



Ancient culture decline after the Han Dynasty in the Chaohu Lake basin, East China: A geoarchaeological perspective

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ABSTRACT

The culture decline of Chaohu Lake Basin after the Han Dynasty is a remarkable archaeological phenomenon in the Jianghuai region, Anhui Province, East China. Analysis of the relevant historic records, combined with the new progress in environmental archaeological research and remote sensing data, demonstrates how the ancient culture of Chaohu Lake Basin declined after the Han Dynasty from a geoarchaeological perspective. The results show that the culture decline after the Han Dynasty may be caused by the environmental changes. The deterioration of climate conditions combined with floods, earthquakes and other natural disasters, as well as the climate background of Chinese economic and cultural center transfer, together with the north-south division of political geographic factors that led to war, all caused the ancient “Chao-Fei Channel” to decline gradually and destroyed the agricultural economic foundation of cultural development in the Chaohu Lake Basin. These also brought the decline of the development of settlements and substantial decreases in archaeological sites and burial numbers. Subsequently, the cultural development of the Chaohu Lake Basin declined.

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1. Introduction

The Chaohu Lake Basin is located in Jianghuai Hills of central Anhui, lower reaches of the Yangtze River. It ranges between 30°58'00"–32°58'00"N and 116°24'30"–118°30'00"E with an area of 14,203 km² (CCC Anhui Province, 1999), adjacent to the Yangtze River in the southeast, Dabie Mountains in the west, Jianghuai watershed in the north and the Chuhe River valley in the northeast. The hypsography of the Chaohu Lake Basin gradually approaches Chaohu Lake with step-like (or staircase-like) topographic features (Dou and Jiang, 2003). This lake basin has been an important area for human activities since ancient times. Ancient human beings showed high wisdom in using the natural environment since the Neolithic Age, and created a splendid civilization in this area. At present, drawn from the archaeological point of view, the times of the early development of regional culture are as follows: the earliest known Neolithic culture is the Lingjiatan culture (5.6–5.3 ka BP), followed by the Shang and Zhou Dynasties (3.55–2.72 ka BP), and the Han Dynasty (2.15–1.73 ka BP), which

lasted 4000 years (Wu et al., 2010). Research on the interaction and its mechanism between human activities and the natural environment from a geoarchaeological perspective has great significance for revealing paleogeographic environments and ancient human living conditions.

The Han Dynasty (2.15–1.73 ka BP) was also a flourishing and glorious period of historic culture after the Shang and Zhou dynasties (Zhang et al., 2007). Historical research and archaeological data indicated that many settlement sites and tombs have been found from this period in the Chaohu Lake Basin (Fig. 1), especially the Han Tombs such as the Beishantou and Fangwanggang in Chaohu City, where large amounts of precious relics were unearthed (Qian, 2007). Many typical settlement sites appeared, such as the Tangzui site, which is now located underwater in Chaohu Lake, a flourishing central city on the lakeshore during that time. The age of this ruined city was about 2090 ± 130 BP (Wang et al., 2005), determined by ¹⁴C dating from ashes in the middle of cultural layers. More than 260 pieces of pottery fragments, bronze, jade articles and silverware were unearthed on the beach, as well as a buried living surface ash layer 10–20 cm thick (containing animal bones). Potteries used as building materials have tube-shaped tiles, flat tiles, and tile-ends. There are many kinds of pottery types, such as grey, terracotta, and black, and their outer

