EXPLORING THE GEOMETRIC HORIZON: INTERREGIONAL INTERACTION AND LOCAL EVOLUTION

by

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Abstract

This study presents a detailed investigation of the late prehistoric Geometric Pottery Horizon in the Provinces of Guangdong and Guangxi in southeastern China. The currently available published works in both English and Chinese are brought together in this study to provide the basic sources of data for the study of the development of complex societies in this region between approximately 3,000 and 200 B.C..

A major debate concerning the "Geometric Pottery Cultures" is the degree of impact the northern Chinese states had on the development of social complexity among such 'peripheral' groups as these. I discuss the general utility of frameworks which restrict the study of social developmental processes to internal factors alone, versus those which allow for the simultaneous consideration of both internal and external factors and conclude that the latter are more appropriate.

Several tasks are undertaken in this study: first is the compilation and evaluation of the presently available evidence regarding the Geometric groups of Lingnan (Chapters 2-4); secondly the construction of a basic conceptual framework for analysing the empirical patterns of development in Lingnan Geometric society (Chapter 5), and finally a brief exploration of the part played by the northern states in the intensification of hierarchical organization of the Lingnan Geometric groups.

Mortuary data from Geometric sites are used as the basis for studying the development of sociopolitical complexity (Chapter 5). Degree of ranking in each Period of the Geometric

is assessed by the relative amounts of grave goods, amount of energy expenditure on the grave, and the presence/absence of special elite "badges" among contemporaneous burials. Evidence for political aspects of ranking and the concurrent development of hierarchical organization in manufacturing and exchange systems are also examined.

I conclude from Chapter 5 that Lingnan Geometric society developed from egalitarian to strongly ranked during the second half of the Geometric time period. Moreover, it appears that the hierarchies which developed at this time were strongly involved in external exchange with more northerly states.

The effect of this latter interchange on the internal network of the Lingnan geometric groups is examined in Chapter 6 by an analysis of the spatial patterning of nodes in the internal network. I conclude that the northern exchanges did exert an apparent "pull" on centres, with the result that a disproportionate number are located along routes leading to the major trading partner.

The intent of these analyses are twofold, first to explore how much usable data are available at present and some of the questions that might profitably be approached with them; secondly to outline and demonstrate the utility of a framework which comprehends both internal and external stimuli for evolutionary change. I maintain that these are the most important priorities at present in view of the existing lack of background information in the English language literature on this period of South China's prehistory.

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Acknowledgements

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I am particularly grateful to my parents not only for their work, but also for their constant support and encouragement during the past years. They have never tried to persuade me to undertake something more "practical".

Although the help of all the above has contributed to the best aspects of this work, I am of course responsible for any errors or omissions.

I. INTRODUCTION

Referring to the state of Southeast Asian prehistoric research some years ago Jean Kennedy noted that "One cannot produce nomothetic or explanatory hypotheses in a near vacuum" (1977:24). It is neccesary to have some basic knowledge of the cultural patterns in the prehistory of an area before it is possible to move on to the next level of explanation.

That need is the basic starting point of this study. A "near vacuum" is what has obtained in the Western literature of the late prehistoric period of South China, despite the impressive amounts of information published in recent years by the Chinese. The few discussions of this period that have appeared in the Western literature have attempted to explain patterns of development from a few select sites, without adequate synthesis of the total range of available data. Chinese researchers can of course draw on far more sources than are available to foreign researchers. Many of the historical patterns they have documented are relevant to this study, however the frameworks they have used are not directly conducive to the types of problems addressed by current Western studies of the operation and development of cultural systems.

The subject of this study is the Geometric Pottery Horizon in the southern Chinese provinces of Guangdong and Guangxi. My purpose is to study the social developmental processes which manifest themselves in the material remains which constitute

that Horizon. In other words I shall approach the problem of the operation and development of social systems during the South China Geometric Period through methods and perspectives commonly used in Western archaeology, but which as yet are not employed by the Chinese. The two primary tasks I shall undertake in this study are first, to assemble the information currently available on this subject from published sources in both English and Chinese; secondly, to develop an appropriate conceptual framework for studying developmental processes during this period.

The Geometric Pottery Horizon is a phenomenon of the late prehistoric period (circa 2000-220 BC) in the southeastern part of China. The "Geometric Cultures" are identifiable by the predominance of ceramics with impressed geometric surface patterning. The earliest phases of this Horizon appear to be centred in Jiangxi Province , although as I shall outline below, an almost equal antiquity can be documented for at least the northern Guangdong area (Wen Wu Correspondent 1979). As research into the Geometric Horizon progressed during the 1960's and 1970's it became increasingly clear that this Horizon cannot be regarded as a monolithic entity; it in fact comprises a number of regionally distinct cultures and developmental sequences (Wen Wu Correspondent 1979). One region whose separate developmental sequence has long been recognized is Lingnan -- the region comprising most of modern Guangdong and Guangxi Provinces (Figures 1.1 & 1.2).

The long span of the Geometric Horizon in Lingnan - over

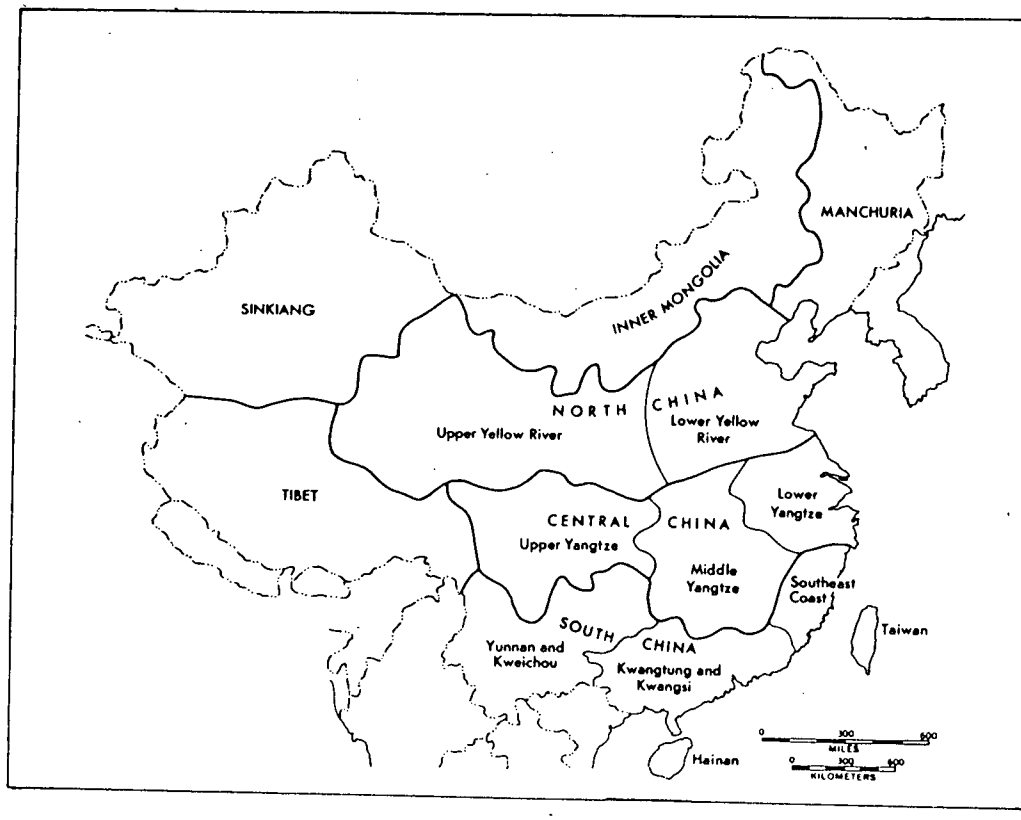

FIGURE 1.1: Regions of China (Hsieh 1973:112)

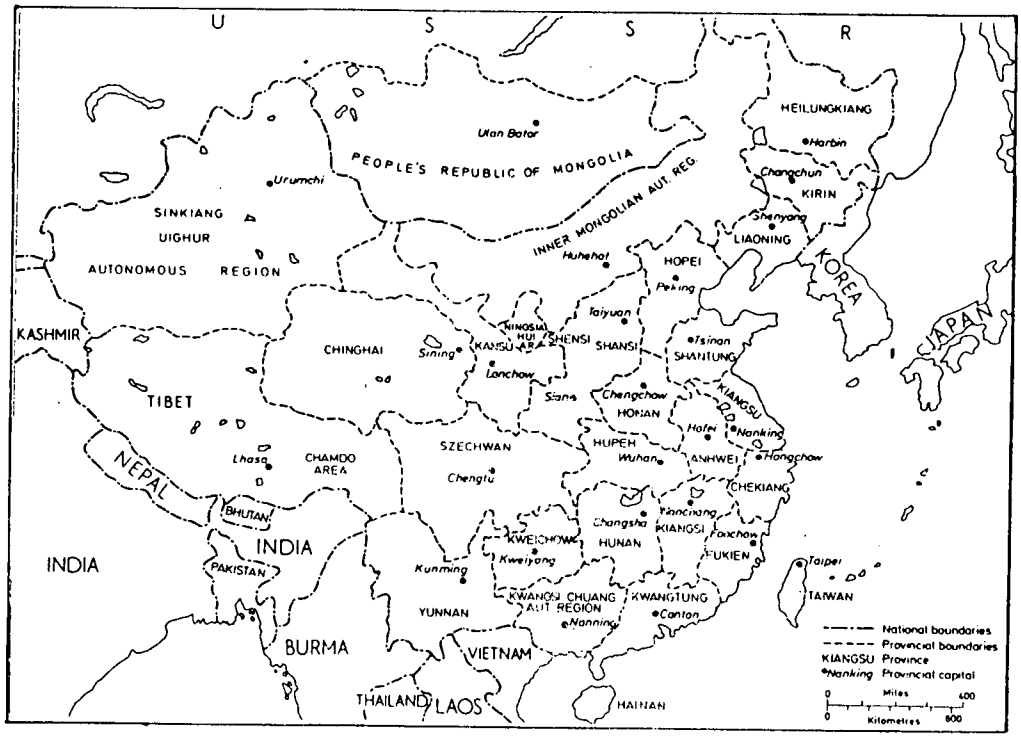

FIGURE 1.2: Political divisions of China (Tregear 1980:4)

Key to Figures 1.1 and 1.2:

Correspondence between romanization system used in Figures and in text:

Text	Figures
Guangdong	Kwangtung
Guangxi	Kwangsi
Jiangxi	Kiangsi
Fujian	Fukien
Guizhou	Kweichou
Guangzhou	Canton

2500 years - constitutes a period of marked social evolution which the Chinese have identified as the transition from the later patriarchal stage of Primitive Society to Slave Society (ibid. 57). In terms of technological development the transition is from the Late Neolithic through the Bronze and early Iron Ages.

To date, Chinese research into the Geometric Cultures has been focussed on gathering data to define local cultural sequences and document the exchange of influences between and within regions. Such tasks are regarded as providing background information for the ultimate purpose which is

> "to recreate the true features of the ancient history of the Jiangnan region and make clear the ethnic identity of its aboriginal inhabitants; thereby to reveal regular patterns in the development of ancient society in the South and the mutually-blended historical processes between these peoples and the ancient Chinese tribes." (ibid.,59).

In short, the aims of Chinese archaeological research into the Geometric Cultures are primarily historical and do not include the creation of explanatory frameworks, since these are already provided by the Marxist evolutionary scheme.

The Geometric Cultures have received very little discussion in the non-Chinese archaeological literature. Only two writers, K.C. Chang and W. Meacham have dealt with them directly, and their work, like that of the Chinese, has been concerned with culture-historical problems. The major point of debate on the Geometric cultures, as for the Neolithic cultures of South China in general, revolves around the presence and impact of

influences from northern Chinese groups on those in the South.

Chang took the position that "the Geometric horizon in eastern South China was apparently a development of the local Lung-shan substratum, in part under the continuous stimulation of the Shang and Zhou cultural impacts." (1977:414). Accordingly, "for the entire area, the Geometric horizon started with the first influence of the Shang civilization from the north, probably during the middle of the second millennium B.C." (ibid). It should be noted that, as the first quote indicates, Chang did not ascribe total credit for social development in the South to the stimulus of the northern civilizations as he has frequently been accused.

Chang is not specific about the mechanisms through which the northern civilizations impacted the South, or about how their influence may have induced processes of social development within the local Geometric groups. This is particularly the case with respect to the Geometric groups south of the lower Yangtze region (1977:422). He does present the hypothesis that the development of States in the lower Yangtze may have been a result of the establishment of isolated colonies of immigrants from the northern States, but this is not a mechanism suggested for other regions (1977:419).

Chang's interpretation of the origin of the Geometric Horizon has since been invalidated by radiocarbon data which has confirmed the existence of Geometric pottery-using groups in Jiangxi and Guangdong approximately a thousand years before the Shang. This does not however neccesarily negate the importance

of input from the northern States into southern regions during the Geometric Period. As I shall outline below, there is much material evidence from Lingnan Bronze and early Iron Age graves attesting to the fact of interaction and exchange between the Lingnan Geometric groups and the State located to their north. Whether or not these exchanges played a role in the development of complex societies in the South is an important problem for investigation.

Unfortunately, critics of Chang have tended to go to an opposite extreme and deny that the northern States had any significant impact on the Geometric Cultures. Meacham, for example, postulates that the southeastern coastal areas "may not have been significantly penetrated by outside influences until the Ch'in-Han conquest." (1978:289). However, to maintain this position he is obliged to dismiss as insignificant the widespread occurrence of northern-style, and in some cases, northern-manufactured bronze artifacts in pre-Qin (i.e. pre-214 B.C.) Geometric graves (1977).

Meacham's "Local Evolution" model is the most explicit framework that has been proposed as an alternative to the "Nuclear Area" model. Meacham's basic thesis is that "South China Neolithic prehistory can be most profitably investigated with very little reference to the material cultures of other areas."[1] Unfortunately, although he uses the term "evolution",

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[1] Although this statement refers specifically to the Neolithic period, Meacham actually includes the Bronze Age of southeast China as well.

Meacham does not actually present either a model or a general framework for studying social evolution. The "model" is actually a programmatic statement of the importance of studying local cultural traditions and local cultural ecology in preference to studying interregional relationships. His most basic proposition is that material and social innovations can and do occur in more than one geographic location -- in other words, that parallel evolution is a common feature of human social development. In his plea for the neccesity of more detailed studies of local culture history and ecological factors he is echoing statements by archaeologists such as Bayard (1975) and Triestman (1968). I can find no disagreement with his view of the importance of detailed local investigations, since it is these detailed studies which provide the neccesary data base for the study of developmental processes. But, and this is a crucial point, detailing patterns in material remains is not the same thing as modelling the processes of cultural change. Observed patterning of material remains is only the visible consequence of the operation of a cultural system (Binford 1981:197-198). In order to interpret the observed patterns in terms of the operation of the system which created them it is neccesary to move up one level of abstraction to the realm of 'Middle-range Theory' (Raab and Goodyear 1984). This, because it is an abstraction from the material "reality" requires the development of explicit models which will form a bridge between material patterns and the processes they are inferred to reflect.

Although Meacham does not deal directly with the issue of processual change the basic outlines of what such a Local Evolution Model would look like can be inferred from the statement that his approach would focus on

> "the forces and potentialities within the Neolithic cultures themselves as the most probable stimuli of culture change. It is proposed that when development can be reasonably linked with such agencies.....a generally more credible interpretation arises than would be one linked with external cultural stimuli (movement of people or ideas)." (1977:419).

A Local Evolution Model then would stand in opposition to models which include among their significant features the linkage of internal evolutionary change with external stimuli.

We thus have two basic models outlined, although not explicitly developed by Chang and Meacham: one which admits of the potential role of external cultural stimuli in promoting local evolutionary developments, and one which does not.

Southern Chinese archaeologists in the past 20 years have in fact embarked on a phase of more intensive study of local culture histories (Wen Wu Correspondent 1979:53), and an impressive amount of data has been accumulating. I think that the accumulated information is now sufficient to begin the preliminary contruction of explicit frameworks for the study of developmental processes during the Geometric Horizon. It is especially important to begin to formulate such frameworks at this point so that we can evaluate what specific kinds of data need to be generated by future archaeological work in order for these kinds of problems to be properly studied. As I shall

discuss below, the methods currently used by Western archaeologists to study the questions I shall deal with in this study require kinds of information not currently available in the published literature (although undoubtedly much more is already available in unpublished sources within China).

In the subsequent chapters I shall be following through on the major concerns I have raised here. In Chapters II to IV I shall outline the information on the Geometric Horizon in Lingnan available through currently-published sources, and discuss the basic outlines of local culture history and ecology. Chapters V and VI will contain the development of an explicit framework which I propose is most appropriate to the study of developmental processes. The first stage in this framework is a model of the structure and organization of cultural systems, on the basis of which I shall analyze the developmental patterns in four main social components during the Geometric Period, The second stage is an investigation of the effect of external contact and exchange on the local hierarchies of the Lingnan Geometric network during the Bronze and early Iron ages. I shall conclude by returning to evaluate the relative utility of various models in comprehending the development of the Geometric groups of Lingnan.

II. DISCUSSION OF PUBLISHED INFORMATION

The data base of this study comprises information on specific sites and general summaries of Lingnan archaeology by Chinese archaeologists. The source materials will be discussed and presented in this chapter, and used subsequently to reconstruct patterns of development.

A. METHODS OF DATA COLLECTION

The first step in assembling the data for this study was a search of the Chinese archaeological literature of the past 35 years. The journals covered include:

Kaogu (including Kaogu Tongxun) all up to March 1984

Kaogu Xuebao 1953 to No. 2, 1984

Kaoguxue Jikan , all

Wenwu (including Wenwu Cankao Ziliao) 1955 to April 1984

Wenwu Jikan , all

Wenwu Ziliao Congkan , all.

These journals were searched for sources relating to the Geometric Horizon in general, summary treatments of Guangdong and Guangxi Neolithic Bronze and Iron Age cultures, specific reports on prehistoric sites and finds in Lingnan, and references to books and monographs on the same topics. The relevant sources have been compiled and presented in Table 2.1.

The bibliography in Table 2.1 does not include English language sources on the archaeology of Hong Kong. Fortunately,

1. Anonymous
1954 An ancient site found at Lujiaqiao, Quanzhou county, Guangxi. Wenwu 1954:6:120-121

2. Archaeological Team of Guangxi & others
1982 Excavation of a Neolithic site at Duliao, Xinzhou county, Guangxi Kaogu 1982:1:1-8 .

3. Archaeological Team of Guangxi
1982 Excavation of a Neolithic site at Dalongtan, Long'an county, Guangxi. Kaogu 1982:1:9-17 .

4. 14C Lab, Beijing University & 14C Lab, IA CASS
1982 Reliability of radiocarbon dates of samples collected from limestone regions, and the age of the Zengpiyan and Xianrendong prehistoric sites. Kaogu Xuebao 1982:2:243-50 .

