The main Findings in some Mesolithic Sites in south China.

tools were usually made in oblique, straight, and sharp edge. Almost all the angles of the oblique-edged pebble tools are more than 75°. Meanwhile, the chipped and flake scars on the oblique-edged tools are more systematically distributed than those on the pebble tools of Palaeolithic. In Huangyan Cave and Dushizai site, hundreds of such artefacts are excavated, and dominate the stone artefacts (Fig. 3). Interestingly, the dominance of and the manufacturing skills for the pebble stone are very similar to those of Hoabiahian culture in Southeast Asia. Another interesting phenomenon in some sites in south China is the emergence of holed stones. Hole stone artefacts are obviously part of composite implements, and can be regarded as the model of some advanced tools in Neolithic.

These pebble tools are closely related to the ecology at that time if we look at climate changes. In the early part of the Holocene, the last ice age ended, and as the glaciers slowly melted away the weather became hot and humid in the subtropical region including south China and Southeast Asia. The widely distributed and most appropriate materials available for these tools in hot and wet south China were bamboos, woods, and lianas. In view of the function of traditional tools in the Palaeolithic, large pebble choppers were not suitable for processing these raw materials. Instead, people tended to use a different pebble tool, a pebble similar to that in the Palaeolithic, but with an oblique edge. We guess that these kinds of tools were used as intensive and efficient choppers to process bamboos, woods and liana

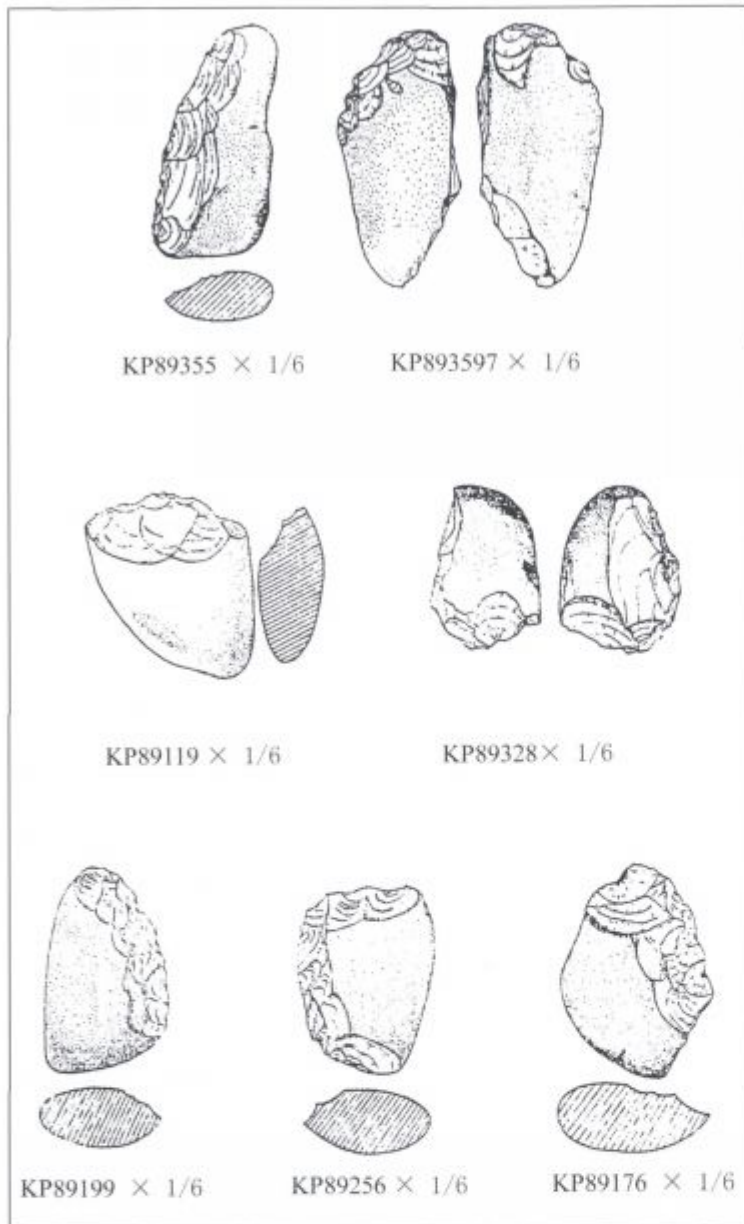


Fig. 3. Choppers from Huangyan Cave, Guangdong Province.

plants. Hence, the oblique-edged pebble tools are evidence of the adaptation of human beings to the new ecology in Mesolithic times.

