Study on Rice Agriculture and Civilization Process in Lingnan

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Abstract: The farming of ancient rice in Lingnan, namely the region in south of the Five Ridges, can be roughly divided into three stages: the period before 5000 years ago, the period from 5000 to 4000 years ago, and the period since 4000 years ago. The sources of rice farming varied from different regions and different periods. Rice farming in Lingnan region promoted the emergence of early civilization, which led to stratified society and the specialization of social production in this region. However, the early civilization of Lingnan developed on the basis of civilization in Yangtze River Basin. Due to the decline of civilization in the Yangtze River Basin, the early civilization in Lingnan failed to develop into a more mature form.

1. Introduction

It is generally accepted that prehistoric rice farming originated in the middle and lower reaches of the Yangtze River and then spread outward. Rice remains found in Lingnan area are regarded as a link in the spreading of rice agriculture from the Yangtze River Basin to Southeast Asia. Previous studies mainly focused on the background [1] and the age [2] of spread. The relationship between rice farming and civilization process in Lingnan is neglected. This paper discusses that problem on the basis of previous studies.

2. Ancient Rice Remains in Lingnan and Their Ages

At present, rice remains are found in many regions of Lingnan area, include Qujiang Shixia in northern Guangdong, [3] Shaxia in Saigon, Hong Kong of Pearl River Delta, [4] Guye, Gaoming, [5] Xinghua River Valley in Fengkai of Western Guangdong, [6] Xiaojin in Ziyuan of northern Guangxi, [7] and Gantuoyan in Napo of western Guangxi. In the fourth phase of the Dingsishan Site in Yongning of central Guangxi, rice phytolith is found. [9]

Rice is found in the lower cultural layers of Shixia site and in the cultural layers of Shixia cultural period. Shixia culture existed in the period about 4800-4300 years ago; its lower cultural layers were formed earlier than 5000 years ago. In Shaxia site, the specific layers in which the rice was unearthed are unknown. In Guye site, rice is found in the second phase, which has a history of 4500-4000 years. Most information about rice remains in Fengkai is survey data. Rice in Gantuoyan Site is discovered is in the second phase; its history is no more than 4000 years.

Rice remains are found in the second and third phases of Xiaojin Site. But Wei-ju Chen believes that data about Gramineae pollen of the first phase is similar to that of the second phase, therefore rice farming may also exist in the first phase. [10] Excavators name the first and second phases of the site as Xiaojin Culture. They believe that the first phase was formed earlier than 6000 years ago and the second phase was formed around 6000-4000 years ago. Excavators of Dingsishan Site also believe that the fourth phase was formed 6000 years ago. Through object comparison, Qi Zhang and colleagues find that rice unearthed in the two sites is no older than 5000 years. [11] I agree with above scholars.

It can be seen that the emergence and development of rice farming in Lingnan can be clearly divided into several stages. The first stage was the period before 5,000 years ago; rice farming sporadically appeared in Lingnan, with the lower cultural layer of Shixia Site as the representative. Judging from the appearance of pottery culture, rice farming came from the middle reaches of the

Yangtze River. The second stage was the period between 5000 to 4000 years ago. Many tombs of Shixia culture were buried with rice. Artifacts unearthed were very similar to artifacts of Liangzhu culture in the region of lower Yangtze River, showing the close cultural tie between the two places. Pottery in Xiaojin culture showed that it came from the middle reaches of the Yangtze River. The third stage was the period since 4000 years ago. In the second phase of the Gantuoyan Site in Western Guangxi, rice and millet were unearthed at the same time. Millet should come from Yunnan-Guizhou Plateau, so rice in Xiaojin site of was likely to come from the Yunnan-Guizhou Plateau, too.

3. The process of Civilization in Lingnan

The process of civilization refers to the process of a society's civilization accumulation and transformation from an uncivilized world to a civilized society. A mature civilized society often includes the emergence of cities, characters, smelting metal techniques and the states. China's early process of civilization began at 5000 to 4000 years ago; Shang and Zhou Dynasties witnessed the establishment of mature national civilization. After 5000 years ago, Lingnan region also started its civilization process, which was mainly manifested in three aspects: social stratification, specialization of social production and bronze melting techniques.