5. Beijing Daxue
1979 Shang Zhou Kaogu. Beijing: WenWu Press

6. Chao Huiyuan
1965 Discussion of various Neolithic sites in Guangdong and Jiangxi provinces. Kaogu 1965:10:517-524

7. Chen Gongzhe
1957 Archaeological surveys and excavations at Hong Kong. Kaogu Xuebao 1957:4:1-16

8. CPAM Guangdong
1956 Report on investigations at Neolithic sites in Chaoyang County. Kaogu 1956:4:4-11

9. 1961a The shellmound sites at Chao'an Guangdong. Kaogu 1961:11:577-584

10. 1961b The remains of primitive cultures in southern Guangdong. Kaogu 1961:11:595-598

11. 1963 Zhou dynasty bronzes unearthed at Qingyuan, Guangdong. Kaogu 1963:2:57-61

12. 1964 An Eastern Zhou tomb in Qingyuan county, Guangdong. Kaogu 1964:3:138-142

13. 1965 Investigating the sites of ancient culture in the areas on both sides of the West River. Kaogu 1965:9:443-446

14. CPAM Guangdong & others
1964a The Neolithic sites at Nianyuzhuan and Matiping, Qujiang county, and at Zoumagang, Shaoguan Shi, Guangdong. Kaogu 1964:7:323-332

15. 1964b Warring States sites in Zengcheng and Shixing counties, Guangdong. Kaogu 1964:3:143-151;160

16. CPAM Guangxi
1978 Cultural Relics Unearthed in Guangxi. Beijing: Wen Wu Press

17. Fan Ming
1956 Eight Neolithic sites discovered by CPAM Guangdong. Wenwu 1956:4:85

18. Gao Guangren & Shao Wangping
1981 A preliminary study of pottery 'gui'-tripods of the prehistoric period. Kaogu Xuebao 1981:4:427-459

19. Guangdong Group to Investigate the Social History of Minority Peoples
1957 Neolithic stone tools discovered at Maodaoxiang, Li and Miao Autonomous Districts, Hainan. Kaogu 1957:4:52-55

20. Guangdong Provincial Museum
1958 Stone tools from Xiqiaoshan, Nanhai county, Guangdong. Kaogu Xuebao 1959:4:1-15

21. 1960a The Neolithic remains in the lowland area of central Guangdong. Kaogu Xuebao 1960:2:107-120

22. 1960b The archaeological remains of Hainan Island, Guangdong. Kaogu Xuebao 1960:2:121-130

23. 1961a The Neolithic remains in the highlands of northern Guangdong. Kaogu 1961 :11:589-594

24. 1961b Neolithic sites in Qingtang, Wengyuan county, Guangdong. Kaogu 1961:11:585-588

25. 1961c The Neolithic remains of eastern Guangdong. Kaogu 1961:12:650-665

26. 1961d Neolithic shellmounds found in Dongxing county, Guangdong. Kaogu 1961:12:644-649

TABLE 2.1: Bibliography of published sources on the prehistoric archaeology of Guangdong and Guangxi

27. 1964 Test excavation at the Guangding site, Zijin county, Guangdong. Kaogu 1964:5:251-254

28. 1975 The Warring States tomb at Niaodanshan, Sihui county, Guangdong. Kaogu 1975:2:102-108

29. 1979 Guangdong archaeology achieves firm results: a new chapter opens in the history of Lingnan. In Thirty Years of Archaeological and Cultural Properties Work: 1949-1979 . Wen Wu Press

30. 1981 Warring States graves at Tonggugang, Guangning county, Guangdong. Kaoguxue Jikan 1:111-119

31. 1983a Excavation of a pottery kiln site of the Western Zhou dynasty at Pingyuan, Guangdong. Kaogu 1983:7:588-596

32. 1983b The Xiqiaoshan site, Nanhai county, Guangdong. Kaogu 1983:12:1085-1091

33. 1984 Report on excavations at the Zaogang shellmound site, Nanhai county, Guangdong. Kaogu 1984:3:203-212

34. Guangdong Provincial Museum & others
1973 A Warring States grave found at Deqing, Guangdong. Wenwu 1973:9:18-22

35. 1974 Report on the excavation of an ancient grave at Songshan, Beiling, Zhaoqing city, Guangdong. Wenwu 1974:11:69-79

36. 1978 A brief discussion of the cultivated rice remains from Shixia. Wenwu 1978:7:23-28.

37. 1983 The remains of a wooden structure on the water at Maogang, Gaoyao county, Guangdong. Wenwu 1983:12:31-46

38. Guangxi Provincial Museum
1973 The bronzes unearthed at Gongcheng county, Guangxi. Kaogu 1973:1:30-34

39. Guangxi Cultural Properties Brigade
1976 Report on the cave site of Zengpiyan, Guilin, Guangxi. Kaogu 1976:3:175-179

40. 1978a Warring States graves at Yingshanling, Pingle County. Kaogu Xuebao 1978:2:211-258

41. 1978b Ancient bronzes unearthed in Guangxi. Wenwu 1978:10:93-96

42. 1979 Important results of archaeological and cultural relics work in Guangxi in the past thirty years. In Thirty Years of Archaeological and Cultural Properties Work: 1949-1979. Wen Wu Press

43. 1981 The distribution of Geometric pottery in Guangxi. Wenwu Jikan 3:244-252

44. Guangxi Zhuang A.R. Archaeology Training Class & others
1975 Neolithic shell-mound sites in the Nanning region of Guangxi. Kaogu 1975:5:295-301

45. 1978 The cultural remains of the later Neolithic in the southern part of Guangxi. Wenwu 1978 :9:14-24

46. Guangzhou City, Cultural Properties Administrative Office
1977 Reconnaissance of an ancient site at Xiangang in the outskirts of Guangzhou. Wenwu Ziliao Congkan 1:172-178

47. Han Kangxin
1964 Neolithic implements found in Liucheng county, Guangxi. Kaogu 1964:11:591

48. Han Kangxin & Pan Qifeng
1982 Late Neolithic human skeletons from the Hedang site, Foshan, Guangdong. Acta Anthropologica Sinica I:1:42-52

49. He Jisheng
1981 Discussion of Guangdong's Eastern Zhou period bronze culture, and its relationship to Geometric pottery. Wenwu Jikan 3:212-224

50. Huang Weiwen & others
1979 Reinvestigation of a microlithic site at Xiqiaoshan in Nanhai county, Guangdong. Kaogu 1979:4:289-299 .

51. Huang Yuzhi & Yang Shiting
1965 Report on Neolithic sites in Mei and Dapu counties, Guangdong. Kaogu 1965:4:159-165 .

TABLE 2.1 (continued)

52. Liang Zhaotao
1959 On the distribution and dating of the southeastern coastal Neolithic. Kaogu 1959:9:491-493

53. Lin Huixiang
1958 Stepped adze: one of the characteristics of the Neolithic cultures in the south-eastern region of China. Kaogu Xuebao 1958:3:1-23

54. Liuzhou City Museum
1983 Reconnaissance and test excavation of Neolithic sites in Liuzhou, Guangxi. Kaogu 1983:7:577-583

55. Liuzhou City Museum and Yang Qun
1981 The first Late Neolithic cultural remains found in Liuzhou. Wenwu Ziliao Congkan 5:195

56. Luo Baoshan
1955 A stone axe found in the north-east section of Zhongshan University, Guangzhou. Kaogu 1955:5:57

57. Maglioni, Rafael*[1]
1975 Archaeological Discovery in Eastern Guangdong: the major writings of Fr. Rafael Maglioni. Hong Kong Archaeological Society, Journal Monograph II

58. Mai Yinghao
1957 Report on reconnaissance and test excavations at an ancient site in the North-east section of Guangzhou. Kaogu 1957:5:30-36

59. 1961 Ancient sites discovered in Conghua county, Guangdong. Kaogu 1961:8:450

60. Meacham, William*
1978 The regional context. In Sham Wan, Lamma Island. Hong Kong Archaeological Society, Journal Monograph III

61. Mo Zhi
1956 Report on reconnaissance and test excavation at the Neolithic sites on a tributary of the Pa River, Qingyuan county, Guangdong. Wenwu 1956:11:40-43

62. 1957 Report on reconnaissance of the Neolithic sites in Bao'an county, Guangdong. Kaogu 1957:6:8-15

63. 1958 Brief account of Cultural Relics reconnaissance in Guangdong, 1957. Wenwu 1958:9:60-64

64. 1961 New results of investigative excavations in Guangdong. Kaogu 1961:12:666-668

65. 1963 A Warring States site at Baishipingshan, Shixing county, Guangdong. Kaogu 1963:4:217-220

66. Peng Shifan
1976 Discussion of problems relating to the incipient Neolithic of South China Wenwu 1976:12:15-22

67. Qin Jun & Lu Chengying
1965 Neolithic stone tools discovered in Liujiang county, Guangxi. Kaogu 1965:6:313

68. Qiu Licheng & others
1982 Excavations at the Dushizi Neolithic cave site, Yangchun county, Guangdong. Kaogu 1982:5:456-459

69. Rao Huiyuan
1960 Some notes on the pottery with impressed design. Kaogu 1960:3:47-51

70. Rao Zongyi
1950 Prehistoric sites and cultures in the Han River valley, Guangdong. Hong Kong.

71. The Shixia Archaeological Team of the Guangdong Provincial Museum & others
1978 Excavation of Neolithic graves at Shixia, Qujiang County, Guangdong. Wenwu 1978:7:1-15

72. Rong Guanqiong
1956 Synopsis of Neolithic relics from the Zuo-You River valleys, Guangxi. Wenwu 1956:6:58-59

73. Su Bingqi
1978 Summary discussion of the Neolithic archaeology in our country's south-east coastal region. Wenwu 1978:3:40-42

74. 1978 Preliminary discussion of the Shixia culture. Wenwu 1978 :7:16:22

TABLE 2.1 (continued)

75. Wang Kerong
1978 The main achievements of cultural relics archaeological work in Guangxi since the establishment of New China. Wenwu 1978:9:8-13

76. Wen Wu Correspondent
1979 Summary of a symposium on the pottery with impressed decoration from the regions south of the Changjiang. Wenwu 1979:1:53-61

77. Wu Shan
1975 Notes on the decorative design of Neolithic ceramics of the Huanghe and Changjiang river valleys and South China. Wenwu 1975:5:59-67

78. Xu Hengbin
1975 A western Zhou bronze 'he' unearthed in Xinyi county, Guangdong. Wenwu 1975:11:94

79. 1981 Preliminary understanding of the evolution of geometric pottery in Guangdong. Wenwu Jikan 3:203-211

80. Yang Hao
1960 A brief report on the Neolithic sites along the Xinfeng river, Guangdong. Kaogu 1960:7:31-35

81. 1961 Introducing several bronzes found in Guangdong in recent years. Kaogu 1961:11:599-600

82. 1983 A study of the nationality of the ancient inhabitants of the Maogang site. Wenwu 1983:12:47-49

83. Yang Shiting and Chen Zhijie
1981 A discussion of important discoveries at the Hedang site, Foshan, Guangdong. Wenwu Jikan 3:234-243

84. Yin Da
1979 The Neolithic Period (2nd ed.). Beijing: Xinhua Shudian

85. Yin Huangchang
1958 A preliminary survey of the pottery with impressed geometrical patterns in the south-east district of China. Kaogu Xuebao 1958 :1:75-86

86. Zeng Guangyi
1965 A Neolithic site on the west bank of Lake Meilin, Chao'an county, Guangdong. Kaogu 1965 :2:93-94

87. Zeng Qi
1981 Microliths from the eastern foot of Xiqiaoshan. Kaogu yu Wenwu 1981:4:1-12

88. 1981 Questions relating to the stepped adze, shouldered stone tools, and "geometric impressed pottery". Wenwu Jikan 3:106-109

89. 1982 The pottery of the Shixia Culture. Zhongshan Daxue 1982:2:31-39

90. Zhu Feisu, Peng Ruce & Liu Chengde
1981 Discussion of the Geometric pottery from the Shixia site, Maba. Wenwu Jikan 3:225-233

91. Zou Heng
1981 The impressed pottery sites from the Jiangnan region, and their relationship with the Xia-Shang-Zhou cultures. Wenwu Jikan 3:46-51

[1] Asterisk indicates source is in English

TABLE 2.1 (continued)

Bard, S.M.
1975 Chung Hom Wan. Journal of the Hong Kong Archaeological Society VI:9-25

Barrett, C.J.
1973 Tai Wan reconsidered. Journal of the Hong Kong Archaeological Society IV:53-59

Davis, S.G. & M. Tregear
1960 Man Kok Tsui: archaeological site 30, Lantau Island, Hong Kong. Asian Perspectives IV:182-212

Finn, Daniel
1958 Archaeological Finds on Lamma Island near Hong Kong. Hong Kong Univerity Press.

Frost, R.J.
1979 Tung Wan (Shek Pik). Journal of the Hong Kong Archaeological Society VIII:8-16

Meacham, William
1980 The archaeology of Hong Kong. Archaeology 33:4:16-23

1981 Recent C14/TL dates and a cultural chronology for Hong Kong's prehistory. Journal of the Hong Kong Archaeological Society IX:77-79

Meacham, William (ed)
1977 An archaeological site at Shek Pik: excavation report and related papers by Walter Schofield (1888-1968). Journal Monograph I, Hong Kong Archaeological Society

1978 Sham Wan, Lamma Island: an archaeological site study. Journal Monograph III, Hong Kong Archaeological Society

Rogers, Pamela Rumball & Valerie Ward
N.d. Stone Adzes of Hong Kong. Hong Kong Museum of History, Occasional Paper I

Williams, Bernard
1979 Hai Dei Wan. Journal of the Hong Kong Archaeological Society VIII:27-51

1980 Po Yue Wan. Journal of the Hong Kong Archaeological Society IX:14-22

TABLE 2.2: Bibliography of Hong Kong sites used in this study

in the case of Hong Kong one is not limited to using published sources, as the primary data are accessible by foreign researchers. This being the case, to attempt a comprehensive summary of Hong Kong Geometric sites relying solely on published sources would not be doing justice to the topic. More importantly, the aim of this study is to gather and assess the current information on the Geometric Horizon in general, and to make it available in English. In view of these factors I have chosen to incorporate only a few of the best-detailed and representative Hong Kong Geometric sites into this study. References to these sites are contained in Table 2.2.

Despite the impressive number of relevant publications, the amount of specific information available is low, except in the most recently-published site reports (eg. #33, Table 2.1). This is undoubtedly due in large measure to the fact that only the national-level journals were consulted. More detailed reports are contained in Provincial and regional-level publications (U. Franklin, pers.comm.), but unfortunately these are not available outside China.

Since the nature of the available information has had a strong influence on the type of study I will be conducting in this paper, a brief discussion of the sources is in order.

B. DISCUSSION OF SOURCES

There are notable differences in the publication of data between Guangdong and Guangxi, as can be seen from Table 2.3 which breaks down the sources of site-specific data according to their breadth of coverage. Regional survey reports of Neolithic sites

Provincial	Regional	Sub-regional	Single site	Miscellaneous sites
a. Guangdong Province				
2	6	16	26	7
b. Guangxi Province				
4	0	8	4	1

TABLE 2.3 Published reports on Lingnan prehistoric sites, broken down by level of coverage.

have been published for all parts of Guangdong, while no such reports exist for Guangxi. The information contained in the reports is very general. A standard format is followed: dates of fieldwork, institutions involved and counties covered are listed. General summaries of physical site environment and artifacts collected are presented, and typical artifacts illustrated. Finally, a list of sites located in each county is given, usually with an indication of whether the site is a hill site, sanddune or shellmound, but not containing enough locational information to allow the site to be placed on a map.

Occasional information concerning the type of assemblage collected from a specific site can be gleaned from the body of the report, but for the vast majority of sites listed no information on their relative date or assemblage composition is given.

Sub-regional summaries reporting survey and occasionally test excavation work within individual counties, river systems, or valleys threatened by reservoir or other construction projects tend to be more detailed than the regional survey reports. They often contain a table of sites which indicates the map location and major artifact types found at each (eg. Yang 1960). Once again though, only a general description of artifacts is usually provided; there is no detail on individual assemblages.

Reports pertaining to individual sites are the most numerous category of published sources, and the most variable in quality. For example, although six individual reports have been published relating to the Shixia site, there are still great gaps in the data. There is, for example, no comprehensive treatment of the habitation layers' remains. By contrast, the Zaogang site is represented by a single short report, but a great amount of detail on the excavation and excavated remains is contained in it (Guangdong Provincial Museum 1984).

In addition to the reports which specifically set out to present site information, a number of articles on special topics, such as Xu's essay on the evolution of Geometric pottery in Guangdong also contain some site-specific information (Xu

1981). This kind of data, fulfilling as it does the need to illustrate particular points of argument, is fragmentary, but it can at least provide partial information on a site which may be otherwise unavailable.

The Geometric sites identified from these sources are listed in Appendix 1, together with an indication of the type of fieldwork undertaken at each. The basic characteristics of the published information on these sites are as follows:

a. the vast majority of sites are known only by name and general landform association,

b. for a small number there is some information as to the major ceramic types collected from the site, and whether or not the site has been the subject of excavation work.

c. a few sites can be roughly located on maps, and the relative dates of their assemblages can be estimated,

d. for only a very few sites is there quite detailed information on location, fieldwork, and collected and excavated remains.

I noted above that there have been no regional reports published for Guangxi. Indeed, of the sources tabulated in Table 2.3 only one site report and two subregional summaries contain information on Geometric sites. The other sources in these categories pertain to regions outside the area of distribution or time period of occurrence of Geometric pottery. However, in contrast to Guangdong, an article has been published which specifically lists almost all the known Geometric sites in the province, with an indication of the major Geometric ceramic

patterns found at each.[2] Thus, in the end result, the list of Geometric sites in Guangxi is apparently more complete, although less detailed, than for Guangdong (Appendix 2).

C. DISCUSSION OF SITE DATA

1. Surface Reconnaissance

There is an apparent difference in the amount of fieldwork that has been undertaken in each of the 2 provinces. During the late 1950's and early 1960's surface reconnaissance for archaeological sites was carried out throughout Guangdong and Guangxi. In the case of Guangdong, the results were published in a series of articles between 1960 and 1964, each article dealing with a different region of the province. In a 1979 article one of these regions (Eastern Guangdong) was subdivided into coastal and interior segments, and these are the divisions I have followed (Figure 2.1; Table 2.4). The seven regions of Guangdong are:

I. East Coast: comprising the northeast coast and lower reaches of the Han River,

II. East River: comprising the drainage of the East River (Dongjiang) and interior valleys from the Pearl delta northeast to the Jiangxi/Fujian border;

III. Northern Region: the drainage of the North River (Beijiang)

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[2]Although this article purports to list all known Geometric sites, reference to some additional sites was found in subregional reports. These are listed in Appendix 2.