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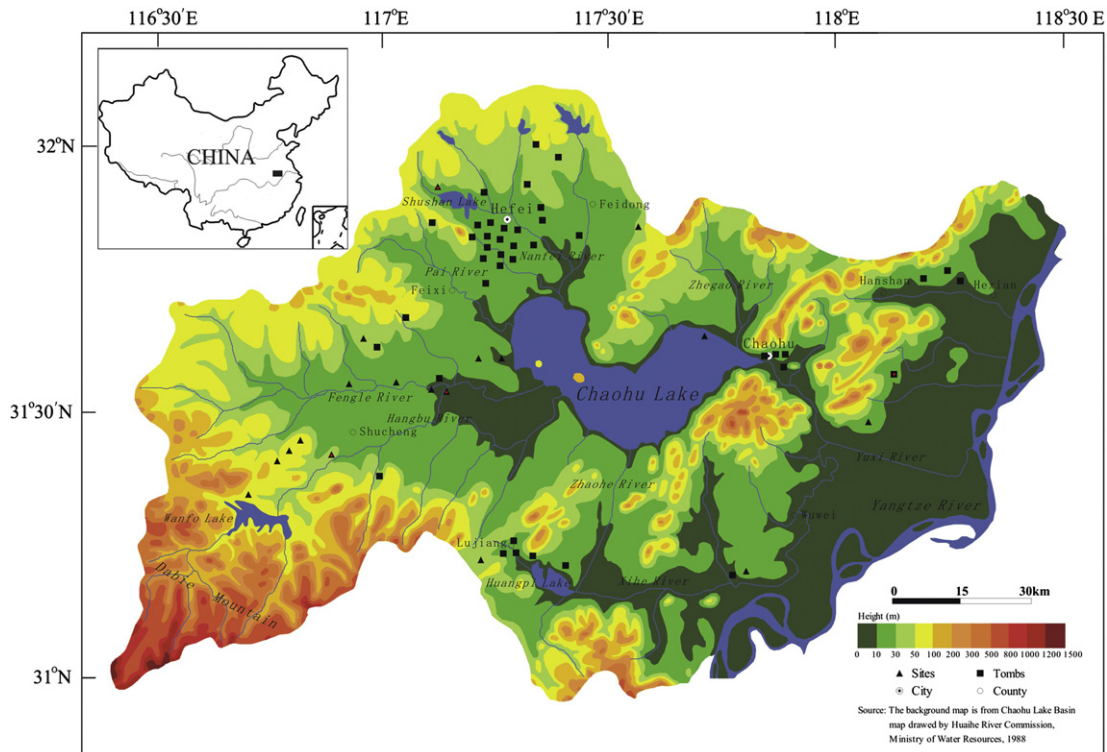


Fig. 1. Archaeological sites and tombs of the Han Dynasty (2.15–1.73 ka BP) in the Chaohu Lake Basin. Sites with inset symbols are also archaeological sites and tombs after the Han Dynasty (1.73–1.36 ka BP) in the Chaohu Lake Basin; only four sites and tombs lasted to the next historical stage.

surfaces are ornamented with cord-marks, mainly including Square pattern, Hongwen pattern, Shenwen pattern, and carved water ripple pattern. Some muddy gray potteries are finely decorated with matrix stripes. All of the unearthed tile-ends are round tile-ends, decorated with a clouding pattern. Pottery for daily necessities includes sandy red, Li tripod, sandy black, and some hard pot fragments of Yinwen cord-marks pottery. Ring-foot vessels are generally large, with large rims or base curvature. Several hundred domestic pieces were also discovered, including urns, basins, vats, pots, jars and cauldrons. Production tools were found, including spindle-whorls made of muddy grey pottery, pottery-making paddles, and fishing implements made of muddy grey pottery. Many kinds of ancient coins were also found in the site, including the Yibi Coin of the Warring States time and the Chu State, the Banliang Coin of the Qin Dynasty, the Wuzhu Coin of the Han Dynasty and the Dabuhuanqian of the Wangmang Stage, amounting to 117 in total. There were also some bronze coins and one jade seal, with some carved ancient Chinese characters. These abundant cultural remains indicate that this is a sophisticated city (Wang et al., 2005).

Numerous studies confirmed that environmental change had a great impact on the rise and fall of early-historic cultures (Haug et al., 2003; Yasuda et al., 2004; Gao et al., 2007; Deo et al., 2010), especially extreme environmental changes (Zhu et al., 2005; Li et al., 2007; Dobrowolski et al., 2010; Zhang et al., 2010). From the historical records and data on the ancient Juchao State (Ning et al., 2006) and unearthed archaeological relics from sites and tombs during and before the Han Dynasty (CCC Anhui Province, 1998; Shuo, 1998; Wei, 1999; Zhang, 2003; Qian, 2006; Gao et al., 2009), the Chaohu Lake Basin at that time did have well-developed status, both politically and economically. However, when the ancient Juchao State disappeared, ancient settlement sites and tombs decreased sharply in this area after the Han Dynasty (1.73–1.36 ka BP). The former flourishing culture was interrupted