3.1 The emergence of stratified society.

Many tombs have been found in Shixia site; these tombs show a gap between the rich and the poor in that period from the very beginning. For example, the age of Shixia M114 belongs to the early stage of Shixia culture, but the number of funerary objects in this tomb is significantly different from those of many small tombs. According to the excavators, there are only two large-scale tombs in the first phase of Shixia culture, and then the number increases to nine in the second phase and ten in 39 tombs in the middle period. The number of funerary objects of large-scale tombs accounts for more than 60% of objects in all tombs in the middle period. Over time, the cultural and social productivity of Shixia culture developed significantly; social wealth became more abundant and concentrated in the hands of a few people.

Guang-zhi Zhang once introduced the classification of social evolution periods proposed by Western scholars. Early societies are divided into bands, tribes, chiefdoms and states. Chiefdom is a stratified society before the state comes into being. [12] According to this theory, Shixia culture was actually a simple form of chiefdom.

3.2 Specialization of social production.

In addition to social stratification, specialization of social production also appeared in the Lingnan area since 5000 to 4000 years ago. The most important discovery is the remains of stone shovels in the surrounding area of Nanning, Guangxi. The environment of this site is special; there are a large number of stone shovels arranged in a certain special shape. Some scholars regard them as the symbol of power. [13] From a technical point of view, these artifacts are in large quantities, and require complex manufacturing technology. Only a high degree of professional skills can produce these stone shovels.

A large number of ornaments, such as stone rings are also found in many sites of the Hutoupu culture in Hanjiang Delta and Yonglang culture in Pearl River Delta of Guangdong Province. These cultures can date back to 4,000 years ago; these ornaments are likely to be made on the basis of social production specialization.

3.3 Bronze smelting technology.

At present, there are little early bronze wares found in Lingnan; but there are many stone patterns used in casting bronze wares that have been found, mainly concentrate in the Pearl River Delta of Guangdong Province, and sporadically distribute in the Hanjiang Delta in eastern Guangdong and the second phase of Gantuoyan site in Napo of western Guangxi; these wares should be made around Shang Dynasty. [14] Stone patterns are used to make small bronze wares such as axes and fishhooks, which are also found in local sites of later period, indicating that people have mastered the bronze

smelting technology.

Compared with the Central Plain Area of China, the bronze melting technology in Lingnan region was backward. At the same time, people in the Central Plain Area developed a mature bronze civilization; pottery models, rather than stone patterns were used in casting bronze wares.

4. The Impacts of Rice Agriculture on Lingnan's Civilization Process

In Lingnan, the process of civilization began after 5000 years ago. The early civilization of Lingnan has two characteristics. One is the abrupt change. The emergence of these complicated societies is not very clear; it seems that they have matured from the first appearance. The other is instability. The civilization fails to develop into a more mature form.

In Shang and Zhou Dynasties, the Central Plains of China entered the mature civilization period, while the civilization process of Lingnan stagnated. The mature Shixia culture and relics of stone shovels disappeared in the late Neolithic.

The civilization process of Lingnan began on the basis of rice farming development. The condition for civilization to come into being is the generation of "surplus" wealth, which is the wealth left after the basic needs of social members are satisfied. Social surplus wealth requires not only the increase in production volume, but also the unequal social relations. Only under these conditions can social wealth be concentrated in the hands of a small number of people.

5,000 years ago, although rice farming appeared in Lingnan region, it was more the result of cultural exchanges. It did not have a substantial impact on the process of civilization in this region.