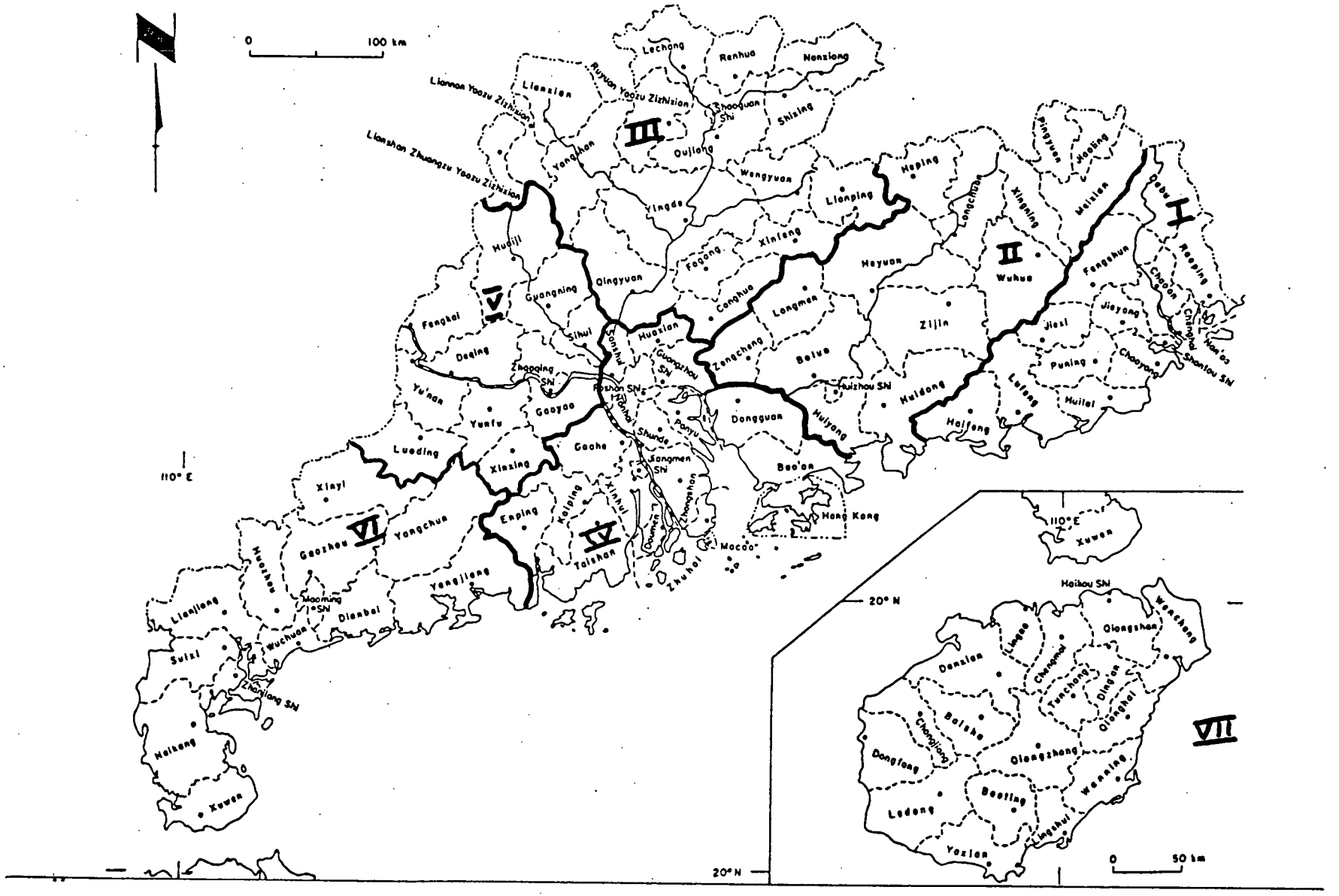

FIGURE 2.1: Regional subdivisions of Guangdong Province (refer to Table 2.4)

I. Eastern Coastal Region

Chao'an
Chaoyang
Chenghai
Dabu
Fengshun
Haifeng
Huilai
Jiexi
Jieyang
Lufeng
Nan'ao
Puning
Raoping
Shantou Shi

II. East River

Boluo
Heping
Heyuan
Huidong
Huiyang
Huizhou Shi
Jiaoling
Longchuan
Longmen
Meixian
Pingyuan
Wuhua
Xingning
Zengcheng
Zijin

III. Northern Region

Conghua
Fogang
Lechang
Lian Xian
Liannan Yaozu Zizhixian
Lianping
Lianshan Zhuangzu Yaozu Zizhixian
Nanxiong
Qingyuan
Qujiang
Renhua
Ruyuan Yaozu Zizhixian
Shaoguan Shi
Shixing
Wengyuan
Xinfeng
Yangshan
Yingde

IV. Central Region

Bao'an
Dongguan
Doumen
Enping
Foshan Shi
Gaohe
Guangzhou Shi
Hua Xian
Jiangmen Shi
Kaiping
Nanhai
Panyu
Sanshui
Shunde
Taishan
Xinhui
Zhongshan
Zhuhai

V. West River

Deqing
Fengkai
Gaoyao
Guangning
Huaiji
Luoding
Sihui
Xinxing
Yu'nan
Yunfu
Zhaoqing Shi

VI. Southern Region

Dianbai
Haikang
Huazhou
Lianjiang
Maoming Shi
Suixi
Wuchuan
Xinyi
Xuwen
Yangchun
Yangjiang
Zhanjiang Shi

VII. Hainan

Baisha
Baoting
Changjiang
Chengmai
Dan Xian
Ding'an
Dongfang
Gaozhou
Haikou Shi
Ledong
Lin'gao
Lingshui
Qionghai
Qiongshan
Qiongzhong
Tunchang
Wanning
Wenchang
Ya Xian

TABLE 2.4: Guangdong: Counties and Municipalities listed by Region

and its tributaries northwards from the Pearl delta to the Jiangxi/Hunan border;

IV. Central Region: including the Pearl delta and surrounding lowland areas;

V: West River: the drainage of the West River (Xijiang) and its tributaries from the Pearl delta westwards to the Guangxi border;

VI. Southern Region: comprising the southeast coast and Liaoning Peninsula;

VII. Hainan Island.

In Guangdong, Geometric sites have been found in all regions except Hainan Island.

Although Guangxi summaries divide the Province into two broad regions: North/Northeast/Southeast, and South/Southwest/West, these regions are nowhere precisely defined. It is thus not possible to divide Guangxi on a regional basis. On the other hand, the distribution of Geometric sites in Guangxi is clearly limited. As Figure 2.2 indicates the counties where Geometric sites have been found in Guangxi are concentrated in the Northeast: in the valleys of the Guijiang, Hejiang, and Linjiang which extend from the West River to the Hunan border paralleling the boundary with Northern Guangdong, and in the Southeast: the drainages of the Qinjiang, Lianjiang and Rongjiang. Only a single late Mi Period site is located outside this area, in the county of Wuming in central Guangxi.

No information is available regarding the survey methods

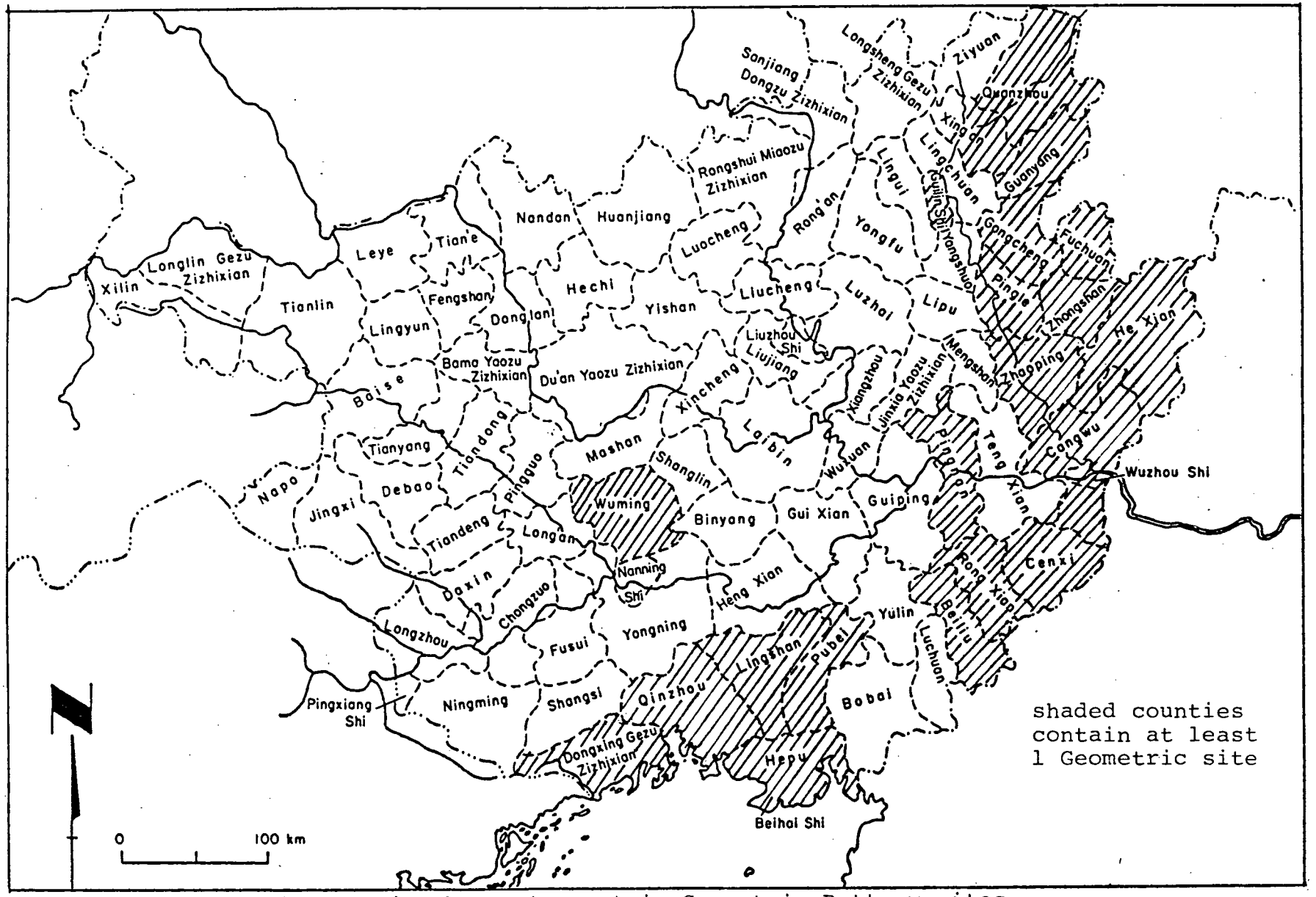

FIGURE 2.2: Guangxi: Counties known to contain Geometric Pottery sites

used, or the intensity or extent of coverage, although several points can be inferred from the Guangdong regional reports regarding the situation in that province:

1. In general, survey coverage was not intensive or complete. For example, in Mei and Dapu counties of eastern Guangdong 7 men surveyed 2 counties in a one month period, finding 46 sites. All sites are clustered around contemporary towns and villages (Huang & Yang 1965:159).

2. Not all counties in each region were surveyed, and not all were surveyed with equal intensity.

3. In some counties site reconnaissance seems to have been confined to river valleys, and the lower hill-slopes bordering them (eg. Huang & Yang 1965; Yang 1960).

4. In other counties, limited zones only, such as areas threatened by construction projects, have been quite intensively surveyed, while the rest of the county may not have been investigated at all. Two examples are the reservoir projects in northwest Bao'an county (Mo 1957) and on a tributary of the Pa River in Qingyuan (Mo 1956).

Table 2.5, which has been drawn from information contained in the Central Region reconnaissance report (Guangdong Provincial Museum 1960:107), lists the reconnaissance work on which that report was based. It is a typical example of regional reconnaissance coverage. Of the survey projects listed only one (March 1957) was a concerted effort to cover the whole region, and it seems to have been a cursory attempt: the total duration of fieldwork was one month, and in total only 54 sites

Date	Location	Number of sites	Fieldworkers
7, 1956	Bao'an & Dongguan Counties	11	Cultural Properties Brigade of Guangdong Bureau of Culture; History Dept., Zhongshan Univ.
8, 1956	northern Guangzhou Shi	9	Zhongshan University; CPAM Guangzhou
(1,1957, test excavations at above sites)			" " CPAM Guangdong; Guangzhou City Museum
10, 1956	northwest Bao'an County	9	Cultural Properties Brigade of Guangdong Bureau of Culture
(1, 1957: test excavations at above sites)			(same personnel)
1956-1957	Longdong area, Panyu County	17	Longdong Primary School teacher & students, rechecked by Guangdong Bureau of Culture
3, 1957	entire region, except Bao'an & Dongguan	54	Cadres Archaeology Training Class, organized by Guangdong Bureau of Culture
7-8, 1958	Panyu County	14	CPAM Guangzhou
late 1958	Xiqiaoshan, Nanhai County	14	Zhongshan University, and Guangdong Provincial Museum

TABLE 2.5: Archaeological reconnaissance work carried out in the Central lowlands Region of Guangdong, late 1950's. (Guangdong Provincial Museum 1960:107)

were located. By contrast, 74 sites were recorded by other more intensive surveys conducted in only 5 counties of the same region.

Archaeological reconnaissance work was carried out in Guangxi during the same period as in Guangdong, but a 1981 report indicates that it was not comprehensive: not all counties were surveyed, and the inexperience of the fieldworkers resulted in their failure to recognize and record many (particularly Geometric) sites (Guangxi Cultural Properties Brigade,

1981:244). The same comments regarding extent and intensity of coverage made for Guangdong seem also to apply to Guangxi.

Details on the total number of prehistoric sites recorded in Guangdong is provided by He (1981:218). By 1979 approximately 900 prehistoric sites ("ancient cultural sites") had been identified in the province. This number does not include cemetery sites. Of these 900 the majority (approximately 650) were identified with the Geometric Horizon. All but 50 or 60 were known only from surface reconnaissance.

The total number of Geometric sites in Guangxi for which we have information is 60. According to a 1979 report, over 900 prehistoric ("primitive culture") sites (again not including cemetery sites) have been recorded in Guangxi (Guangxi Cultural Properties Brigade 1979:339). The proportion of Geometric sites in Guangxi is much smaller, as is to be expected from their more limited distribution compared to Guangdong.

These problems, combined with the patchy publication of results discussed previously may introduce an inestimable degree of bias into any attempted studies of regional site patterning that might be based on the published data. It is still possible however that limited subregional studies could be attempted if information of survey methods and more detailed field data could be obtained. The areas which are currently best represented for such study are listed in Table 2.6.

In summary, currently available data can not be used for detailed studies of regional site patterning during the Geometric period. They may however be useful in suggesting

AREA	COMMENTS	REFERENCES
Mei & Dapu Counties	Extensive area, not very intensive coverage.	55
Haifeng Peninsula	Intensive coverage of very limited area. artifact remains held at Feng Ping Shan Museum, Hong Kong. Field notes lost. Chinese archaeologists have reinvestigated some sites, but details are not yet published.	57
Pajiang tributary, Qingyuan County	Intensive surface survey in advance of reservoir construction. Very limited area.	61
Xinfeng River area	Extensive area, not very intensive coverage.	80
Fei'eling area, Guangzhou Shi	Very limited area, intensive coverage.	58
Bao'an County, reservoir project	Very limited area, intensive coverage.	
Nanhai County	Fairly intensive reconnaissance for shellmound sites. Limited area around Xiqiaoshan also very intensively surveyed.	32,33,50
Maba, Qujiang County	According to map contained in Shixia site report a number of sites have been found in the immediate vicinity of Shixia. No further information yet published.	71
Hong Kong Colony	Colony-wide intensive survey currently underway. No reports yet published.	S.Bard, pers. comm.

TABLE 2.6: Areas of concentrated reconnaissance work in Guangdong Province

possibilities for further testing, and these will be discussed in the following chapters.

2. Excavations

He Jisheng reports that 50 to 60 ancient sites in Guangdong, not including cemeteries, had been tested or undergone full-scale excavation by 1979 (1981:218). Less than 10 sites had proved to contain stratified cultural deposits. If we assume that the proportion of Geometric sites in the excavated sample is roughly

constant with the overall sample, then circa 35-40 Geometric sites have been excavated. The sites which are reported to have been the subject of extensive excavations (i.e. more than one or two test pits) are listed in Table 2.7. and plotted on Figure 2.3. Not all have had site reports published to date.

Also included in Table 2.7 are 10 Bronze and early Iron Age burial sites, comprising 31 graves, which are all that can be identified from the published sources out of the total of 38 mentioned by He (1981:213). A pair of cemeteries in Raoping County are also counted as Bronze Age, although the only bronze recovered was a single ge (He 1981:217).

The situation with regard to Guangxi is quite bleak. I could find reference to the test excavation of only 2 Geometric sites: Chakouyan (Liyushan) in Fuchuan County, and Lujiacun in Quanzhou County. Extensive excavations are reported from only one: the Warring States Period burial site at Yinshanling, Pingle County. Fortunately, a detailed site report has been published for the latter (Guangxi Cultural Properties Brigade 1978). Details of the former two test excavations can only be pieced together from secondary sources (Guangxi Cultural Properties Brigade 1979; 1981).

None of the published excavation reports discusses methods or goals of excavation. The primary aim of most appears to have been the recovery of relative and absolute dating information, in order that the relationship of the different stages of the Geometric Horizon, not only within Lingnan, but also between Lingnan and neighbouring regions, can be clarified. Thus only

SITE/COUNTY	DESCRIPTION	PUBLISHED INFORMATION	REFERENCES
Baishipingshan, Shixing County	late Mi Period habitation site	good site report	*65, 15
Chengpicun, Shixing County	Chevron Soft Pottery Period kiln site	no report	90
Dingdapushan; Tazijinshan, Raoping County	Chevron Transitional Period (late Shang - Western Zhou) cemeteries	no report	49
Gaodiyuan #1, Sihui County	Kui Period grave	no report	49
Hedang, Foshan Shi	stratified site: 2 layers, both are early to middle Chevron Transitional Period	partial reports	*83, 48
Jinlansi, Zengcheng County	stratified site: a- late Middle Neolithic (pre-Geometric) b- Chevron Soft Pottery Period c- Mi Period	site report contains only general information; more detail on ceramics in reference #79	*64, 79
Lanmashan, Huaiji County	Kui Period grave	no report	49
Luoding #1 Luoding County	Kui Period grave	no site report, partial detail in reference #49	49
Luoding #2 Luoding County	Kui Period grave	no report	49
Luoyanshan, Deqing County	Mi Period grave	detailed site report	34
Maogang, Gaoyao County	Mi Period (?) habitation site	detailed site report	37
Matiping, Qujiang County	Chevron Soft Pottery Period habitation site	good site report	14

TABLE 2.7: Excavated sites in Guangdong

SITE/COUNTY	DESCRIPTION	PUBLISHED INFORMATION	REFERENCES
Nianyuzhuan Qujiang County	Chevron Soft Pottery Period habitation site	good site report	14
Niaodanshan, Sihui County	Kui Period grave	detailed site report	28
Pushaoshan, Qujiang County	stratified site: Chevron Period	no report	90
Shixia, Qujiang County	stratified site: a- pre-Geometric to early Geometric b- Chevron Soft Pottery Period c- Kui Period	several partial reports, no comprehensive site report	36,71,73, 89,90
Shuikou, Pingyuan County	Chevron Transitional Period kiln site	detailed site report	31
Songshan, Zhaoqing Shi	late Mi Period grave	detailed site report	35
Tonggugang, Guangning County	Mi Period cemetery	detailed site report	30
Xigualing, Zengcheng County	Mi Period habitation site	good site report	15
Xiqiaoshan, Nanhai County	pre-Geometric & Chevron Period lithic quarry and workshop sites: Localities #7 & #11 contain Geometric remains	general information	32,50
Zaogang, Nanhai County	Chevron Soft Pottery or Transitional Period habitation site	good site report	33
Zoumagang, Shaoguan Shi	Chevron Soft Pottery Period habitation site	good site report	14

TABLE 2.7 (continued)

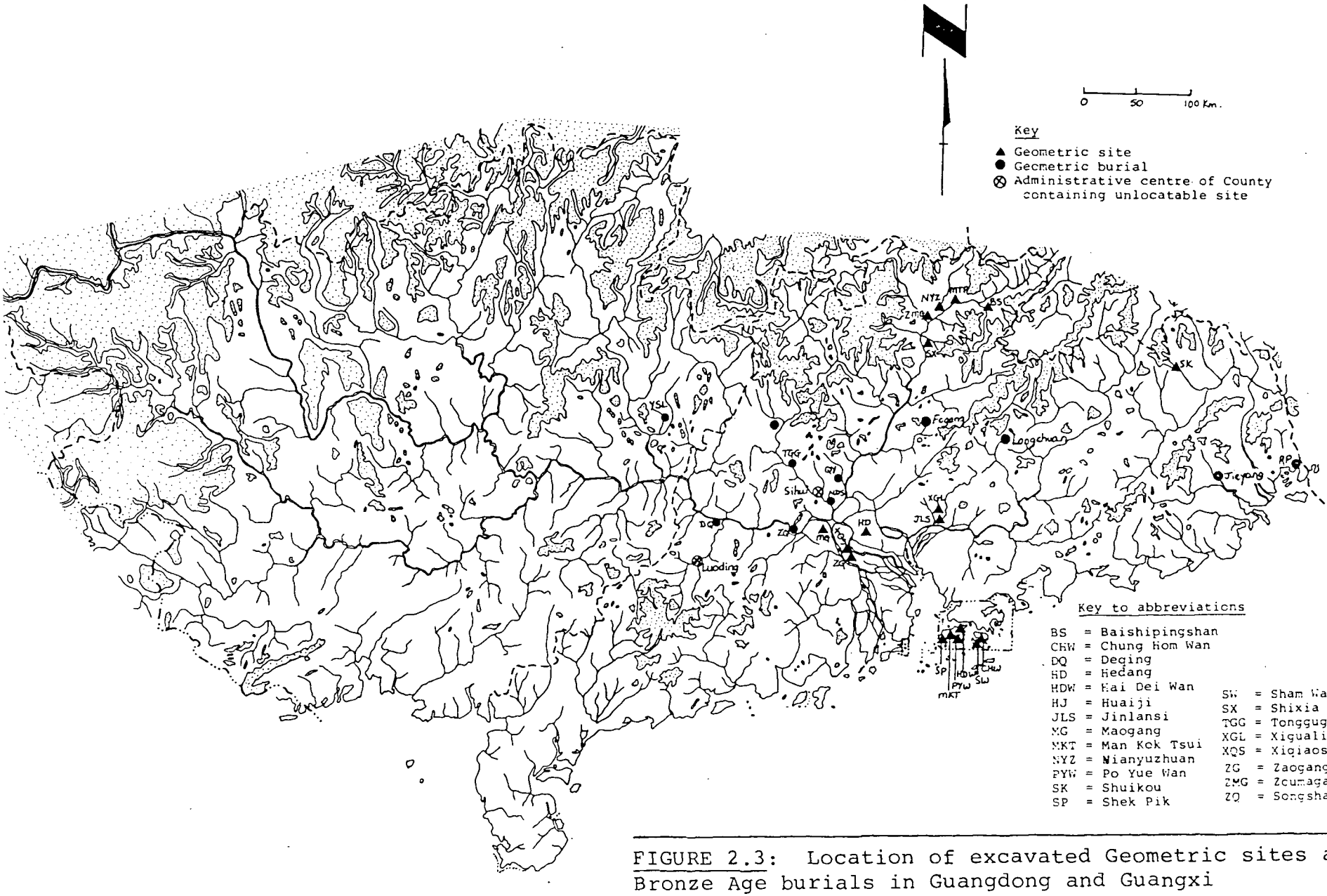

FIGURE 2.3: Location of excavated Geometric sites and Bronze Age burials in Guangdong and Guangxi

those sites with clear stratigraphy have been extensively excavated. Identification of such sites seems to be the main purpose of test excavations. A second goal has been to gather sufficient economic and social information to accurately place the local Geometric stages in the appropriate level in the Marxist evolutionary scheme. Discussion of these three topics: the internal sequence, relationships with neighbouring areas, and identification of developmental stages, occupies the bulk of the discussions of the Geometric Horizon in the Chinese literature.