(Wang et al., 2005; Qian, 2006), losing continuity of cultural development (Fig. 1). This decline can be compared with the flourishing culture from the Pre-Qin Period to the Han Dynasty in this basin. At the same time, significant changes of the geographical environment occurred in the Chaohu Lake basin (Wang et al., 2008a, 2008b; Wu et al., 2008). This phenomenon shows that the historical records about the “sinking of the Chaozhou State into the lake” are not groundless. Decline of the ancient culture after the Han Dynasty in the Chaohu Lake Basin was a real phenomenon of environment-culture response. The coupling of environmental change and cultural evolution implies that there were some internal relationships between them.

2. Explanations: an environmental archaeology perspective

2.1. Environmental catastrophe after the Han Dynasty in the Chaohu Lake basin

After the Han Dynasty, clustered natural disasters (including floods, earthquakes and other natural disasters) were the most prominent feature of environmental catastrophe events in the Chaohu Lake Basin. The Chaohu Lake Basin is located in the monsoon climate zone of East China. Thus the rainfall is not evenly distributed and varies greatly in this area. Variations of water level range up to 3–4 m in the rainy season from June to August and drought season from September to February (Gao et al., 2005). For example, the average water level is about 8.03 m, but the highest water level was over 12.93 m in 1954. The precipitation is concentrated in summer, so the Chaohu Lake often has higher water levels in the rainy season, due to the effect of the Yangtze River water level. Thus, internal floodwaters were formed in the basin (Yang and Lu, 2001). At the same time, wind speed and direction vary periodically with seasonal changes. High water level and strong wind may have generated significant waves, and this

would have submerged villages and farmland along the lakeshore (Yang et al., 1999). Flood disasters could deeply influence the human living environment and its cultural development.

Borehole data (He, 2007) indicate that the tectonic subsidence center of the Chaohu Lake is in the western region. The deepest part of Chaohu Lake was in the west side during the dry and cold period of Holocene, and low-lying land was exposed on the east shore of Chaohu Lake, facilitating human activities. Deposits identified through ACN drilling (Jia et al., 2006) indicated a contraction of the lake, with fluvial processes and the development of contemporaneous fluvial facies alluvium and clay between 2239 and 2126 B.P. These sediments formed the substrate for the sites of the Han Dynasty around Chaohu Lake. After the Han Dynasty, Chaohu Lake expanded once more with several peaks of sand content (grain size $>64\ \mu\text{m}$) noted in the CH-1 drilling samples (Wang et al., 2008a, 2008b), indicating strong hydrodynamic conditions and frequent devastating floods after the Han Dynasty (Fig. 2). These are also consistent with the historical records. *Annals of Chao County · Auspicious and Strange Omen* of the Qing Dynasty recorded that Chao City sank into the lake in 239 A.D. (The Chihu 2nd year of the first Emperor of the Wu Kingdom). This fact seems to coincide in time (about 1800 B.P.) with the termination of the ancient Juchao State (Tangzui site). *Annals of Chao County-Art and Culture* also recorded some information: “The formerly known Chaohu Lake lies to the west of the Mushan Mountain; then the formerly known Chaozhou State lies to the east of the Mushan Mountain.” “Before the sinking of the Chaozhou State in the Chihu 2nd year, the Chaohu Lake already existed”. “The sinking of the Chaozhou State is not only one city sinking; it ranges from Qitouzui to the southeast of Mushan Mountain and Chaohe River, 150 Li (1 Li = 500 m) long and 50–60 Li wide; all of this land sank into the lake.” These historical records indicated that devastating floods affected extensive areas at that time. Meanwhile, historical documents also recorded that there were three heavy floods in this section of the Yangtze River after the Han Dynasty (He et al., 2004): 215 A.D. (July of Taiyuan 1st year), 351 A.D. (July of Yonghe 7th year), and 404 A.D. (February, Yuanxing 3rd year of the Jin Dynasty). Frequent floods produced an obviously destructive impact on the agricultural production, transportation and many kinds of cultural facilities in this area.