Many artifacts of Shixia culture, which existed after 5000 years ago, are similar to those of Liangzhu culture which located in the lower reaches of the Yangtze River. These artifacts even include objects with ideological functions, indicating the direct migration of people. Meanwhile, at that time the northern boundary of the tropic area retreated to about 24-26 degrees north latitude; [15] there were several lower gaps in the mountainous areas of Nanling. These gaps were channels not only for human traffic, but also for cold waves from the north. As the climate changes, people living in these areas gradually formed the habit of reserving food. The original fishermen and hunters became collectors, which is also a necessary condition of agricultural production. [16] These factors directly stimulated the development of rice agriculture in the northern and southern areas of the Five Ridges. It is difficult to determine the livelihood of people who made the shovels, but the stone cutting technology is the most difficult step in the process of shovel making. [17] However, large stone tools could be produced through cutting technology in the early stage of Shixia culture. A possible reason is that, local people were influenced by rice farming groups from northern Guangdong, and developed the stone tool making technology. With the development of rice farming, Lingnan area entered the initial stage of civilization.

In Pearl River Delta, a site equivalent to late Shixia Culture is the Sanshui Yinzhou site, in which specific species of shellfish were collected and stored. [18] Pigs were found in the Foshanhe site, which was only 20 kilometers away from Guye, Gaoming; the two sites were basically built at the same time. [19] These may indicate that with the development and influence of rice farming in inland areas, people lived in Pearl River Delta have gradually established an agricultural system including crop cultivation and livestock breeding in the zone of river network which was suitable for the development of rice agriculture. The transformation changed the culture of this region. Such differences in livelihood patterns between coastal zones and river networks can also be found in Southeast Asia. Nong Nor site in Siam Bay, southern Thailand has a history of 4,400 years; it shows no sign of rice or domestic animals. 14 kilometers away from the Nong Nor, Bang Pakong River site and Khok Phanom Di site are located in the inland. In the two sites, stone axes, pottery ornaments and bone objects found in the earliest cultural deposits are similar to artifacts unearthed from Nong Nor; rice can also be found. Rice husks and fish bones are found in the stomach of a female skeleton 3700 years ago. Carbon isotope analysis shows that aquatic food accounts for only a small part of their daily diet. [20] It is generally believed that rice farming in Southeast Asia originated from the Yangtze River Basin via Lingnan. The Pearl River Delta may have experienced a similar transformation in livelihood at an earlier stage.

In addition to rice, stone molds for bronze ware casting are also found in the second phase of the Gantuoyan site, indicating that in these areas, rice farming and bronze wares may appear simultaneously.

The civilization of Lingnan developed on the basis of rice farming in the Yangtze River Basin. When the culture of the middle and lower reaches of the Yangtze River declined, the civilization of Lingnan also stagnated. Later, Shijiahe and Liangzhu cultures in the middle and lower reaches of the Yangtze River became Post-shijiahe culture and Maqiao culture; the scales of cultural development obviously dwindled compared with the previous period. At that time, cultural exchanges between Yangtze River Valley and Lingnan region were uncommon, especially in Guangdong. These exchanges cannot be compared with the close relationship in Liangzhu culture and Shixia culture. This may be the reason for the stagnation and eventual degradation of early Lingnan civilization after a short period of development.

Apart from the dependence on the civilization of Yangtze River valley, rice agriculture in Lingnan has its own problems. From the perspective of early agricultural development and spread worldwide, rice agriculture encountered difficulties in adapting itself to new habitats when early crops spread from north to south, especially when it faced with local traditions. Phytolith from palm (Caryota sp.) is found on stone tools unearthed at the Taishan Xincun site in Guangdong Province, which is a little older than 5,000 years. [21] This kind of tree can produce three times as many calories as cultivated plants per hour. [22] For small-scales of collectors and hunters in the tropics, the advantages of rice farming are not prominent. The original hunter-gatherers can choose to engage in agriculture, or retreated to a more marginal environment, or engaged in collecting and hunting again after accepting agriculture and then abandoning it for some reasons. [23]

5. Conclusions

In summary, rice farming has significant impacts on the process of civilization in Lingnan area. The early civilization in Lingnan area was formed based on the full development of rice farming in the Yangtze River Basin. Because of the rich natural resources in Lingnan, early people here did not have high demands on rice farming. With the decline of civilization in the Yangtze River Basin, rice agriculture in Lingnan stopped its development; the civilization process stopped abruptly as a result.

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