The type of data retrieved in the course of excavation and reported in the literature is centred on these excavation priorities. The first has been approached by selection of clearly stratified sites for extensive excavation. Since the mid 1970's radiocarbon dating techniques have been increasingly used at Lingnan sites. Other techniques, such as thermoluminescence have not been employed. Thermoluminescence has proved largely unusable in Hong Kong, and this might account for its lack of use in Guangdong (Meacham 1981:77).

Unfortunately because of this emphasis on vertical rather than horizontal excavation strategies the type of information needed for spatial studies (both intra- and inter-site) has not yet been generated in the Lingnan region.

Without direct access to the artifacts themselves it is impossible to evaluate the conclusions made by the Chinese from such excavated data. What can be done, and will be in succeeding chapters, is to evaluate the inferred patterns of

development in light of what data are available and in light of current methodology in Western archaeology. This will then be used as a basis for generating hypotheses for further investigation.

SITE[1]	DESCRIPTION	REFERENCES
Chung Hom Wan, Hong Kong Is.	stratified site: a- pre-geometric, Middle Neolithic level b- Chevron Transitional to Kui Period	Bard 1975
Hai Dei Wan, Lantau Is.	stratified site, strata very mixed: a- Chevron Soft Pottery Period b- Chevron Transitional to Kui Period; possibly a burial site	Williams 1979
Man Kok Tsui, Lantau Is.	several localities, possibly separate activity areas. Chevron Soft Pottery to Kui Period	Davis & Tregear 1960
Po Yue Wan, Cheung Chau	stratified habitation site: a- Chevron Soft Pottery Period b- Kui Period	Williams 1980
Sham Wan, Lamma Is.	stratified habitation site; several localities, possibly separate activity areas: a- pre-geometric, Middle Neolithic b- Chevron Transitional to Kui Period c- Historic Period	Meacham, ed. 1978
Shek Pik, Lantau Is.	i. Chevron Transitional Period burials ii. stratified habitation site: a- Chevron Soft Pottery Period b- Chevron Transitional to Kui Period	Meacham, ed. 1977
Tai Wan Lamma Is.	several localities, probably separate activity areas: Kui Period	Finn 1958, Barrett 1973

[1]To facilitate reference to the published sources, site names and locations in Hong Kong have been romanized according to the common forms used in the Journal of the Hong Kong Archaeological Society. Since these are romanizations of Cantonese pronounciation they are distinguished in this study by separation and initial capitalization of each character. Thus 春坎灣 is romanized as Chung Hom Wan, not Chongkanwan.

TABLE 2.8: Hong Kong prehistoric sites included in this study.

The several Hong Kong sites included in this study (Table 2.8) have all been the subjects of fairly extensive excavation, and site reports have been published for each. As is the case

for Guangdong, the primary goals of excavation to date (where these were stated) were to recover stratigraphic information. In terms of the methods and strategies employed the Hong Kong excavations are comparable to the Guangdong work.

The current colony-wide survey is a necessary first step in applying methods of regional analysis in the Lingnan area, and it is to be hoped that this direction will be continued in future excavation work.

III. CHRONOLOGY OF THE LINGNAN GEOMETRIC HORIZON

A. DISCUSSION OF RELATIVE CHRONOLOGY

The Geometric Horizon in Lingan extends roughly from the beginning of the Late Neolithic[3] (between 3000 & 2500 B.C.) through the Bronze and early Iron Ages, with a single and distinctive type of geometric ceramic decoration continuing into the early historic Western Han period (post 220 B.C.). As I indicated previously,I shall be treating only the prehistoric phases in this study.

Excavation of several stratified sites and the application of radiocarbon dating in Guangdong and Hong Kong in recent years have resulted in the chronological and typological definition of several periods within the Geometric Horizon in this area. These stages are primarily defined by the dominant geometric motifs used on the ceramics, but they also have significance in terms of other developments in material culture and social and economic life. In this chapter I shall deal only with the successive changes in ceramics and other artifacts which form the basis for relative dating, and the radiocarbon data from Lingnan sites which has begun to tie the typological sequence to an absolute time scale.

Three recently-published Chinese sources provide typological dating sequences for the Guangdong Geometric Horizon

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[3]Use of the term 'Neolithic' by the archaeologists of this region connotes the presence of polished stone tools, and does not have subsistence implications.

(Table 3.1). Xu (1981) originally presented his at the 1978 conference on the Impressed Pottery Cultures of South China. He defined 4 stages in the life-cycle of the Horizon in Guangdong, from 'Birth' through 'Decline'. In this scheme the internal developmental aspects of the Guangdong sequence are stressed. The major respect in which Xu's outline differs from subsequent ones is his definition of an Initial Geometric stage in the Early and Middle Neolithic, represented by check-stamped ceramics. This stage is not included as part of the Geometric Horizon proper by other writers.

The stages defined by He (1981) are consistent with the last three periods defined by Xu, except that a terminal stage is added: the period of the characteristic 'check and seal' stamped hard pottery of Western Han. In other respects the temporal boundaries of He's sequence coincide with those of Xu.

The Guangdong Provincial Museum in the Shuikou site report (1983a) provides yet another dating sequence. In this case the long 'Developmental' period is subdivided into three: Late Neolithic, Shang period, and Western Zhou period. This division is based on a finer breakdown of changes in ceramic fabric and surface decoration, for the purpose of more precisely defining the date of the Shuikou site. These ceramic features are not specific to the Shuikou site, but are found in all Guangdong Geometric sites.

Hong Kong, situated at about the mid-point of the Guangdong coastline has been the scene of much archaeological work in the past 20 - odd years. The geometric sequence in this limited

<table>
<tr><th colspan="3">GUANGDONG PROVINCE</th><th>HONG KONG</th><th>GUANGXI PROVINCE</th></tr>
<tr><th>Xu, 1981</th><th>He, 1981</th><th>Guangdong Provincial Museum, 1983a</th><th>Meacham, 1981</th><th>Guangxi Cultural Properties Brigade, 1981</th></tr>
<tr><td>INITIAL STAGE
[Early-Middle Neolithic]</td><td></td><td></td><td></td><td rowspan="3">CHECK-STAMPED POTTERY
[Late Neolithic]</td></tr>
<tr><td rowspan="2">(true Geometric Horizon)

DEVELOPMENT
[Late Neolithic to early Eastern Zhou: ca.2700/3000 - 700 BC]</td><td rowspan="2">CHEVRON STAGE</td><td>LATE NEOLITHIC</td><td>LATE NEOLITHIC
[ca.2500 - 1500 BC]</td></tr>
<tr><td>SHANG PERIOD
WESTERN ZHOU PERIOD</td><td>EARLY BRONZE AGE
[ca.1700 - 1000 BC]</td></tr>
<tr><td rowspan="2">FLORESCENCE
[late Spring & Autumn to early Warring States: ca.700 - 400 BC]</td><td rowspan="2">'KUI' STAGE</td><td rowspan="2">SPRING & AUTUMN PERIOD</td><td rowspan="3">LATE BRONZE AGE
[ca.1000 - 400 BC]</td><td>'KUI' STAGE
[Western Zhou to Spring & Autumn period]</td></tr>
<tr><td rowspan="2">WARRING STATES PERIOD</td><td rowspan="2">'MI' STAGE
[Warring States period]</td></tr>
<tr><td>DECLINE
[mid to late Warring States: ca.400 - 200 BC]</td><td>'MI' STAGE</td><td></td></tr>
<tr><td></td><td>CHECK & SEAL STAGE
[Western Han]</td><td></td><td></td><td></td></tr>
</table>

TABLE 3.1: Previously suggested chronological subdivisions of the Lingnan Geometric Horizon

area is consequently well-studied and makes an important comparative example to the Guangdong sequences, which are based on data from sites scattered over a wide area. The most recent chronological outline for the Hong Kong prehistoric is provided by Meacham (1981). Meacham defines the subdivisions of the Geometric Horizon in the traditional Neolithic/Bronze Age terminology . The main difference with the Guangdong schemes, apart from minor variations in absolute dates, is his definition of a separate 'Early Bronze Age' period equating with the 'Shang' and 'Western Zhou' stages of the Guangdong Provincial Museum sequence. As is the case with the latter, Meacham's subdivision is based on a finer breakdown of the ceramic sequence during the 'Developmental' stage . Furthermore, Meacham hypothesizes the concomitant beginnings of metal-working during this period, hence his use of the term 'Bronze Age' (1982:78-79).

Finally, Table 3.1 illustrates the correlation between the Guangdong and Guangxi Geometric. An initial phase of coarse check-stamped pottery similar to Guangdong's pre-geometric is found also in Guangxi, lasting through to the Bronze Age. In light of present knowledge, the earliest Geometric pottery in Guangxi corresponds to Guangdong's Kui Period. However, the earliest geometric here has not been defined by excavation or radiocarbon dating, thus it is possible that the lower boundary might be pushed further back by future research. The two prehistoric periods of the Geometric currently defined in Guangxi are equivalent to the latter 2 periods of the Guangdong

Geometric, and are almost identical in content.

The chronological scheme I shall use in this study incorporates features of all of the above. In light of recent excavation results, the subdivision of the 'Developmental' stage is well justified. It is also more useful for studying developments in such areas as technology. Although it is useful to define the temporal relationship between the historic cultures of the Zhongyuan (Central Plains) and the prehistoric cultures of Lingnan, to use the northern terminology to actually designate the Lingnan periods is inappropriate. As many Chinese archaeologists have noted, the Lingnan Geometric cultures have their own independent developmental cycle whose relationship to other regions of China is yet to be precisely defined (Wen Wu Correspondent 1979, Guangdong Provincial Museum 1979). On the other hand I do not wish to follow Meacham's example and use the Neolithic/Bronze Age designations for a scheme designed to be generally applicable to the Lingnan region. The beginnings of bronze-working and bronze-use in Lingnan are still very poorly-defined, and may vary on a sub-regional scale. Changes in ceramic fabric and surface patterning do seem to be the most sensitive and generally-applicable chronological indicator, thus I have followed He's example, and named the subdivisions of the Geometric according to the major ceramic characteristics. Table 3.2 presents the major outlines of this sequence. In the remainder of this chapter I shall present in more detail the specific chronological changes in the material remains, and the excavated site assemblages which have contributed to defining

CERAMIC PERIOD	APPROXIMATE DATES	CULTURAL PERIOD	REPRESENTATIVE SITES
[PRE-GEOMETRIC: CHECK & INCISED CHEVRON]	3600-3000 B.C.	Late Middle Neolithic to initial Late Neolithic	Shixia period 1&2 graves; Jinlansi lower layer
CHEVRON 1 chevron & check-impressed soft pottery	3000-2500 B.C.	Early Late Neolithic	Matiping Shixia lower layer & Period 3 graves
CHEVRON 2 chevron & complex-line check, soft pottery	2700-1000 B.C.	Late Neolithic	Zoumagang Po Yue Wan Sham Wan, layer Cb Shixia, middle layer & Period 4 graves Jinlansi, middle layer
CHEVRON 3 soft-hard pottery transition		Late Neolithic to Early Bronze Age	Hedang, layers 2&3 Dongkengnan Shakengnan Shuikou
KUI	800-500 B.C.	Late Bronze Age (ca. Spring & Autumn period)	Shixia, upper layer Sham Wan, layer Ca
MI	500-200 B.C.	Late Bronze to Early Iron Age (ca. Warring States)	Xigualing Baishipingshan Jinlansi, upper layer Maogangcun

TABLE 3.2: Temporal subdivisions of the Lingnan Geometric Horizon

them.

B. CHRONOLOGICAL SUBDIVISIONS OF THE LINGNAN GEOMETRIC HORIZON

1. Initial, Pre-geometric Phase

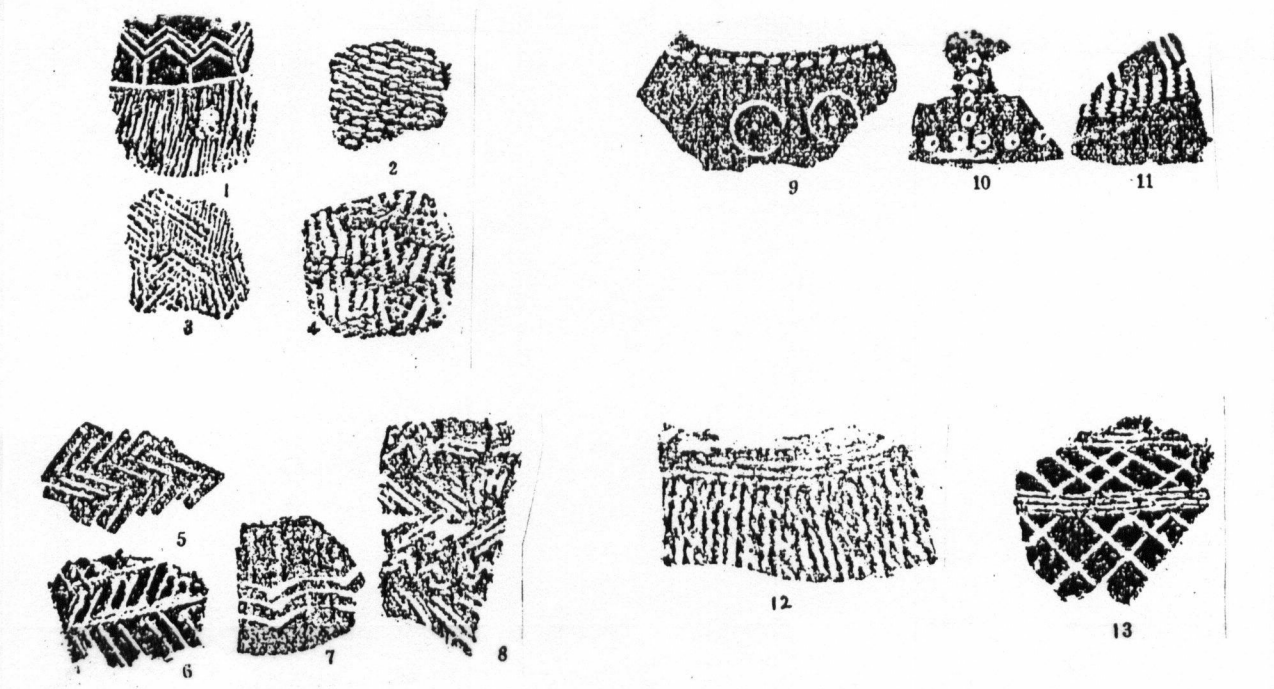
Pottery bearing check-stamped and incised chevron patterning has been unearthed at 2 Neolithic sites in Guangdong -- Shixia and Jinlansi -- dating to the terminal Middle Neolithic, or early Late Neolithic (Figure 3.1). This seems to be the immediate precursor of the first impressed geometric pottery in the area (Xu 1981:204).

2. Chevron & Check-impressed Soft Pottery (Chevron 1)

An overlapping chevron patterning dominates the impressed geometric pottery of this period, with simple check patterning also prominent. Geometric pottery as a whole constitutes only a small fraction of the total ceramic assemblage (Table 3.3). Other geometric patterns present in this stage include basket, comb, double-circle, whirlpool and net (Figure 3.2).

Individual vessels are typically decorated with only one geometric motif; patterns are typically applied in a haphazard, irregular manner, hence the designation "overlapping chevron".

There are only a small number of vessel forms, most common are jars, open bowls (both round-based, and on high ring-feet), and coarse-tempered potstands. Remains of tripod *ding* vessels have been found at early sites of this period such as



1-4. Jinlansi lower layer (Xu 1981:204)
5-13. Shixia, base of lower layer (Zhu et al. 1981:226)

FIGURE 3.1 Incised geometric ceramics from Guangdong sites.

Nianyuzhuan and Shixia in Qujiang county[4] (Figure 3.3).

The fabric of the geometric ceramics is fine-tempered, soft and low-fired (maximum ca. 800° C). Geometric patterning (with the exception of weave-type impressions) is not found on coarse-tempered ceramics of this period.

[4]Vessels from Period 1 to 3 burials at Shixia show many stylistic traits which are unique in Guangdong, but which have close affinities to vessel forms found at sites in Jiangxi, and particularly in the lower reaches of the Yangtze (Su 1978). Only a small proportion of the burial ceramics are comparable in form and decoration to those from the habitation layers, or from other Geometric sites in the province. Since the more varied forms are not typical of other Geometric sites they have not been included in the definition of this period. The Shixia ceramics will be discussed further below.