Earthquakes are another significant disaster which accompanied the flood events. The Chaohu Lake Basin is located in the southern Tancheng-Lujiang fault zone. From interpretation of remote sensing images (Fig. 3) and current geological data (Wang, 2007), there are many multidirectional faults as well as their branches around the

lake basin. Thus, the Chaohu Lake Basin and its surrounding region is an earthquake-prone area. After the Han Dynasty, the Chaohu Lake Basin and its surrounding region entered a period marked by frequent seismic activity. The Chinese historical records (Table 1) noted a dozen recorded earthquakes from 220 A.D. to 320 A.D. (Seismological Bureau, the People's Government of the Anhui Province, 1983): an earthquake occurred at least once every ten years. As floods and other natural disasters were serious, geological conditions of this area made it possible for landslides (or slumps) after the earthquakes. These earthquakes and secondary natural disasters (such as landslides, bank collapse, etc.) not only destroyed the original highly developed cultural facilities, resulting in damage to buildings and houses, but also exercised great influences on people in their psychological development, and had a very negative impact on economic and cultural development.

2.2. Political geography environment after the Han Dynasty in the Chaohu Lake basin

From the end of the Eastern Han Dynasty, Chinese history entered the period of the Wei-Jin and the Northern/Southern Dynasties. This was a relatively cold period nearly 300 years long. The period of the Three Kingdoms (1.73–1.67 ka BP) was the first time that freezing of the Huai River was recorded (Chu, 1973), especially in the ten years 280–289 A.D., when frost occurred in the fourth month (Chinese lunar calendar year, the month of May approximately). In this cold-dry climate background, nomads of Mongolia moved south to the Chinese Central Plains in force. Meanwhile, North China fell into the scourge of war; and there was a significant eastward-southward migration trend of the Chinese political, economic, and cultural center. The Chaohu Lake Basin, which lies between the Yangtze River and the Huai River, is situated on the borderland between northern and southern political power, flanked on the east by the ocean, on the west by the Hanshui River, on the south by the Yangtze River, and on the north by the Huai River. Thus, this area is very important strategically. Because of this, the Chaohu Lake Basin became the focal point of war between the northern and southern political powers. War took place frequently, especially during the period of the Three Kingdoms. The Wu Kingdom and the Wei Kingdom sent out troops to struggle for the Chaohu area, with the largest forces of about 100,000. The *Annals of Chao County · Yangge Geography* also recorded these historical events: “In the Jian'an 18th year, the last Prime Minister of Han Dynasty, Cao Cao marched into Ruxukou with 400,000 foot soldiers and cavalry men; the first Emperor of the Wu Kingdom, Sun Quan, headed 100,000 troops to withstand Cao Cao's attack”. “In the Jianxing year of the Shuhan Kingdom, the first Emperor of the Wu Kingdom, Sun Quan, marched into Hefei New City from the Chaohu Lake. The Emperor of the Wei Kingdom, Cao Rui, headed troops to contain this attack”. With the background of long-term of war, regional agricultural economic development was destroyed, hampering the development of commerce and handcraft industry. All of these factors destroyed the economic foundation of regional cultural development.

2.3. Ancient “Chao-Fei Channel” and culture rise/decline in the Chaohu Lake basin

In the northern area of the Yangtze River of Anhui Province between the Huai River and the Yangtze River, the ranges of the Dabie Mountains trend to the east, and transform gradually into low-flat hills in the Jianghuai Watershed. At the center of this hilly area is the land between the Jiangjunling of the northern border of Feixi County and the northwest vicinity of Hefei City, with the Shishui and the Feishui rivers. The Shishui River is the Nanfei

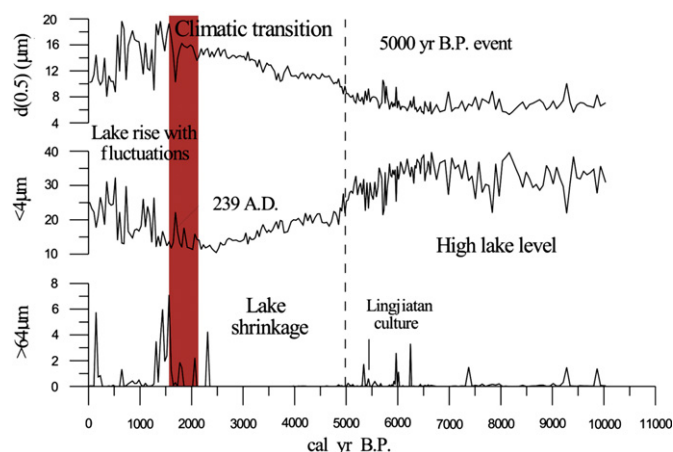


Fig. 2. Lake level changes reflected by grain size record of CH-1 core in the Chaohu Lake. Several peaks of fine sand (grain size $>64\ \mu\text{m}$) in the CH-1 core indicate strong hydrodynamic conditions and frequent devastating floods.