In the early Holocene, humans had an opportunity for foraging since more aquatic species were reproduced as the sea level and water level inland in south China rose along with a global rise in temperature. As a result, ancient people were attracted to living in caves which were not very high in relative altitude from the ground (the relative altitude of the entrances of the caves in Figure 1 ranges from several metres to twenty metres) and close to rivers, lakes, and the seashore. Thus, gradually, fishing and gathering were developed.

Another factor of socio-economic development manifested is the large amount of remains of shells of oysters, clams, and mussels. In almost every cave, accumulated mounds of discarded shells were excavated. This reflects that people at that time had learned to intensively utilise aquatic resources by gathering shellfish along lakesides, streams, and coastlines. Fishing in the environment in Mesolithic times was easier than hunting, since seasonal changes did not have too much influence on aquatic molluscs in the environment, and consequently did not affect human engagement in fishing. Conversely, hunting-gathering production is dependent on seasonal changes. But a question arises here: how could ancient people fish easily with their relatively undeveloped technology? Contemporary ethnographical data can help answer this. In northeast China, some minorities nowadays merely use a harpoon made from the branch of a tree, or a small wicker basket to fish easily in shallow brooks. We can imagine that ancient people in the Mesolithic understood how to catch fish in a simple way or by using naturally occurring tools, such as branches with forks, as human do now. Consequently, people began to use bones or shells as implements, such as mussel knives and bone knives.

Furthermore, this hunter-gatherer economy brought about the budding stage of agriculture. As is well known, there are several theories/hypotheses about the origin of agriculture and animal domestication. Whatever they are, all of them need some pre-conditions. Objectively, there must be an appropriate ecology that offers food resources and an environment for the domestication of plants; subjectively, population, human skills in getting food, primitive thoughts, values and customs, and social organisations can affect human attitudes to domestication. With the changes of climate and ecology in south China in the period between the late Pleistocene and early Holocene, more food resources were available and there was surplus food. It is not surprising that hunters and gatherers thought to apply their learning of the regulations of plant and animal rearing in different

season. Thus, human practice laid the foundations for the domestication of plants and animals.

Recent findings in the Pearl River Valley support this assumption. In the middle stratum of Niulan Cave in Guangdong Province, archaeologists found small holed pebbles used as fishnet weights, shells, mussels, fish bones, and tortoise shell. All these remains suggest people at that time lived in a pleasant environment with rich food resources. The most exciting find is the silicified remains of rice, of which the ^{14}C is dated as early as 12 000 BP. The rice was analysed by scientists and recognised as neither *Indica* nor *Japonica*. Some archaeologists insist that south China is one of the key zones where ancient people in Mesolithic times began to domesticate rice (Ding 1957; Tong 1984:21–30). The rice remains in Niulan Cave add further evidence to suggest that ancient people might have tried to cultivate rice 12 000 years ago.

Also, the density of these sites in the Mesolithic period is greater than that in the Paleolithic. In Fengkai County, west Guangdong Province, three caves of this period are found in the area of 2 km² in a small river valley. In of these, Huangyan Cave, more than 900 pebble tools were excavated in an area of 300 m² (Fig. 3). Similar finds were also made in Niulan Cave in Yingde County, Guangdong. The large amount of pebbles implies that ancient people in this region lived in groups of considerable size and for a long time. Actually, in the Mesolithic period, south China was covered in tropical and subtropical forests, where rich resources of plants and animals for food selection were available, and this attracted groups of people to stay in place for a longer time. They gradually understood that they could have enough food without seasonal migration. Changes in mobility consequently caused changes in patterns of settlement and social organisation. Women had more energy and time than before to raise children, which reduced the probability of infant mortality. The result of this was an increase in population. Also, they had more time to work together when they settled down. This offered them the opportunity for a division of labour between men and women and the old and young.