SITE NAME	FABRIC (%) Coarse	Fine hard | soft / total	Other	SURFACE DECORATION: (%) Geometric of coarse | of fine / of total	Non-Geometric	Major Patterns
Chevron 1						
Shixia (lower)	42.5	0 | 100 / 57.5	---	7.7	92.3	1.chevron
Matiping	88.4	0 | 100 / 11.6	---	n.r.[1]	n.r.	
Chevron 2						
Shixia (middle)	33.3	0 | 100 / 66.7	---	--- | 64.2 / 38.69	61.31	1.chevron, 2.complex-line check 3.thundercloud; check
Jinlansi (middle)	75.4	0 | 100 / 21.0	3.6	n.r.	n.r.	1.chevron, 2.thundercloud 3.complex-line check
Chevron 3						
Hedang (lower)	25.8	40.2 | 59.8 / 59.5	14.8	52.1 | 65.1 / 50.2	49.8	1.chevron, 2.chevron & thunder 3.check; line
(upper)	21.1	19.9 | 80.1 / 71.4	7.6	48.7 | 56.0 / 50.2	49.8	1.chevron 2&3.chevron & thunder; check; line
Shuikou	10.2	65.2 | 24.6 / 89.8	---	100 | 68.3 / 71.5	28.5	1.check, 2.thundercloud
Kui Period						
Zaiguangding[2]	82.7	20 | 80 / 16.5	---	min. | maj. / minority	majority	(coarse) 1.incised, 2.bowstring (fine soft) 1.check, 2.weave (fine hard) 1.kui, 2.thundercloud, mi, circle, check
Mi Period						
Xigualing	min.	maj. | min. / maj.		93.2	6.8	1.mi, 2.check, 3.incised
Baishipingshan	min.	maj. | min. / maj.		77.8	22.5	1.mi, 2.check 3.incised

[1] n.r.= not reported
[2] test excavation only

TABLE 3.3: Temporal changes in ceramic fabric and surface decoration in excavated assemblages.

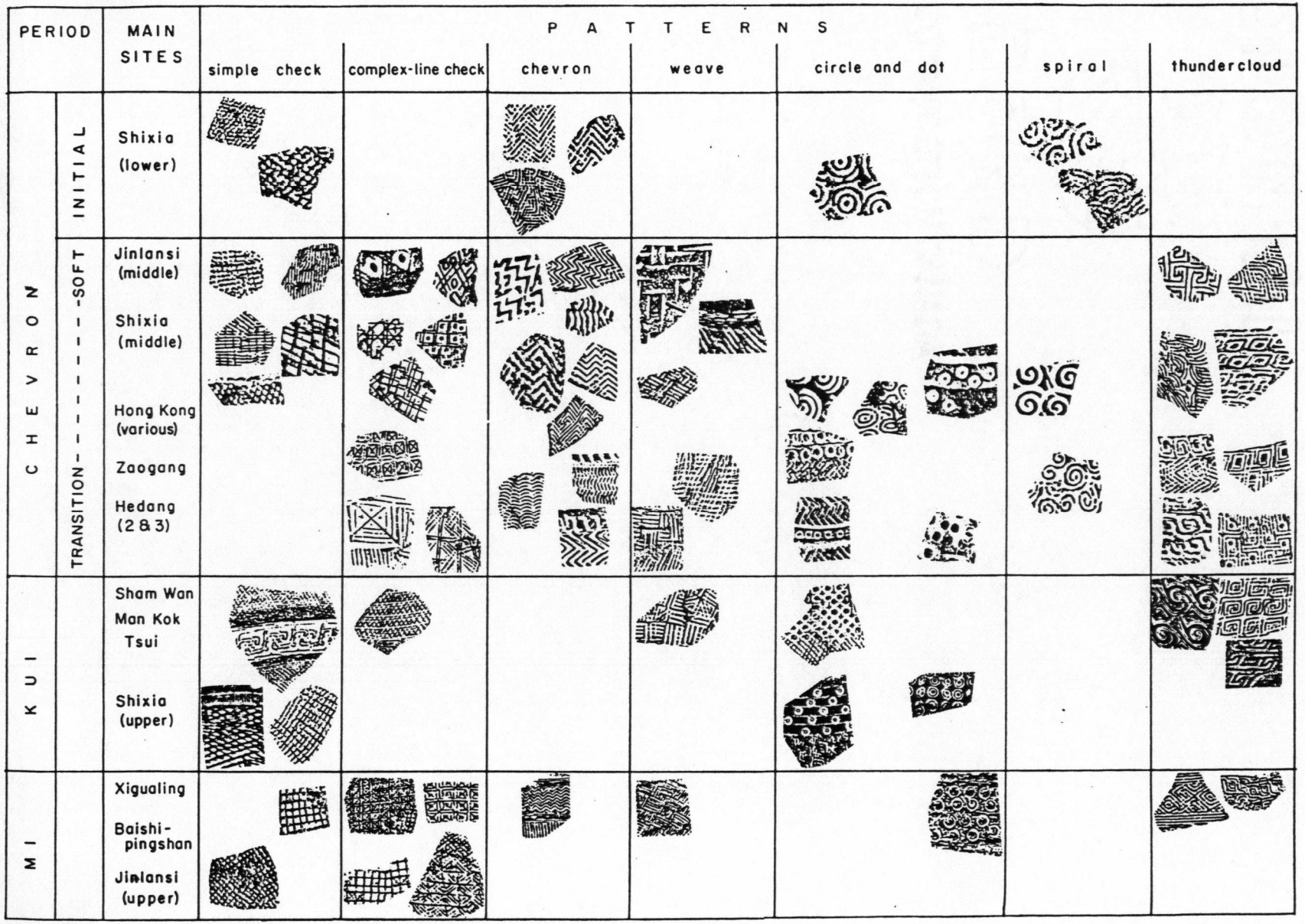


FIGURE 3.2a: Geometric ceramic surface patterns: Guangdong Province

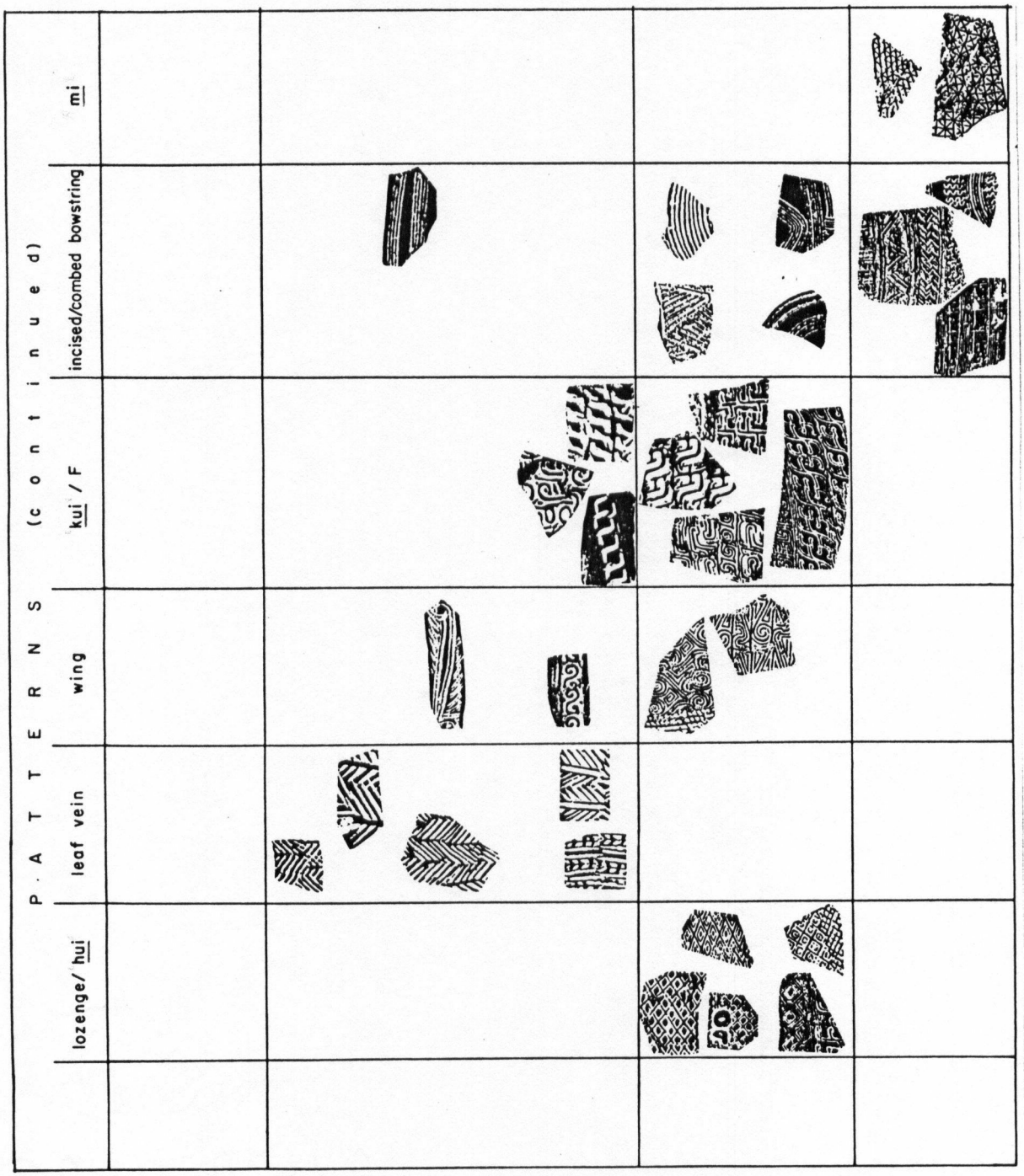


FIGURE 3.2a (continued)

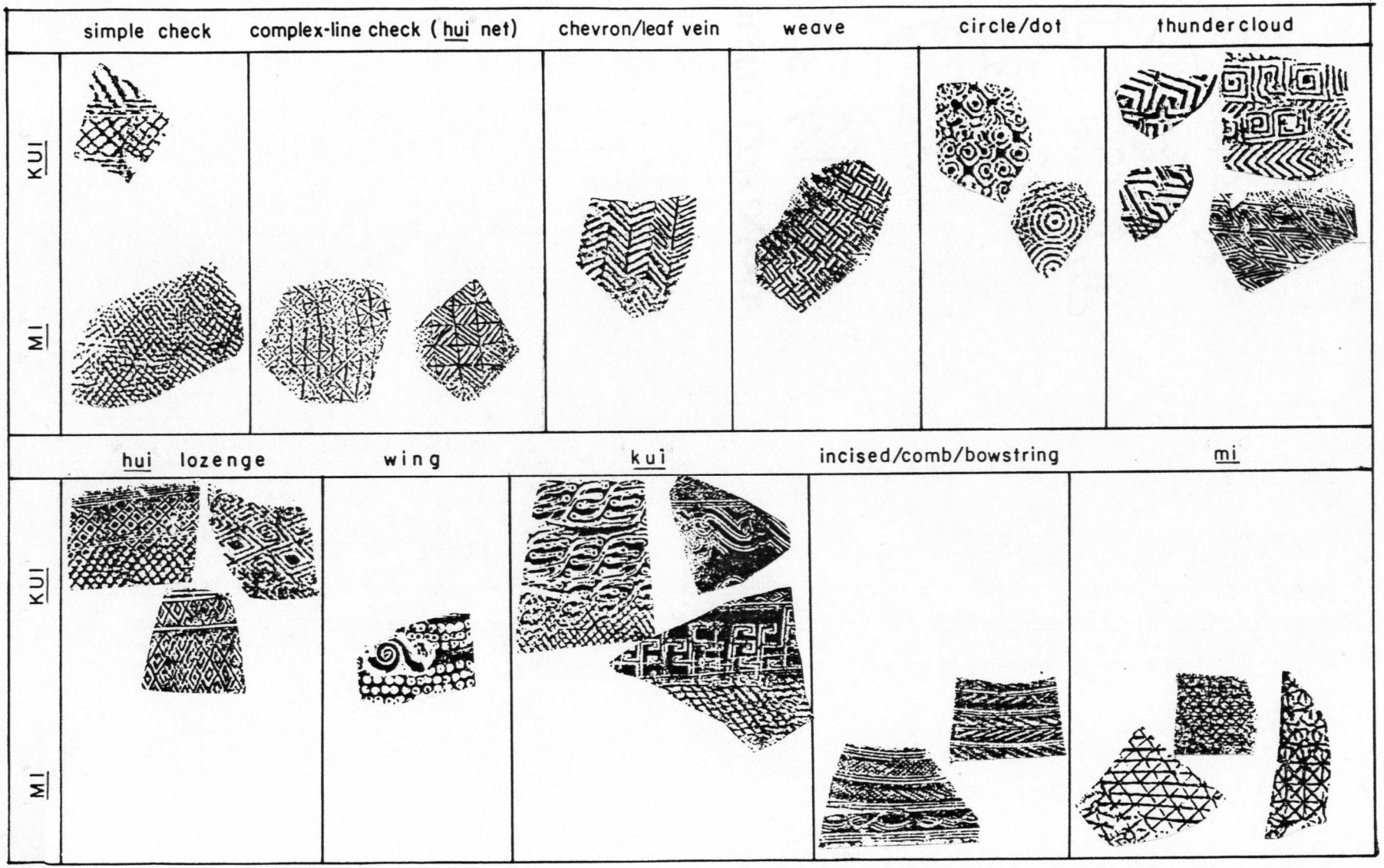


FIGURE 3.2b: Geometric ceramic surface patterns, Guangxi Province

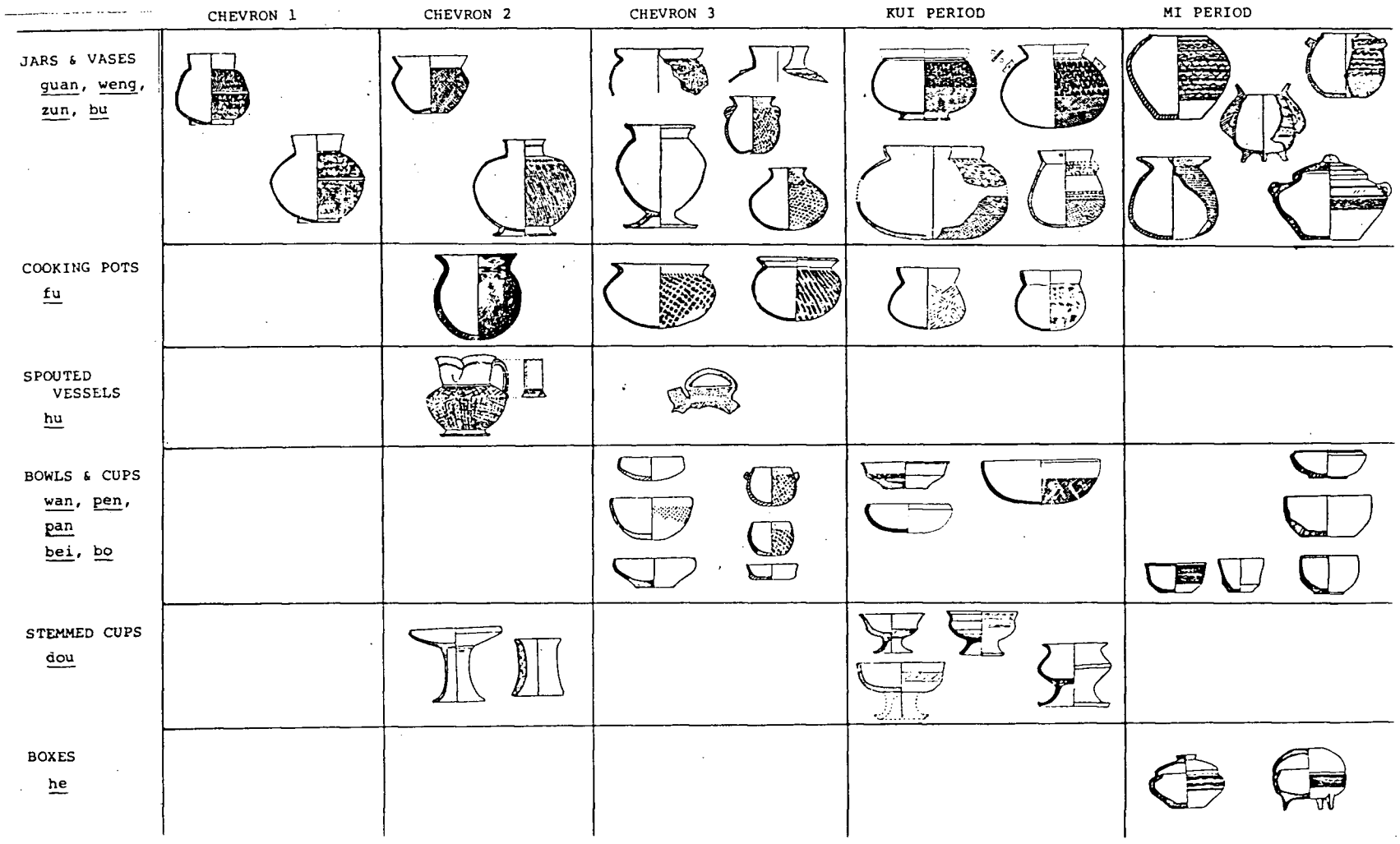


FIGURE 3.3: Representative ceramic vessel forms of the Geometric Period

Associated artifacts include a variety of polished and partly-polished stone tools and ornaments, as well as similar artifacts in bone and shell.

Two radiocarbon dates on charcoal samples from the Shixia site are relevant to this period (Table 3.4). BK-76024 and BK-75046 are from a pre-geometric Period 1 burial, and an early Geometric Period 3 burial respectively. The range of these dates falls between 3000 & 2600 B.C.[5] From these estimates the earliest phase of the Geometric Horizon in northern Guangdong is approximately 3000 to 2500 B.C..

The only other part of Lingnan where relevant radiocarbon data have been obtained is Hong Kong. Two dates on pre-geometric assemblages from there are older than 3000 B.C., only one (R4585/1) overlaps with the Shixia samples (Table 3.5). Its range is between 2750 and 2150 B.C..

3. Chevron Soft Pottery Stage (Chevron 2)

The chevron motif continues to be the most common of the geometric patterns in this period, but the simple check is replaced by a wide variety of "complex-line check" patterns (Figure 3.2). A number of terms have been used to denote the latter. Most writers use simple descriptions such as "triple-line check and dot" etc., but others also refer to them as

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[5] Approximate ranges have been calculated by adding one standard deviation to the midpoint of the calibrated date, and roundng off to the nearest 50 years. Original values, and precise calibrations are given in Table 2.4.