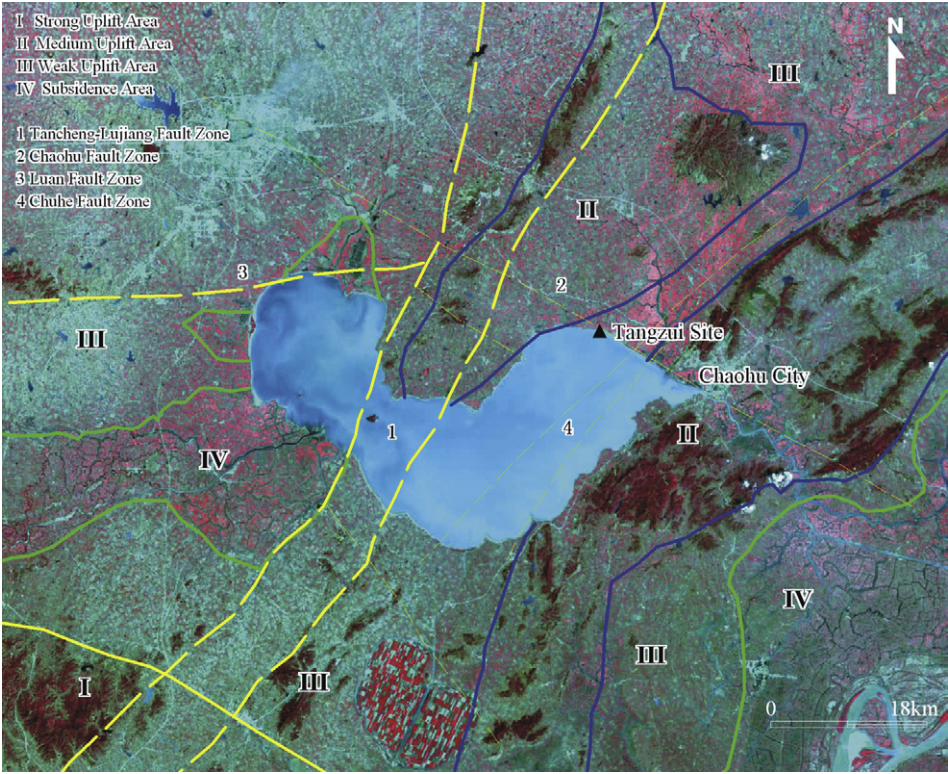


Fig. 3. Distribution maps of tectonic areas and faults around the Chaohu Lake based on Landsat TM image. The Tangzui Site was just located in the Chaohu Fault Zone.

River of today, which flows southeast to Chaohu Lake. The Feishui River is the Dongfei River of today, which flows north to the Huai River. Along these two river channels with land and water coordinated transportation, people could move between the southern

area of the Huai River and the northern area of the Yangtze River in ancient times, especially in the period of the Three Kingdoms. The first Emperor of the Wei Kingdom (the Weiwu Emperor), Cao Cao, dug and equipped the ancient Jianghuai Canal- (“Caocao River”),

Table 1

Ancient Earthquakes based on historic records during the period of the Three Kingdoms and Jin Dynasty in the Chaohu Lake Basin, East China.