All in all, we can imagine ancient people had to endure a long, complicated, and tortuous process to acquire the necessary experience of plant and animal husbandry. However, the evidence of human behaviour, thoughts, and religion in south China at that time is not so encouraging. To understand better the

socio-economic organisation in the context of the transition to farming we need more archaeological data.

DISCUSSION AND CONCLUSION

For more than half a century, the concept of the Mesolithic has been a controversial topic in China. Some Chinese archaeologists do not agree that there was a Mesolithic Period in China. They have two reasons for believing the Neolithic evolved directly out of the Palaeolithic (Jia 1991:53–54; Zhang 2000:6). One reason is that there are no representative Mesolithic artefacts found in China. While in Europe, the Mesolithic has been well recognised for a long time as microlithic and arrows are regarded as the representative tools. Actually, a few microlithic tools are found in some sites, such as the lower layer of Bailian Cave (2668–2800 BP) and the fourth layer of Liyuzui (18 388–21 217 BP) in Guangxi Province, although they do not dominate the composition of stone artefacts. However, the pebble tools make up a large percentage of the artefacts and this may be the crucial difference between the Mesolithic in South China (as well in Southeast Asia) and that in Europe, which was due to the different climate and ecology of the two regions. We cannot deny the existence of the Mesolithic in South China just because there are not so many microlithics and arrows commonly found at all the sites.

Another reason is that a few pottery sherds are found in some Mesolithic strata, such as in Liyuzui site and Zengpiyan Cave site, where pottery are dated earlier than 8000 BP. Traditional Chinese archaeologists define any of these findings as Neolithic culture if they are associated with the pottery. But archaeological contexts have shown the appearance of pottery production in South China before the Neolithic. At Miaoyan Cave in Guangxi (Fig. 1, site 12) five pottery fragments were found. The thermoluminescence dating of these fragments is as early as 15 000 BP (Chen 1999:156–157; Qi 2000:54). Obviously, the Neolithic could not have been identified about 15 000 years ago, if the appearance of pottery is judged as its symbol. The appearance of pottery means nothing more than a revolutionary technology of human beings to make more portable artefacts and their engagement in settlement. Only by studying Mesolithic times can we study how pottery originated.

Some archaeologists make the criticism that this close and short-term view to negate the existence of

Mesolithic in China comes the traditional Chinese cultural-historical methodology, which usually emphasises the importance of the origin, distribution and relationship of archaeological findings, especially the typology of implements, and pays little attention to the dynamic of human culture and events (Chen 2000.11–22). Analysing the process of the transition from the Palaeolithic to the Neolithic, archaeologists should know clearly that the Neolithic revolution constitutes a profound change from the specialised hunting of herd animals to a broad-spectrum economy. People adopted a mixed resource strategy involving plant collecting, hunting and fishing. Namely, the nature of this transition is the subsistence mode of ancient people, regardless of whether there are lithics, arrows, and pottery.

Actually, Chinese archaeologists never stop their studies on the transition from Palaeolithic to Neolithic. Due to new archaeological finds in the last decade and the re-analysis of old materials, the study

of Mesolithic culture in south China has made a breakthrough, which exposes a trace of a cultural transition from Palaeolithic to Neolithic.

Fortunately, more and more Chinese archaeologists are beginning to criticise to the traditional historiographical orientation, and are turning their eyes to this research area with new perspectives. At a Conference on Mesolithic Culture, the first seminar on this topic in China, held in Yingde City, Guangdong Province, in December 1999, archaeologists reported their new findings about the transitional culture from the Palaeolithic to the Neolithic and other related issues. Many of them agreed that more intensive research and co-operation on how Palaeolithic culture shifted to Neolithic culture are necessary. More active excavation should be done, and re-analysis and systematic research on the old findings should not be neglected. Obviously, archaeologists focusing upon Mesolithic culture in China have a long and difficult way to go, but their prospects will inevitably be bright.

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