Site Name	Location	Sample Material	Associations	Date	Calibrated Date'	Sample #
Dianhuachang (Songshan)	Zhaoqing Shi (West River)	wood	late Warring States period tomb	2570±75 bp	620±75 BC	ZK-210
Dongkengnan	Haifeng Xian (East Coast)	charcoal	from underneath baked clay "stove" feature, with hard net-stamped pottery	3039±400 bp	1231±401 BC	Lamont 188C-I
Hedang	Lanshi Foshan Shi (Central Region)	shell	bottom of grave M1. Sample is from Layer 3	5020±100 bp	3682±135 BC	ZK-526-I
		shell	bottom of grave M11. Sample is from Layer 3	4910±100 bp	3555±135 BC	ZK-527-I
		shell	bottom of grave M12. Sample is from Layer 3	4955±100 bp	3606±135 BC	ZK-528-I
		shell	from ash pit, with soft geometric pottery & polished stone tools. Layer 3	4905±150 bp	3552±175 BC	ZK-546-I
		bone	from grave M1. Layer 2	3605±100 bp	1950±164 BC	ZK-547-0
		bone	from grave M12. Layer 2	3840±120 bp	2248±164 BC	ZK-548-0
		charcoal	from hard burnt earth surface. T2 Layer 2	4100±80 bp	2576±123 BC	ZK-647
Jinlansi	Houshangang Zengcheng Xian (East River)	shell	from midden, with soft geometric pottery; stepped & shouldered adzes	4035±95 bp	2494±145 BC	ZK-103
Maogangcun	Gaoyao Xian (West River)	carbonized wood	Area A, T2, Layer 3 with stone adzes, bone tools, & geometric pottery	4070±100 bp	2539±137 BC	ZK-707
		wood	Area B, T1, Layer 3 with stone adzes, bone tools, & geometric pottery	4265±90 bp	2783±136 BC	ZK-708
		wood	(as above)	4290±100 bp	2814±143 BC	ZK-710

TABLE 3.4: Guangdong: radiocarbon dates on Geometric sites

Site Name	Location	Sample Material	Associations	Date	Calibrated Date[1]	Sample #
Shakengnan	Haifeng Xian (East Coast)	shell	from midden, with cord and net-impressed pottery and polished stone tools.	3219±150 bp	1459±160 BC	Lamont -201A
Shixia	Maba, Qujiang Xian (Northern Region)	charcoal	from grave M43 (Period 3)	4330±90 bp	2863±136 BC	BK-75046
		charcoal	from grave M79 (Period 1)	4220±110 bp	2727±150 BC	BK-76024
		charcoal	from grave M26 (Period 4)	4020±100 bp	2471±137 BC	BK-75050
Xiqiaoshan Locality 7	Nanhai Xian (Central Region)	shell	Layer 2	5050±100 bp	3713±135 BC	ZK-543-1
		shell	Layer 3	5470±100 bp	4175±162 BC	ZK-544-1
Zaogang	Nanhai Xian (Central Region)	shell	Layer 3, with soft & hard geometric pottery.	5405±120 bp	4103±175 BC	ZK-545-I

[1] Calibration system = Damon et al. 1974

TABLE 3.4 (continued)

Site Name	Location	Sample Material	Associations	Date	Calibrated Date[1]	Sample #
Chung Hom Wan	Hongkong Island	charcoal	Middle Neolithic assemblage	4570±130 bp	3156±115 BC	I-8827
Hai Dei Wan	Lantau Island	charcoal	Middle Neolithic assemblage	5100±100 bp	3773±146 BC	HAR-2522
		charcoal	mixed Late Neolithic/Early Bronze Age assemblage	3360±80 bp	1636±91 BC	HAR-3589
		charcoal	(as above)	3200±160 bp	1434±169 BC	ANU-2223
Po Yue Wan	Cheung Chau	shell	Late Neolithic assemblage	3740±80 bp	2121±153 BC	HAR-4697
		shell	(as above)	3780±70 bp	2172±148 BC	HAR-4698
		shell	(as above)	3730±70 bp	2108±148 BC	HAR-4700
		shell	(as above)	3680±70 bp	2044±148 BC	HAR-4699
Sham Wan	Lamma Island	charcoal	Middle Neolithic assemblage	4000±300 bp	2450±314 BC	R-4585/1
		shell	Late Neolithic assemblage	3830±95 bp	2235±161 BC	I-10057b
		shell	(as above)	3740±95 bp	2121±161 BC	I-10057a
		shell	(as above)	3110±95 bp	1320±110 BC	I-10056
		shell	Late Bronze Age assemblage	2485±85 bp	557±93 BC*	I-9954
Shek Pik	Lantau Island	charcoal	Late Neolithic assemblage	3270±90 bp	1522±106 BC	ANU-2222

[1] Calibration system used = Damon et al. 1974

TABLE 3.5: Hong Kong: radiocarbon dates on prehistoric sites

"lattice", "composite net" (Meacham [ed] 1978, Maglioni 1975). Judging by the illustrations, all such terms simply refer to varieties of the complex-line check.

New motifs include the thundercloud and the 's'-shaped pattern. Combination of more than one geometric motif on a single vessel, zoned either in bands, or on different portions of the vessel body, appears first during this period, albeit in minor proportions: at Shixia, such "group patterns" constitute only 1.6% of the total geometric pottery assemblage. The arrangement of individual impressions is more orderly than in the previous period.

In addition to the ring-footed, round-bottomed forms of the preceding period, rounded indented bases become very common. An angular break at the shoulder is a second identifying characteristic of vessel form in this and the following period. A small proportion of coarse-tempered cooking pots begin to be decorated with stamped geometric patterns such as the chevron. Interestingly, Meacham has stated that in Hong Kong the geometric-stamping of coarse ware vessels does not begin there before the Early Bronze Age (1982:78-79). It is thus possible that the coarse wares are more variable at a sub-regional scale than are the finer wares. Associated artifacts show no significant changes from the preceding period.

The radiocarbon data for this period are quite abundant, however in the opinion of the Chinese archaeologists concerned, there are serious difficulties with many of the dates obtained. The only two dates accepted by the Chinese are one from a Period

4 (middle layer) grave at Shixia, and one from the middle layer of the Jinlansi site. Both fall between 2600 and 2300 B.C., and are in accord with the dates obtained for the previous period, as well as with dates from similar assemblages in Hong Kong. The latter date between 2400 & 1900 B.C. (Po Yue Wan; Sham Wan) and 1600 - 1400 B.C. (Shek Pik). On the basis of these data, the Chevron soft pottery period extends roughly between 2600 & 1200 B.C..

The rejected dates are from 3 sites: Hedang (Layer 3), Zaogang, and Xiqiaoshan, Locality 7 (Zhentou). The assemblage from Layer 3 of Hedang is typologically slightly later than the middle layers of Shixia and Jinlansi, however, the four dates obtained from this layer all fall between 3800 and 3400 B.C. - more than 1000 years earlier than the latter two sites. Zaogang is typologically slightly earlier than Hedang layer 3, and its single dated sample produced a figure of pre-4000 B.C.. Xiqiaoshan is a slightly different problem. The dated assemblage contains only a single geometric (chevron) impressed sherd, but is estimated to be roughly equivalent to Hedang and Zaogang on the basis of similarities in the microlithic artifacts present at all three. Its date falls within the same range as the other sites.

I have raised this issue in detail because there are some similarities between these data that are worth commenting on. All of the sites concerned are located in the Pearl Delta region, and all the erroneous samples were shell. Charcoal and bone samples from the Hedang site are believed to have yielded

reliable estimates. Similar problems with distortion of radiocarbon dates on marine shell have been discussed by Robinson and Thompson (1981) with reference to the western coast of North America. On this side of the Pacific marine shell has been found to yield radiocarbon estimates between 700 and 800 years too old as compared with other dated materials because of the distorting factor of dissolved marine bicarbonate. It seems that the same factor is probably responsible for the problems with the Chinese dates, however because the degree of distortion varies in different regions further tests are required to determine the correction neccesary for the Chinese materials.

4. Chevron, Soft - Hard Pottery Transition (Chevron 3)

In terms of surface patterning the ceramics of this period are little changed from the previous one, as the detailed tabulation of the Hedang ceramics in Table 3.6 indicates. It is possible that at the end of this period the chevron motif declines in popularity, but the only evidence for this comes from the specialized kiln site at Shuikou on the northern periphery of Lingnan, which may not be representative of general habitation sites, or of the Lingnan region as a whole.

The identifying feature of the ceramics of this period is the coexistence of soft and hard pottery, and the gradual increase in the prevalence of the latter. Minute quantities of glazed vessels begin to appear also during this period. Vessel forms are generally consistent with the preceding period.

The first evidence of bronze use and bronze casting is found in association with some of these 'transitional' ceramic

Fabric	Surface Patterning	LAYER 3 N	% of type	Totals: N	%	LAYER 2 N	% of type	Totals: N	%
COARSE SANDY	cord impressed	658	24.06			423	29.27		
	line	37	1.35			---	---		
	weave	54	1.97			13	0.9		
	incised	48	1.75			24	1.66		
	applique ridge	28	1.02			5	0.35		
	chevron	421	15.39			319	22.08		
	large check	490	17.91			196	13.56		
	thundercloud & chevron	102	3.73	2735	25.8	55	3.81	1445	21.08
	leaf vein	152	5.56			27	1.87		
	complex-line check & boss	56	2.05			23	1.59		
	bowstring	11	0.4			---	---		
	ladder-shaped check	22	0.8			31	2.15		
	fish scale	3	0.11			2	0.14		
	protruding dot, & dot	2	0.07			9	0.62		
	unclear; plain rim & foot sherds	651	23.8			318	22.01		
FINE — Soft Impressed	line	129	3.42			60	1.53		
	weave	57	1.51			30	0.77		
	applique ridge	18	0.48			13	0.33		
	carved hole	10	0.26			---	---		
	chevron	1321	35.02			1439	38.06		
	thundercloud & chevron	322	8.55			340	8.68		
	check	184	4.88	3772	35.58	87	2.22	3917	57.15
	ladder-shaped check	41	1.14			20	0.51		
	leaf vein	123	3.17			35	0.89		
	fish scale	12	0.32			20	0.51		
	bowstring	5	0.13			---	---		
	unclear, plain rim, shoulder & foot	1550	41.09			1821	46.46		
FINE — Hard Impressed	line	226	8.93			65	6.67		
	weave impressed	24	0.95			15	1.54		
	incised	23	0.91			2	0.21		
	applique ridge	52	2.06			13	1.32		
	carved hole	6	0.24			---	---		
	chevron	895	35.38			355	36.45		
	thundercloud & chevron	140	5.53	2530	23.87	88	9.03	974	14.21
	small check	141	5.57			38	3.90		
	ladder-shaped check	152	6.01			26	2.67		
	double leaf	24	0.95			2	0.21		
	leaf vein & weave	147	5.81			26	2.67		
	dot & circle	13	0.51			---	---		
	complex-line check & boss	9	0.36			5	0.51		
	fish scale	11	0.43			6	0.62		
	bowstring	18	0.71			---	---		
	unclear; plain rim, shoulder & foot	649	25.65			333	34.19		
FINE — Burnished	plain	1552	98.64	1543	14.56	506	98.83	512	7.47
	carved hole	21	1.35			6	1.17		
FINE — Painted	line painting	14	70.0	20	0.19	4	66.67	6	0.09
	slip coating	6	30.0			2	33.33		
				n=10,600				n=6854	

TABLE 3.6: Detailed tabulation of ceramics unearthed from the Hedang site (Yang and Chen 1981:243)

assemblages. The artifacts and casting moulds represent small tools and weapons such as axes and daggers (Meacham ed. 1977, Maglioni 1975). Polished stone tools of previous types are still commonly found.

Three samples from the upper layer of the Hedang site have been dated to between 2700 and 1800 B.C., and are associated with cultural remains typical of the early part of this Period. No evidence of bronze has been found at Hedang. Two sites in Haifeng county which were tested by Maglioni in the 1940's have produced 2 dates in the 1600-800 B.C. and 1600-1300 B.C. range. No evidence of bronze was found at either of these sites, but the high proportion of hard pottery indicates they fall into the later part of this period. The Hai Dei Wan site in Hong Kong has given 2 dates between 1700 & 1200 B.C.. A bronze axe and spear point were unearthed from this site, but it is not clear whether they are associated with the dated samples or with the Kui Period remains which are also represented at this site (Williams 1979). Therefore, as yet no definite bronze-producing deposits of this period have been dated by absolute methods. The dates on hand for this period range between 2700 and 800 B.C., overlapping considerably with the dates of the previous period, a matter which needs to be clarified by future work.

5. Kui Period, Hard Geometric

The identifying ceramic trait of this period throughout most of the geometric pottery area of Lingnan is the kui (夔) or "double-f" motif, in its many varieties.[6] The kui motif is not found in the Southern Guangdong region, and in Guangxi it is restricted to the northeastern river valleys lying between the Xijiang and the Hunan border. In southeastern Guangxi and southern Guangdong the geometric ceramics display all the other characteristic features found in the rest of the area (Figures 3.2 & 3.3). The transition to higher firing temperatures, and therefore hard pottery, is completed by this period, although the occasional soft pottery vessel is found in both Kui and Mi Period sites. Glazed pottery is still found in very minute proportions.

On finewares zoned group patterning continues to dominate. The more intricate motifs such as the kui and lozenge are characteristically confined to the shoulder areas, with plainer net and check patterns covering the lower part of the vessel.

Coarse wares are also commonly impressed with geometric patterns; however, in contrast to the finewares, usually only a single motif is applied to a vessel, the impressions are larger and coarser, and the kui is never applied.

There are two major changes in vessel form: the angled shoulder and indented base are no longer found, and flat based jars appear in their place.

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[6] Xu (1981) defines 5; the Guangxi Cultural Properties Brigade (1981) only 2, rounded and angular forms.

Polished stone tools continue to be found in Kui Period contexts, but are reduced in numbers. Bronze artifacts and casting remains, on the other hand, have been found in many of this period's sites. Elaborate burials containing quantities of bronze artifacts appear first during this period. Such burials all contain at least one local Geometric pottery vessel, and the weapons and tools are stylistically similar to those found in habitation contexts; hence, even in the absence of absolute dates they can be securely dated to the Kui Period (He 1981:217).

Radiocarbon data have not been used by Chinese archaeologists to date this period, rather they have relied upon comparisons between the stylistic traits of the ceramics and bronzes and those from dated contexts in more northerly regions (eg. He 1981). The initial appearance of kui impressed pottery has been placed in late Western Zhou (Guangdong Provincial Museum 1984:209; Guangxi Cultural Properties Brigade 1981) to mid Spring & Autumn (Xu 1981), or circa 1000 to 700 B.C., and its disappearance to the end of the Spring & Autumn period, or early Warring States - circa 500-400 B.C.. A single radiocarbon date from the Kui Period layer at the Sham Wan site in Hong Kong lies between 450 and 650 B.C., within the boundaries ascribed by the Chinese.

6. Mi Period, Hard Geometric

This final phase of the prehistoric Geometric Horizon in Lingnan is defined by the predominance of mi (米) and check-impressed pottery among the geometric ceramics, the decline in overall proportion of geometric-impressed pottery, and the virtual disappearance of group patterning. The mi motif is found in minor proportions at the end of the Kui Period, often in combination with the kui motif, but replaces the kui altogether at a time corresponding to the early or middle Warring States. The second most common group of surface patterns of this period are incised wave, comb or bowstring lines, which frequently appear to have been applied during wheel manufacture of the vessels.

The proportion of geometric impressed vessels in the total ceramic assemblage is still high early in the Mi Period, but appears to decline towards the end. At Xigualing, which is dated typologically to early in this period, geometric impressed pottery makes up over 83% of the total, while at Baishipingshan, which is typologically late, it is less than 65% (Table 3). Plain, particularly glazed, vessels increase overall: the latter from 0.09% at Xigualing, to 5.14% at Baishipingshan (C.P.A.M. Guangdong et al. 1964b:151). Geometric group patterns at these two sites are represented on only 0.29% and 2.36% of vessels in the assemblages.

The absolute number of distinct vessel forms increases, and some previously-existing types become more elaborate with

various added handles, spouts, and lids during this period.

The most important chronological marker in other artifacts is the appearance of iron artifacts. Only two have been found in non-burial contexts: an axe, and iron-tipped hoe from Baishipingshan, and an iron-bladed dagger from Jinlansi. Iron is found in association with bronze through to the end of the prehistoric in Lingnan. At excavated habitation sites the only stone tools unearthed have been hammerstones, whetstones, mortars and the like, while only whetstones have been unearthed from burial contexts (C.P.A.M. Guangdong et al. 1964b, Mo 1961, Table 5.5).

The sole radiocarbon date on an undisputed mi pottery site is on a sample of wood from the Zhaoqing tomb, which is estimated on typological grounds to belong to the very end of the Warring States period (Guangdong Provincial Museum et al. 1974). The date of 620±75 B.C. is, however, several hundred years earlier than the sylistic affinities indicate.

A series of dates from the Maogangcun site, falling between 2400 & 2950 B.C., has been rejected by some Chinese archaeologists, who believe the site deposits belong to the Warring States period. The illustrated ceramic patterns from the site must be very early Mi Period, if not earlier, and it is possible that the dates relate to an earlier yet-unidentified component, and not directly to the excavated remains. This issue is, however, not yet agreed upon among the excavators themselves (Guangdong Provincial Museum et al. 1983:41).

As was the case in the preceding period, the Chinese

archaeologists rely on stylistic comparisons to date Mi Period assemblages: comparisons are made both with the neighbouring Chu State, and with remains of the following Qin and Han periods from within Lingnan. The beginnings of the Mi Period are accordingly placed at either the beginning or middle of the Warring States Period, and the end to the Qin invasion - circa 5/400 to 220 B.C..

C. DISCUSSION OF THE TEMPORAL DISTRIBUTION OF LINGNAN GEOMETRIC SITES

Archaeologists in both China and Hong Kong have, in the past, directed their attention in excavation primarily to defining the temporal aspects of the prehistoric cultures in their respective areas, yet to date, the outlines are still tentative. The biggest drawback for both relative and absolute dating, is the restriction of excavated sites to the Northern and Central regions of Guangdong (Figure 3.4). Better definition of the chronological sequence in peripheral areas of the Lingnan Geometric Horizon needs to be an important priority in future research.

The most detailed information from Chinese sources regarding the temporal distribution of Geometric sites within Lingnan is given by He (1981:218). He breaks down the prehistoric Horizon into only three periods (Table 3.1), his first period being equal to the first three Chevron periods I have detailed above. His figures are all extrapolations from 1962 data. According to his estimates, approximately 310 (50%) Chevron Period, 200 (32%) Kui Period and more than 102 (18%) Mi

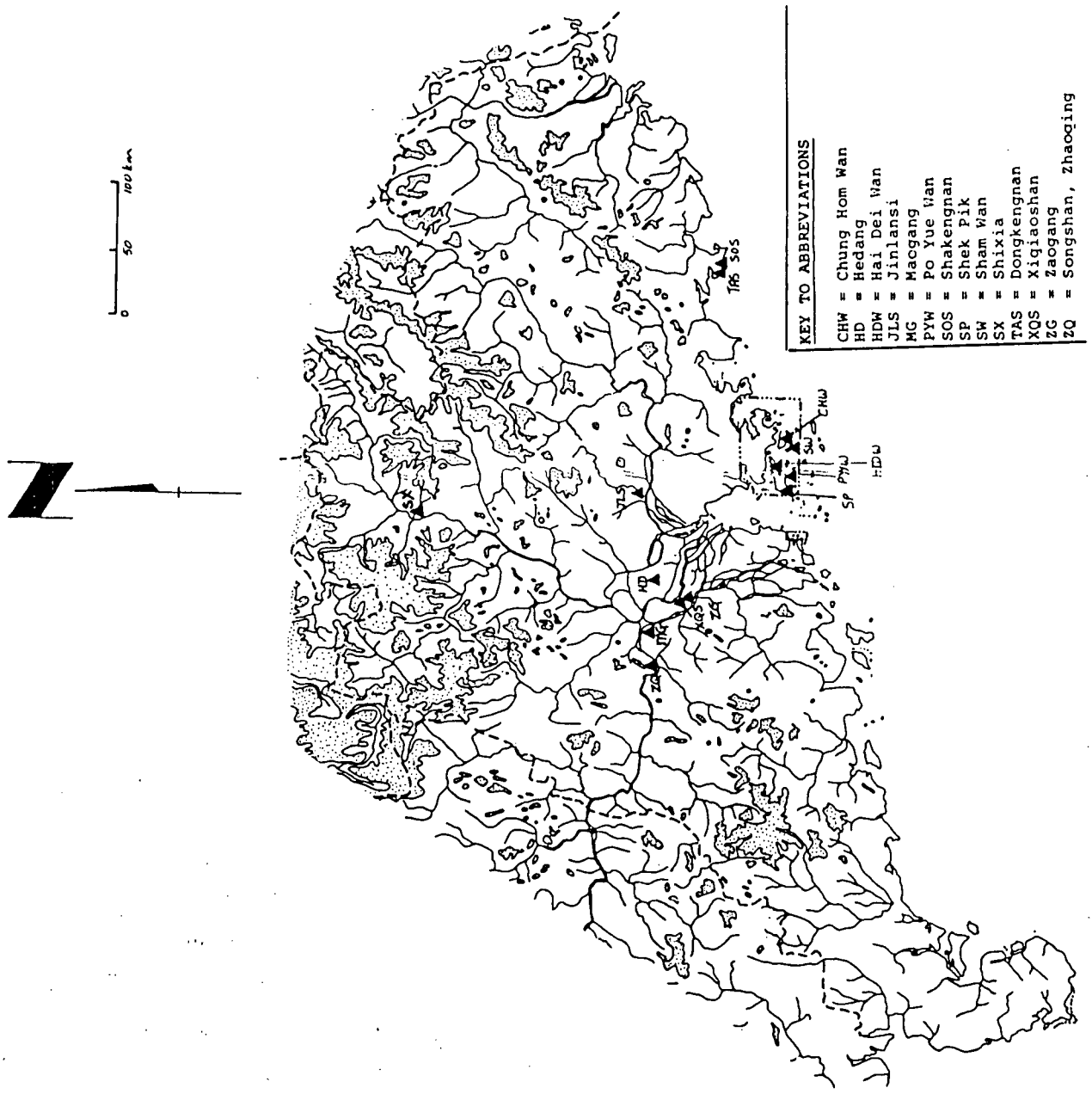


FIGURE 3.4: Location of radiocarbon dated Geometric sites

Period sites have been identified in Guangdong. No similar estimates have been published with respect to the Guangxi sites, however, a rough estimate has been made based on the information contained in Appendix 2. Using the presence of kui or thundercloud patterned pottery to indicate Kui Period sites, and mi patterned pottery to indicate Mi Period sites (following Guangxi Cultural Properties Brigade 1981), proportions of approximately 40% Kui and 60% Mi Period sites are obtained, with approximately 10% of sites containing both.