Seismic time	Contents	Documents
225 A.D. (The Huangwu 4th year of the first Emperor of the Wu Kingdom)	Successive earthquakes occurred in the Jiangdong Area of this year.	History of the Three Kingdoms · The Book of the Wu Kingdom · Biography of Wu Emperor
June 24, 237 A.D. (The May 14, Jiahe 6th year of the first Emperor of the Wu Kingdom)	BU Zhi said to the Emperor that earthquake occurred in the whole Jiangdong Area on May 14, Jiahe 6th year.	History of the Three Kingdoms · The Book of the Wu Kingdom · Biography of Bu Zhi
February 21, 239 A.D. (The January 1, Chiwu 2nd year of the first Emperor of the Wu Kingdom)	BU Zhi said to the Emperor that earthquake occurred in the whole Jiangdong Area on January 1, Chiwu 2nd year.	History of the Three Kingdoms · The Book of the Wu Kingdom · Biography of Bu Zhi
March 19, 239 A.D. (The January 27, Chiwu 2nd year of the first Emperor of the Wu Kingdom)	BU Zhi said to the Emperor that earthquake occurred in the whole Jiangdong Area on January 27, Chiwu 2nd year.	History of the Three Kingdoms · The Book of the Wu Kingdom · Biography of Bu Zhi
Between March to April, 248 A.D. (The February, Chiwu 11th year of the first Emperor of the Wu Kingdom)	On February of Spring, earthquake still occurred in the Jiangdong Area.	History of the Three Kingdoms · The Book of the Wu Kingdom · Biography of Wu Emperor
March 15, 281 A.D. (The February, Taikang 2nd year of the Jinwu Emperor)	Earthquakes occurred in the Huainan Area and Danyang Area in February, Taikang 2nd year of the Jinwu Emperor.	The Book of the J in Dynasty · The Book of Five Elements
Between August to September, 287 A.D. (The August, Taikang 8th year of the Jinwu Emperor)	Earthquake occurred in the Danyang Area in August.	The Book of the J in Dynasty · The Book of Five Elements
February 19, 288 A.D. (The January, Taikang 9th year of the Jinwu Emperor)	Earthquakes occurred in the Guiji Area, Danyang Area and Wuxing Area in January, Taikang 9th year.	The Book of the J in Dynasty · The Book of Five Elements
January 6, 290 A.D. (The December, Taikang 10th year of the Jinwu Emperor)	Earthquake occurred in the Danyang Area in December, Taikang 10th year	The Book of the J in Dynasty · The Book of Five Elements
Between July to August, 294 A.D. (The June, Yuankang 4th year of the Jinhui Emperor)	The great earthquake occurred in the Shouchun Area in June; and more than twenty family people died.	The Book of the J in Dynasty · Biographic Sketches of Emperors
Between December, 294 A.D. to January, 295 A.D. (The November, Yuankang 4th year of the Jinhui Emperor)	Earthquakes occurred in the Xinyang Area, Xiangcheng Area, Ruyin Area, Liang State, and Nanyang Area in November.	The Book of the J in Dynasty · The Book of Five Elements
July 19, 320 A.D. (The May, Daxing 3rd year of the Jinyuan Emperor)	Earthquakes occurred in the Danyang Area, Wujun Area and Jinling Area in May, Daxing 3rd year.	The Book of the J in Dynasty · The Book of Five Elements

which connected the Yangtze and the Huai valleys (Yang, 1958; Liu, 1960). This is the ancient “Chao-Fei Channel” (Fig. 4). It is one of the important north-south channels of ancient China. The ancient Ruxushui River, which is south of Chaohu Lake, was connected with the Yangtze River at that time. Southward along the ancient “Chao-Fei Channel”, there were two river ferries: one located at Caishiji in the suburbs of Ma’anshan City, and the other connecting Wuhu City with its opposite bank at Yuxikou. The area from the eastern hills of southern Anhui Province to the Taihu Lake area of Jiangsu Province was known as the “Jiangdong Area” in ancient times. The Yangtze River ran south to north in the area along the ancient “Chao-Fei Channel”. Ferries crossed the Yangtze River eastward, giving the name “Jiangdong Area” (east regions of the Yangtze River), rather than the modern term, “Jiangnan Area”.

Historically, the areas of Chaohu, Wuhu, Anqing and northern Jiangxi have long been known as “Wu Tou Chu Wei”; because these places were on the borders between the two kingdoms of Wu and Chu of the Spring and Autumn Period in ancient China. In ancient times, waves whipped up by the wind rolled turbulently in the Yangtze River, and thus ancient people could not use the Yangtze River for shipping. When the Wu Kingdom and the Chu Kingdom went to war with each other, the troops of the Wu Kingdom often chose here (the areas of Chaohu, Wuhu, Anqing and northern Jiangxi) to cross the river and enter into the Huai River Valley, then marching westward into the Jingchu region (Lu et al., 2004). According to the transport line data from “Prince O’s Tallies” inscriptions (Yang, 2004) excavated from Shouxi County of Anhui in the 1960s (its Chinese name is *E Jun Qi Jie*, which was a passing voucher for transporting goods and granted by the King of the Chu Kingdom.), people of the Chu Kingdom went up the Hanshui River as far as the Fangcheng Pass in the Funiu Mountains, then passed along the route in southeastern Henan with the aid of the Huai

River waterway, reached Fengtai County and the southeastern portion of Shouxi County in Anhui, and finally turned south to cross the Yangtze River with the aid of the Feishui River and the Chaohu Lake water ways. This archaeological evidence shows that land and water ways between the Yangtze River and the Huai River were linked by the ancient “Chao-Fei Channel”. For this reason, the Chaohu Lake Basin became an important passageway and hub for economic and cultural exchanges between the North China and the South China, and this location provided a good economic geographical position and material foundation for the prosperous culture of the Chaohu Lake Basin. Thus, this area underwent three different times (the middle and late Neolithic Age, the Shang and Zhou Dynasties, and the Han Dynasty) of cultural development. The Lingjiatan Neolithic culture of Hanshan was a typical site, famous for its jade production technology (Anhui Provincial Institute of Cultural Relics and Archaeology, 2006). For the supremacy of this economic and cultural exchange channel between the North China and the South China, the Wu Kingdom and the Chu Kingdom engaged in wars between the Yangtze River and the Huai River for over one hundred years in the Spring and Autumn Period (Lu, 2007).

However, after the Han Dynasty, the ancient “Chao-Fei Channel” began to decline quickly. The waterway channel between the Yangtze River and the Huai River changed eastward gradually to the Yangzhou and Zhenjiang area. The former “Chao-Fei Channel” along the Shouxi-Hefei-Chaohu-Wuwei-Wuhu route was demoted to common and unimportant traffic. Because the main channel of the Yangtze River in the Yangzhou and Zhenjiang area is aligned east-west, the south Jiangsu-Taihu area was no longer called the “Jiangdong Area”, but was renamed the “Jiangnan Area” (south regions of the Yangtze River). The word “Jiangdong” was commonly used in historical records from the Pre-Qin Period to the Qin and Han Dynasties; “Jiangnan” is mainly seen in historical records after the Tang and Song Dynasties (Li, 2004). Substitution of the Chinese character “Nan” for “Dong” indicated the transformation of the main north-south channel between the Yangtze River and the Huai River in different periods. This evidence also exactly corresponded with the decline of the ancient “Chao-Fei Channel”.

3. Discussion

Combining the foregoing discussions about environmental catastrophes and political geography, with the deterioration of climate conditions after end of the Han Dynasty, the frequent natural disasters, and the north-south division of political geographic factors that led to war, as well as the climate background of Chinese economic and cultural center transfer, made land and water transport along the Jianghuai Canal Channel more convenient than using the ancient “Chao-Fei Channel”, especially after the Grand Canal building of the Sui and Tang Dynasties. From then on, water transportation between the Yangtze River and the Huai River entered a new historical period, with the Grand Canal as the main waterway channel. The Grand Canal became the most important channel and main artery of communications between north and south in East China. This channel not only boomed urban economic development along the Grand Canal, but also maintained the normal operating lifeline of the Chinese political center (Lan, 2005). Accordingly, the ancient “Chao-Fei Channel” gradually declined. This decline made it lose the status of traffic and economic centers, and the economy of this area also was severely damaged. Once the economic foundation for the steady development of settlement and culture was declining, large settlements along the channel were difficult to maintain. Because economic status increasingly dropped, central settlements disappeared with