In Table 3.7 I have summarized the main chronological indicators among the artifact remains, as discussed above. I attempted to use this information in conjunction with data from recorded Geometric sites in Guangdong and Guangxi to better delineate the temporal breakdown and areal distribution of geometric sites throughout the prehistoric period. Unfortunately the published data proved inadequate for this purpose. At the time that the survey data were gathered and published the only recognized distinction in the Geometric Horizon was between soft and hard pottery, thus data relevant to the finer subdivisions used in this study were generally not reported. Resolution of this question, as well as others dealing with site distributions requires access to primary survey data, and thus cannot be apprached at present.

CERAMICS		
a. Fabric	Soft	Chevron 1 & 2
	Soft & hard	Chevron 3
	Hard & occasional soft	Kui - Mi
b. Surface decoration	kui motif	Kui
	mi motif	late Kui - Mi
	thundercloud motif	Chevron 2 - early Mi
	lozenge/hui motif	Kui - early Mi
	group patterns (few)	Chevron 2; Mi
	(many)	Chevron 3 - Kui
	glaze	late Chevron 3 - Mi
	wheel-applied decoration	Mi
c. Form	angled shoulder	Chevron 2 & 3
	indented base	Chevron 2 & 3
	flat base	Kui - Mi
	wheel-manufactured large jars	Mi
METAL	bronze	late Chevron 3 - Mi
	iron	late Mi
STONE	ge dagger-axe	late Chevron 3 - early Kui

TABLE 3.7 : Artifact traits with defined temporal significance.

IV. ENVIRONMENT AND SUBSISTENCE

A. PHYSIOGRAPHIC FEATURES AND PALEOENVIRONMENT

1. Topography

Lingnan, literally "south of the (Wuling or Nanling) range" is the common name for the region which includes modern Guangdong and Guangxi Provinces (Figure 1.1). Although the Wuling mountains are not high in absolute terms they do form a significant barrier between the drainage areas of the West River (Xijiang) and the Yangtze (Changjiang). They also lend a measure of physiographic and climatic unity to the Guangdong/Guangxi area which the term 'Lingnan' reflects. In addition to the northern boundary of the Wuling mountains and the southern boundary of the South China Sea, Lingnan is also bounded to the east and west by areas of greater uplift. The Fujian Massif in the northeast is an extremely rugged granitic formation which permits no easy north-south passage, thus effectively cuts off Guangdong from the lower Yangtze region. The Guizhou Plateau whose foothills extend into the western third of Guangxi forms the southwestern boundary of Lingnan (Figure 4.1).

A single major river system, which empties to the sea through the Pearl Delta of central Guangdong, drains most of Lingnan. The main branch is the West River (Xijiang) which passes through western Guangdong and Guangxi to the Guizhou Plateau and Yunnan Province. The two other main branches, the East (Dongjiang) and North Rivers (Beijiang) and their

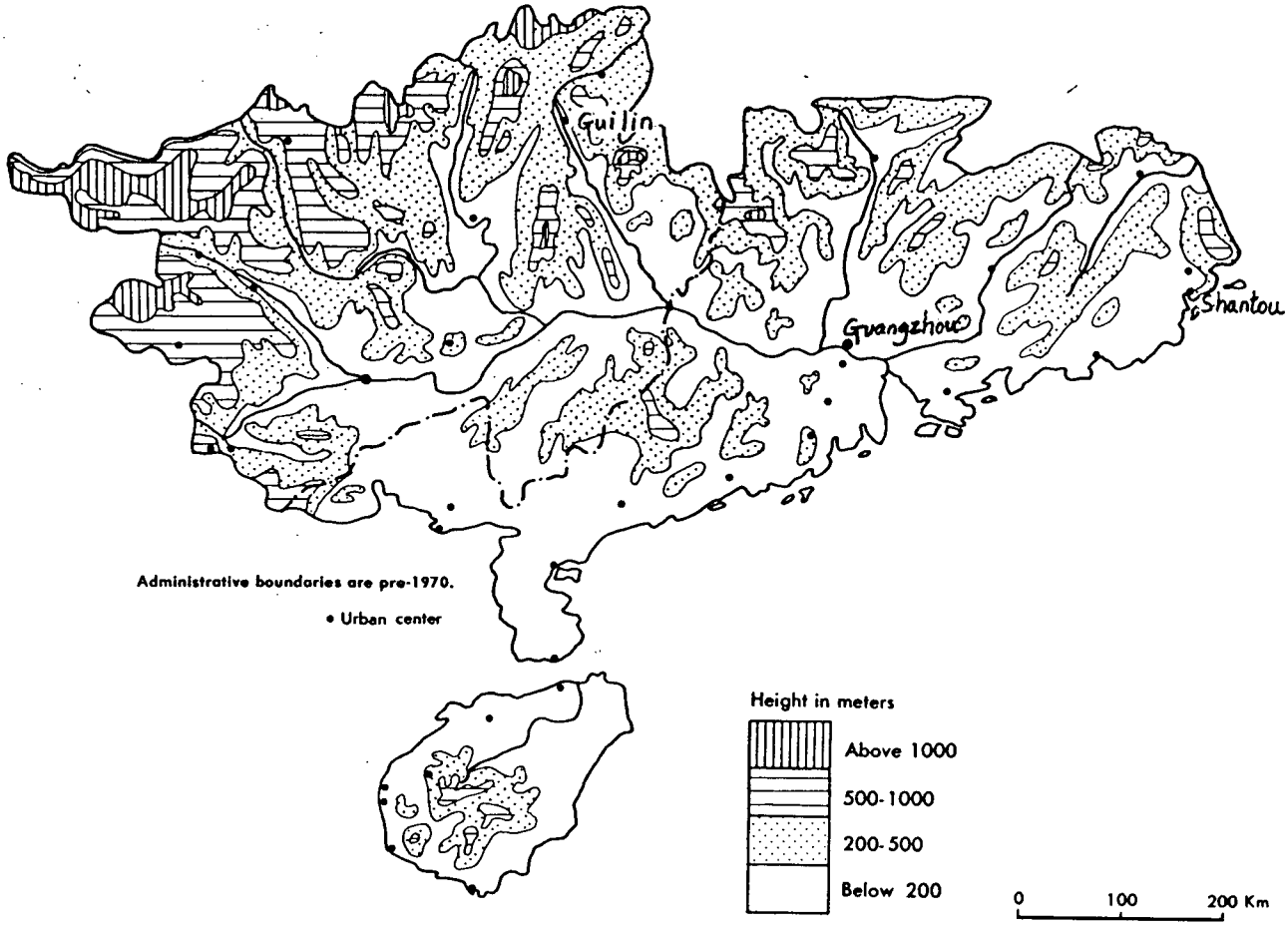


FIGURE 4.1: Guangdong and Guangxi Provinces: relief (Hsieh 1973:164)

tributaries drain most of interior Guangdong south of the Wuling, except for the far northeastern area. The only major river system which is not part of this network is the Han River in the far northeast of Guangdong, although all along the seacoast other minor rivers flow short distances directly into the sea (Figure 4.2).

Although the rivers are quite fast-flowing, most are navigable by relatively large craft and provide the major communication/transportation routes throughout Lingnan even today (Tregear 1980:304).

The general relief of Lingnan is very steep; river valleys are narrow and valley bottom lands are subject to seasonal flooding. There are only two major alluvial plains, located at the mouths of the Pearl and Han Rivers. Both deltas have only been forming since the stabilization of sea levels approximately 6-7,000 years ago (Huang et al. 1979:290-291); both the outer margins and the location of internal chanels are unstable, and defining their boundaries during the late prehistoric period is difficult. The coastline is steep and indented with many small sheltered harbours. The one point of contrast to this general picture is the low-lying Leizhou Peninsula at the southern tip of the Guangdong mainland.

2. Climate

The Tropic of Cancer crosses through central Lingnan. This location, combined with the sheltering effect of the Wuling results in the maintenence of a subtropical (in the northern highlands) to tropical (in the south) climate in Lingnan all

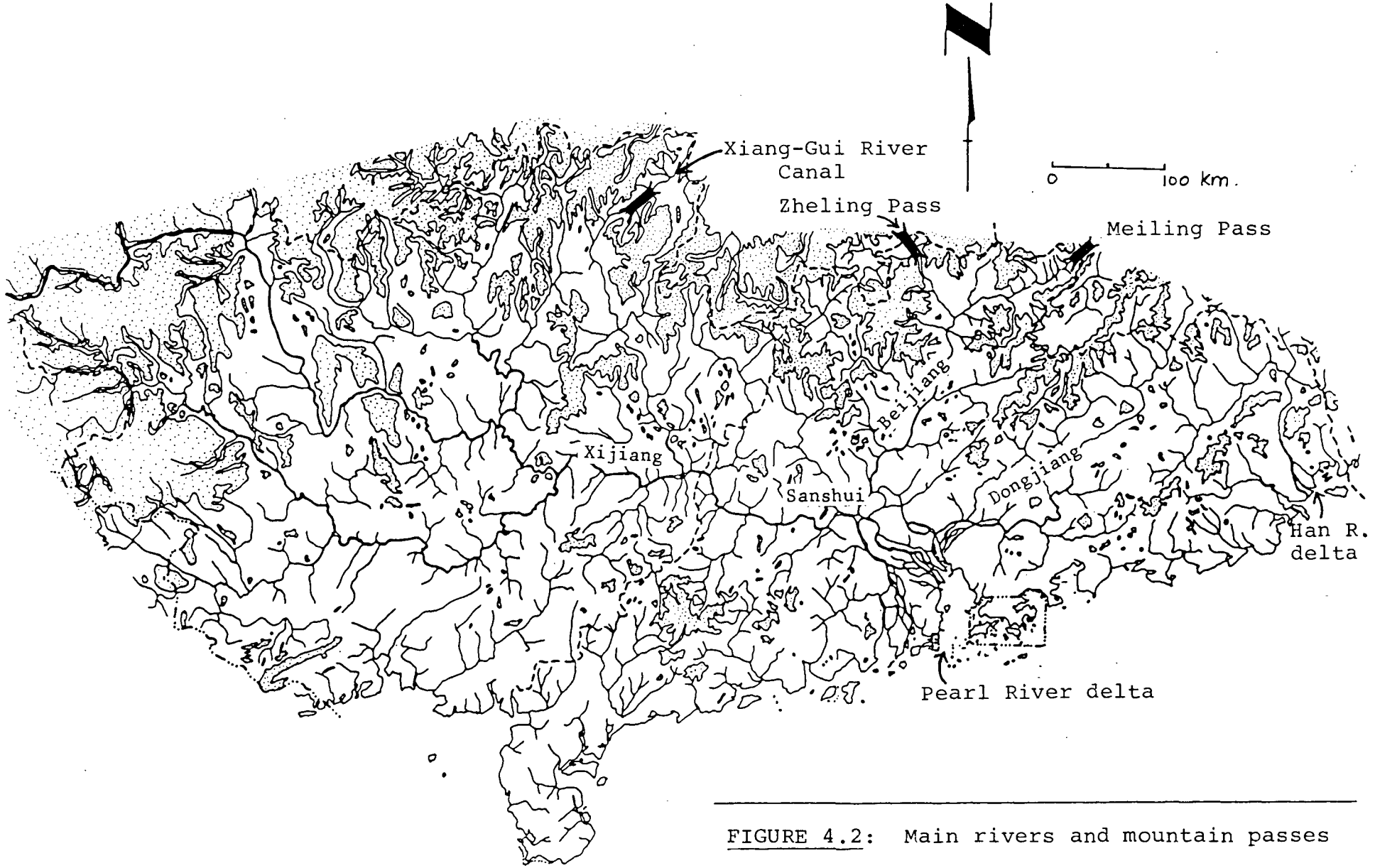


FIGURE 4.2: Main rivers and mountain passes

year. Consequently there is a year-long growing season. There are however marked seasonal fluctuations in rainfall and minor fluctuations in temperature. Summers are hot and humid thanks

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
Guilin													
Temp °C	9·0	6·8	9·6	12·3	18·2	22·1	26·8	28·5	27·6	25·9	22·3	15·5	
Rainfall mm	41	102	109	239	358	417	203	178	76	66	53	41	1883
Guangzhou													
Temp °C	13·3	13·9	17·2	21·7	26·7	27·2	28·3	26·7	23·9	19·4	15·6		
Rainfall mm	23	48	107	173	269	269	205	219	165	86	31	23	1618
Shantou (40 m)													
Temp °C	15·0	13·9	16·7	21·1	25·0	27·8	28·9	28·3	27·8	24·4	20·0	16·7	
Rainfall mm	36	63	79	145	229	267	198	213	142	71	41	38	1522

TABLE 4.1 : Annual temperature and rainfall figures at Guilin, Guangzhou and Shantou. (Tregear 1980:303,306).

to the summer monsoon from the South China Sea, and winters are cool and dry due to the prevalence of winds from the northern interior of Asia. The Wuling modify the effects of the winter monsoon however, and frost only occurs on the highest peaks (Tregear 1980:24).

3. Vegetation And Soils

The contemporary vegetation of most of Lingnan has been greatly impacted by man over the past 2,000 years. It is therefore not reflective of the prehistoric environment. Reconstruction of paleovegetational patterns has relied on three lines of evidence: soils, climate, and remnant areas of original forest (Wang 1961:7-24). Only the main outlines of the paleovegetation of Lingnan have been reconstructed. The natural vegetation was

a dense subtropical to tropical evergreen broadleaf forest. In northern and highland areas the main constituents of the forest were evergreen oak and laurel. Rainforest vegetation occurred in more southerly and low-lying regions, and littoral forests held along the coastline. In very low-lying and sheltered coastal zones of high deposition extensive mangrove formations were common (Wang 1961:129-30; 142-145; 165-168, Hsieh 1973 Map I-45).

The predominant soils of the hilly areas are 'old red earths'. These soils are thin, fragile and acidic, and suject to laterization and rapid loss of fertility after only one or two years under cultivation (Buck 1937:151). Because of the seasonally high rainfall and the steep relief these soils are easily eroded when stripped of the natural forest cover, hence the present barren and eroded aspect of much of interior Lingnan (Tregear 1980:28-31). Relatively more fertile non-calcareous alluvium is found only in restricted areas along valley-bottoms and river deltas. These soils are amenable to continuous cultivation as long as the effects of leaching are compensated for by constant fertilization (Buck 1937:143).

B. IMPLICATIONS FOR PREHISTORIC SUBSISTENCE AND SETTLEMENT

The general topographic and vegetational patterns limit habitation primarily to river valleys and the low fringing hills, except in the central lowlands around the Pearl River delta and the delta of the Han River. Along the coastline the numerous bays and small estuaries also provide areas for

habitation.

The general patterning of prehistoric sites, as reported by the Chinese, is in accord with this expected pattern. The majority of sites of the early Geometric are found on lower hillslopes and hilltops fringing the rivers, and on low hills and sanddunes along the coast. It is not possible at present to ascertain whether there are differences between the various periods of the Geometric in terms of site location with respect to cultivable land. No detailed topographic or soils maps are currently available, and published locational information is not very specific. However He (1981:221) has noted with respect to the Pearl Delta area that during the Kui and Mi Periods shellmound sites, which are common site-types in the Late Neolithic, decline markedly in frequency. This change he attributes to a shift in subsistence patterns from a broadly-based primarily food-gathering strategy to more intensive agriculture.

Specific archaeological evidence for subsistence practices is very thin. The Chinese have relied on inferred functional tool types as their primary source of evidence, supplemented (especially in more recent reports) by plant and animal macrofossils. Very detailed investigations of subsistence have been initiated at a few sites in the lower Yangtze area for example, which rely on more detailed data such as pollen analysis (Wang et al. 1980, Sun et al. 1981), however these techniques have not as yet been reported for archaeological investigations in Lingnan. The use of additional techniques

such as flotation for recovering microfossil remains would be invaluable to reconstructing the details of site environments and subsistence behaviour. Residue and use-wear analyses might also be profitably applied to testing the inferred functions of tools. For the present I shall just consider the evidence that is available.

Prior to the appearance of iron agricultural tools in the later Mi Period there is little evidence of intensive agricultural practices. Tool assemblages recovered from most earlier Geometric sites are a mixture of hunting, woodworking, and chopper-type implements which have been inferred to be hoes when recovered from inland sites, and "oyster picks" in coastal sites (C.P.A.M. Guangdong et al. 1964a, Guangdong Provincial Museum 1961:647). Processing tools such as mortars, pestles and knives are also commonly recovered items.

The faunal and floral remains recovered from excavated sites seem to indicate a mixed food-gathering, animal-raising, hunting and horticultural strategy. Remains of domestic pig and dog occur in most faunal lists, along with deer (various species), wild boar, cattle and elephant. In deltaic sites alligator and turtle occur, along with various species of fish and shellfish (Huang et al. 1979:290-291. Guangdong Provincial Museum et al. 1983, Yang and Chen 1981:242). Coastal sites, at least in Hong Kong, contain mainly fish and shellfish remains, along with deer, pig and dog (Williams 1980, Meacham, ed. 1978).

Floral remains are primarily nuts such as walnut and

gingko, and fruits such as jujube, dates, olives, and persimmon (Guangdong Provincial Museum et al. 1978,1983). These kinds of remains however have been recovered from so few sites that it is difficult to generalize about wild plant utilization.

Since the normal cultivation system of a tropical area such as this is dependent on root- rather than seed-crops, physical evidence of tropical crops tends not to be preserved in the archaeological record (Harris 1972). On analogy with tropical agricultural systems elsewhere we might expect that at most sites non-intensive cultivation of a variety of root-crops was practiced (Geertz 1963:15-28). This general picture accords with the general lack of specialized cultivation tools and the indications of the use of a broad spectrum of wild resources at most Geometric sites.

There is some evidence of rice cultivation in the immediate pre-geometric and early Geometric Periods. Remains of cultivated rice have been recovered from the Shixia and Niling sites in northern Guangdong from this time (Guangdong Provincial Museum et al. 1979:327), and relatively sophisticated agricultural tools (spades and picks) of styles found in the central and lower Yangtze regions were recovered from associated burials at Shixia. According to investigators, such tools were associated with male burials, and this has led them to infer that agriculture was well developed and quite intensive. Some degree of continued reliance on wild products is also indicated by the presence of wild fruit and nut remains (Guangdong Provincial Museum et al. 1978:23). These sites provide the only

direct evidence of agriculture before the Mi Period, but the lack of such evidence from other areas of Lingnan may be simply a reflection of insufficient data recovery techniques in the past.