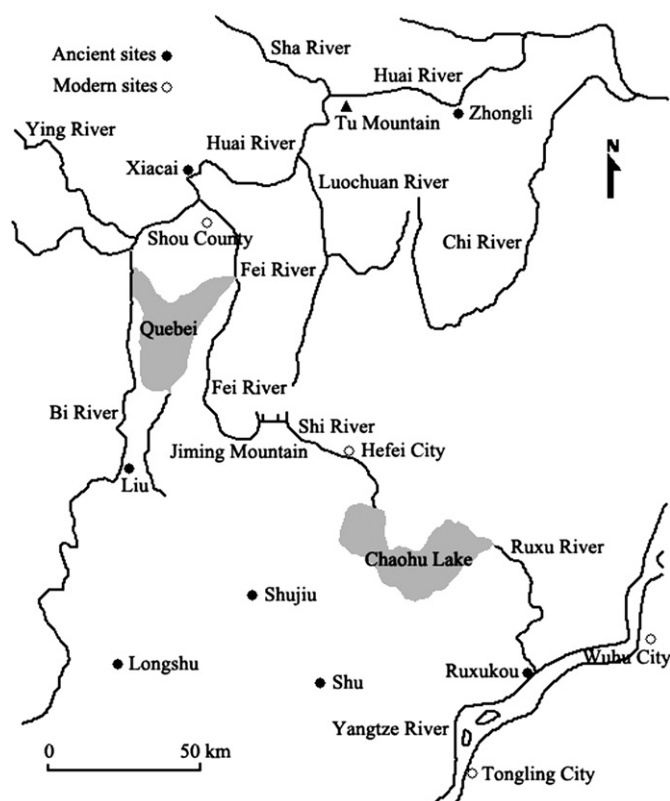


Fig. 4. Map showing the ancient “Chao-Fei Channel” between the Yangtze River and the Huai River in East China.

noticeable decreases in their settlement scale and quantities. After the Han Dynasty, the Chaohu Lake Basin also remained in a prolonged state of tense armed confrontation between north and south political powers with frequent wars. Since then, development of ancient culture and settlement declined. The decline of the ancient “Chao-Fei Channel”, caused by the changes of geographical environment, could well be the direct cause of the decline of ancient culture after the Han Dynasty in the Chaohu Lake Basin. However, the root cause is the environmental changes (including environmental catastrophes and political geography environment changes). Thus, although there are many reasons for the culture decline, such as the influence of cultural interactions, socio-economic changes and other factors, changes of geographical environment after the Han Dynasty still had a significant influence on the rise and decline of ancient culture in the Chaohu Lake Basin and its surrounding areas. This was profoundly manifested in the following ways: the rise and decline of the channel for economic and cultural exchanges was influenced and limited by the changes of geographical environment, and further affected the development, rise and decline of regional culture.

The above analysis links environmental changes with relative archaeological phenomena based on environmental archaeology. Interdisciplinary cooperation could fully substantiate the hypothesis, especially Quaternary research on plants, animals, soil and climate factors, analysis of all kinds of remains from typical archaeological sites and natural deposits. At present, besides the preliminary environmental archaeological research for some individual sites of the Han Dynasty (such as the Tangzui site), other works remains to be launched. In addition, many ancient sites of the Han Dynasty are mostly distributed underwater, highlighting the historic-geographic meaning of “sinking of the Chaozhou State into the lake”. More studies and sufficient attention are still required on these problems in future.

4. Conclusions

The decline of ancient culture in the Chaohu Lake Basin after the Han Dynasty is a remarkable archaeological phenomenon in the Jianghuai region, Anhui Province, East China. Analysis of the relevant historic records, combined with the new progress in environmental archaeological research, as well as interpretation of remote sensing images, indicates the reasons for the culture decline in the Chaohu Lake Basin after the Han Dynasty.

The study results show that, with the deterioration of climate conditions after the Han Dynasty in the Chaohu Lake Basin, combined with floods, earthquakes and some other natural disasters, as well as the climate background of Chinese economic and cultural center transfer, together with the north-south division of political geographic factors that led to war, all made the ancient “Chao-Fei Channel” decline gradually and destroyed the agricultural economic foundation of cultural development in the Chaohu Lake Basin. These also brought the decline of the development of settlements and substantial decrease in archaeological sites and burial numbers. Since then, the culture development of the Chaohu Lake Basin declined. The changes of geographical environment could well be the root cause of the decline of the ancient culture after the Han Dynasty in the Chaohu Lake Basin.

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