In summary, presently-available data from Lingnan geometric sites indicates that prior to the late Geometric subsistence was in general broadly based: a mixture of non-intensive cultivation and wild food gathering. The particular species exploited varied according to the major environmental zone: coastal, deltaic, estuarine, or interior riverine, but the mixed strategy was apparently common throughout the region.

The appearence of iron agricultural tools in the Mi Period, and the associated decline in shell midden deposits may, as He suggests, indicate a transition to more intensive agricultural practices in the later Geometric (see also Meacham 1980 for similar comments with reference to Hong Kong), but this is a topic that must await the accumulation of more data before it can be explored further.

C. IMPLICATIONS FOR PREHISTORIC COMMUNICATION PATTERNS

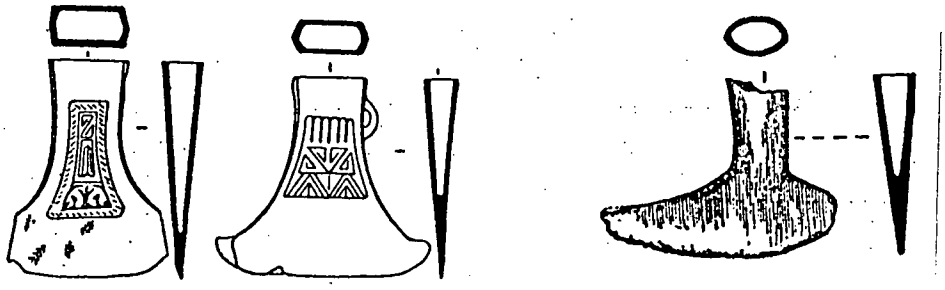
Prehistoric communication routes both within Lingnan and between Lingnan and neighbouring regions were strongly conditioned by topographic and environmental factors. As mentioned above, the heavy forest cover and steep relief of most of the interior limited communication routes to the river network. The abundance of sheltered anchorages along the coastline facilitated maritime communications. However, there are only

two main points of entry to the interior network from the coast: the Pearl and Han River deltas. The former gives access from the sea to the majority of inland Lingnan, and beyond to the southwestern region of China, while The Han River network covers the northeast corner of Guangdong and the Southwest extremity of Fujian Province (Figure 4.2).

Communication routes to neighbouring regions follow a small number of river routes because of the ruggedness of the borders of Lingnan. As was mentioned above, there is no overland access to the north through the coastal province of Fujian. The most direct route to the northern coastal zone was by sea.

Moving inland, the first major north-south route is the Gan River valley through the centre of Jiangxi. This was the major route between Guangdong and Peking in historic times (Tregear 1980:304). The main pass connecting the Gan with a branch of the North River is the Meiling pass. Both the Gan and North rivers are navigable up to their headwaters; a canal now passes through this route (Tregear 1980:301). Access to the Gan River can also be made from the Han River through southwest Fujian, as well as the East River, but these routes are more difficult (Rawski 1972:59-61).

A second branch of the North River leads to the Zheling pass through to a tributary of the Xiang River which is the main fiver flowing through central Hunan Province to the central Yangtze. The Zheling pass is currently the major rail and highway route between Guangdong and the central Yangtze (Tregear 1980:301).



a. yue axe

b. "boot-shaped" axe

FIGURE 4.3: Bronze yue and "boot-shaped" axes
(Guangdong Provincial Museum 1981;
Guangxi Cultural Properties Brigade 1978)

The third inland route between Lingnan and the north leads from the Gui River (which branches from the West River at Wuzhou) through to the headwaters of the Xiang in northeast Guangxi. This is currently the main route between Guangxi and the Yangtze region. The West River and some of its tributaries pass through western and central Guangxi leading to the Guizhou plateau and the Southwestern upland Region, as well as southwards into northern Vietnam. There are signs that all of these routes were well used in the prehistoric period. Among the bronzes of the Geometric area, for example, there are types such as the yue and "boot-shaped" axe which are clearly related to the bronze cultures of Southeast Asia and Southwest China (Figure 4.3). Others are related to the cultures of the central and lower Yangtze regions (Guangdong Provincial Museum 1979:329-330). From the initial historic period the overland routes from the Central Yangtze were heavily utilized, first by the invading Qin armies (Chen 1978:50), and later by colonists from north of the Wuling (Bielenstein 1948, Tregear 1980:45). The major status of the Xiang-Guijiang link in the initial (and probably the pre-) historic period is symbolized by the construction of a canal over this route immediately following the Qin invasion.

In Chapter V I shall discuss the archaeological evidence for the importance of each of these routes during the Geometric Period.

V. ANALYSIS OF DEVELOPMENTAL PATTERNS

A. OUTLINE OF CONCEPTUAL FRAMEWORK

The emergence of more complex forms of socio-political organization in the Geometric period correlates with technological advancements in both ceramics and metal working (Guangdong Provincial Museum 1979, Wen Wu Correspondent 1979). Detailed treatments of stylistic and technological developments can be found in the Chinese literature, as can very general outlines of the important social developmental trends, however this information is scattered (eg. Xu 1981, He 1981). In order to study the hypothesized interrelationship between increasing sociopolitical complexity and interregional interaction in detail it is first neccessary to define as clearly as possible the relevant developmental patterns present in the archaeological record. These patterns provide the empirical basis for studying the factors which influenced the development of social complexity.

The particular conceptual framework I shall use in this chapter is a systemic model of culture[7]. As Flannery (1972) Clarke (1968:408-431) Friedman & Rowlands (1977) and others have demonstrated, this kind of conceptualization is particularly suitable for analysing dynamic cultural processes.

According to such a model, change within a cultural system may be precipitated either by external input, i.e. sources of

[7]specifically the model of the complex adaptive system (Buckley 1968).

energy and information coming from outside the system, or internally from adjustments between the system's internal components in the absence of external stimulus (Wood and Matson 1973). This perspective thus neccesitates investigation of "local evolutionary" processes, as well as external cultural inputs.

While the relative impact of internal versus external sources of variability fluctuates over time, it is not logically defensible to take an a priori stance that one or the other was unimportant to a specific sequence of development. Friedman and Rowlands emphasized the latter point with reference to their epigenetic evolutionary model: "the specific evolution of social formations depends on the internal properties of local systems, upon the local constraints and upon their place in a larger system" (1977: 205). Furthermore, it is the larger system - the articulation of different local and regional societies and conditions of reproduction - that "comprises the total relevant universe for the analysis of evolution" (ibid: 272). The particular framework I shall be using is thus also a useful one because it does not make any assumptions about the relative strength of particular factors.

There are many ways of defining components (or "subsystems") whose operation and developmental patterns will be studied. The particular breakdown chosen depends on the problem being investigated. Since my focus in this study is on the role of interregional exchange in evolutionary development I have been guided in my definition of components by the schemes that

have been used previously in similar studies. A similar situation to that of prehistoric southern China obtained during the late Neolithic and early Metal Ages in Europe. In this case a metal technology was adopted from relatively more complex societies in neighbouring regions, and imported bronzes were circulated through preexisting exchange networks (Kristiansen n.d., Wells 1980). As I shall argue below, this also appears to be the pattern in Lingnan. The components used in the European studies include social hierarchy, religion and ritual systems (as the ritual aspects of elite status), exchange networks, manufacturing (craft specialization), settlement and subsistence (Table 5.1). All except settlement can be broadly classified as

Renfrew (1975)	Wells (1980)	Kristiansen (n.d.)
subsistence		
	settlement	settlement
technological	manufacturing	craft specialization
social	social	social
symbolic/ projective		ritual/religious
trade/ communication	circulation	exchange system

TABLE 5.1: Subsystems defined in previous European studies.

social, ritual/political and economic components. Settlement structure, like the structure of a mortuary population is essentially a reflection of the structural properties of the

above components, and as such is not an equivalent unit of analysis with the others. In this chapter therefore I shall be considering only the following components:

i. social hierarchy,

ii. political networks,

iii. manufacturing,

iv. exchange networks.

The general stages of socio-political evolution defined by Fried, Service and others (as outlined by Flannery 1972) underlie the analyses of these components. These typologies take the hierarchical features of the social component as their defining features, and relate changes in the other components and social institutions to them (Table 5.2, Flannery 1972). The correlation between the stages of the Marxist scheme used by the Chinese, and the schemes of Fried and Service are shown in Table 5.3.

The Chinese have suggested that the developmental pattern in this component is from Egalitarian/Tribal level to early State-level society. In my analysis of this component I shall attempt to verify and document this inferred transition.

Under the political component I shall be looking primarily at the horizontal dimensions of elite status: the evidence for the extension and integraton of ritual/alliance networks uniting local groups during the Geometric Periods.

The manufacturing component comprises two aspects, first the rise in technical skills throughout the Geometric Period, and secondly the evidence for changes in the organization of

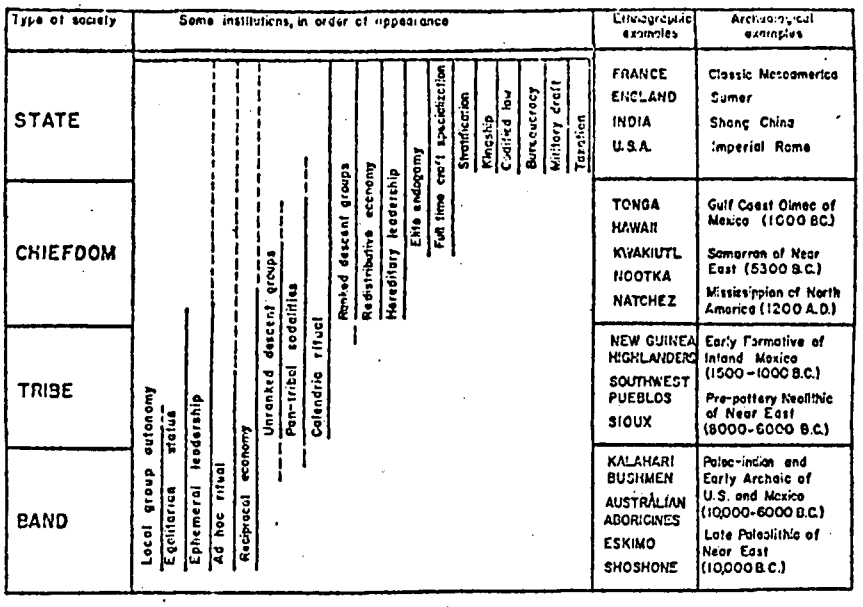


TABLE 5.2 : Levels of sociopolitical complexity and associated developments in other social institutions. (Flannery 1972:401)

Fried	Service	Marxian	North China Archaeological Cultures
Egalitarian	Band	Primitive	Paleolithic
			Mesolithic
	Tribe		Yangshao
Ranked	Chiefdom		Lungshan
Stratified	State	Slave	Shang-early Eastern Zhou
		Feudal	Warring States,Qin & Han

TABLE 5.3 : Levels of sociopolitical complexity in relation to North Chinese Archaeological cultures. (Chang 1980:363, Fried 1983)

craft production related to such technological advancements.

One of the defining features of typologies of social political

evolution is the linkage between increasing hierarchization and increasing craft specialization (Flannery 1972). Even those who disavow the utility of such typologies for studying the processes of cultural complexity recognize this linkage as a fundamental element in the evolution of complex systems (Friedman and Rowlands 1977, Wenke 1981). It is thus my basic expectation that the Geometric Period in Lingnan should be characterized by evidence for increasing specialization in the manufacturing component. Friedman & Rowlands, Earle and others have argued that it is particularly in the production of luxury prestige goods that specialization most strongly coordinates with socio-political hierarchism, because it is in control over the production and distribution of such items that the status system is reflected and based (Friedman and Rowlands 1977, Earle 1977, Earle & D'Altroy 1982:207). According to the model of socio-political development being used here, full time craft specialization is a concomitant of advanced Chiefdom - early State societies, while part-time specialists to village-level specialization occurs from at least the tribal level.

With respect to the circulation component I shall be concerned solely with evidence for the movement of materials both within the Lingnan network, and between Lingnan and neighbouring regions. The general expectation in this area is for circulation of prestige items to increase along with the degree of hierarchisation in the social-political component for the reasons cited above. Utilitarian items requiring less specialized production are expected to show consistently more

restricted circulation, following the same logic.

More detailed analysis of the spatial aspects of circulation, especially the development of hierarchical organization in the movement of materials (as per Renfrew 1975, 1977), although it would be of the greatest value to studying the operation of this component, is impossible to study on the basis of current data. This lack of spatial information also intrinsically affects analysis of the settlement component. Therefore regarding the development of settlement hierarchies, and the spatial aspects of the circulation of materials we can only speculate on the basis of the model, but can do little to confirm or refute our expectations.

In the following sections I shall present in detail the currently available evidence pertaining to each of these components.

B. SOCIAL COMPONENT

1. Data Base And Methods

Prior to the discovery of the Matougang Kui Period tombs (also known as Qingyuan #1 & #2) in 1962 and 1963 many Chinese archaeologists had held that groups in the Lingnan area remained at the Primitive Society stage until the Qin invasion of the late third century B.C., whence they moved directly into the Feudal Stage (He 1981: 212). The Qingyuan tombs were crucial because they manifest a concentration of wealth out of character with Primitive Society. At the same time the majority of the artifact traits are clearly local, indicating that these were

indeed the graves of members of the local Geometric society (C.P.A.M. Guangdong 1963,1964). Finds of several other Bronze and early Iron Age tombs in the past 20 years has substantiated both the existence of an elite group in the late Geometric Period, as well as its local character.

According to the current Chinese synthesis (He 1981) the sociopolitical organization of the Lingnan Geometric cultures made the transition from Primitive to Slave Society (tribe to statehood) just prior to the Kui Period. In this section I shall examine in more detail the evidence for such a transition, and for the organizational level of the preceding Chevron Geometric Periods.

The main archaeological data that have been used generally to study the hierarchical aspects of social organization are settlement data (on household, intra- and inter-site levels) and mortuary data. The only available sources of data bearing on the Geometric groups of this region are a number of reported Geometric burials.

The use of mortuary data to make inferences regarding social status is still a topic of some dispute. Cross-cultural ethnographic surveys by Binford (1971) and others have indicated that in many recorded societies status distinctions important to an individual during life are symbolized in his or her treatment after death. Status distinctions (as well as other aspects of social persona) are manifested in such features as amount and nature of grave goods, and the energy expended on grave preparation (ibid., Chapman and Randsborg 1981, Pearson 1981).

Although it is not possible to make a priori assumptions about which particular aspects of mortuary treatment will define relative social status for any individual group, because of the redundancy of information reflected in mortuary ritual, where status differences are thus symbolized they are likely to be recognizable in several different features (Underhill 1983:30).

Accepting these premises I shall make a preliminary examination of the burial data to see if they provide evidence for an increase in status differentiation through the Geometric period.

The excavated sites known to contain burials are listed in Tables 5.4 and 5.5. At only two of these sites - Shixia and Hedang - do the burials clearly relate to more than one chronological period within the Geometric.[8] The others are all single-period cemeteries or isolated single burials. Most of the Bronze and Iron Age burials listed in Table 5.5 have been published in complete detail. It should be noted however that they represent only part of the total excavated burials from those periods. He (1981: 213) states that 11 sites containing a total of 38 graves dating to the Spring & Autumn and Warring States Periods have been excavated in Guangdong. Partial or full detail is available for only 31 graves at 8 sites; at most only 14 of these graves are undisturbed.[9]

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[8]The Yinshanling site in Guangxi contains burials from at least four different periods, however the later three are during the historic Han period which lies outside the chronological limits of this study.

[9] The sites for which we have no information are located in Fogang, Longmen and Jieyang counties. (He 1981)

SITE (reference)	LAYER	TOTAL BURIALS	PUBLISHED INFORMATION	GRAVE FORM AND ORIENTATION	GRAVE GOODS AND SPECIAL FEATURES
Shixia	lower (Period 3)	44	general summary of major features; 1 detailed example. Relevent burials identified by catalogue number. No age/sex information.	primary and secondary single burials, oriented head to the East. Rectangular pits, most with burnt walls.	large graves each contain 60 - 100 grave goods, including ritual objects and jade ornaments. Medium & small graves each contain 4 - 12 items. Both primary and secondary burial furniture. Shixia Culture.
Shixia	middle (Period 4)	44	as above, but 2 detailed examples.	Most are primary single burials, oriented head to the East. Rectangular pits, a few with burnt walls.	Number of grave goods per burial, and overall variety much decreased compared to the previous period. Clear stylistic break with Period 3 graves. Few discernable group characteristics.
Jinlansi	middle, a (upper ½)	4	individual detail on all	Primary single burials in shell midden. Supine, extended position, oriented head to the East. Simple rectangular pit.	1 adult male, 2 adult females, 1 child. Only one female has grave goods: 1 polished bone tablet placed on front of skull, and 1 ceramic jar. Possible extraction of lateral incisors.
Hedang	3 (lower): 2 periods in burials: 甲 (below shell midden); 乙 (in midden layer)	甲 =8 乙 =19	general summary of major features; 1 detailed example (甲); 2 detailed examples (乙). Detailed report on physical anthropology. No age/sex breakdown.	All are inhumations. Grave pits unclear. Orientation: males generally head to the West, females to the East. 甲: most are probably secondary, supine extended position. 乙: most are primary, a few are secondary. Body position as above.	甲: All have grave goods, 1 - 3 items each. Males mostly stone tools & weapons, females mostly spindle whorls. No pottery. Burial M65 (male, ca. 25 years) has pair of finely-worked ivory tube ornaments placed next to the skull. 乙: Grave goods as above. Burial M25 (male youth) wears large ivory ring on right hand, and grooved bone ornament on skull. Tooth extraction (lateral incisors) seen in adults, both sexes.
Shek Pik		6	individual detail on all. No age/sex information	No visible grave pits. Body position (discernable for 3 burials) supine, extended, oriented head to the South.	Burial V, none; Burials I & II, 1 polished stone ring each, & 1 coarse geometric- impressed pot; burial IV, various faunal remains, shark-tooth head ornament, polished stone ring, coarse Geometric pot, 4 polished stone weapons including 1 ge; burial VI, 1 soft Geometric jar, 25 stone tools, spear points & blanks.

TABLE 5.4: Chevron Period burials from Guangdong Province

SITE (reference)	LAYER	TOTAL BURIALS	PUBLISHED INFORMATION	GRAVE FORM AND ORIENTATION	GRAVE GOODS AND SPECIAL FEATURES
Zaogang	midden	6	individual detail on all	no grave pits discernable. Single primary burials, body position supine, extended, head to the Southeast.	3 adult males, 2 adult females, 1 child. 2 of the males and one female each have 1 small polished stone adze, broken at the butt end. Possible extraction of lateral incisors.
Hedang	2 (upper): 2 periods in burials: 丙 & 丁, in upper part of shell midden.	丙=27 丁=24	as for Layer 3, 丙&丁 each represented by one detailed example.	One grave may contain double female burial, remainder are single, primary. Body position as for Layer 3.	Majority have grave goods. Artifacts as for Layer 3, except 9 pottery vessels also found. Tooth extraction, as for Layer 3.
Raoping County	?	24	very fragmentary information from several general commentaries	?	Geometric-impressed jars and pan dishes. Some glazed, some proto-porcelain wares. Many types of polished stone tools, weapons, and ornaments. One bronze ge. Ceramic traits said to be unique to the Northeast area. No other information yet published.

TABLE 5.4 (continued)

The style of reporting for Neolithic burials is somewhat different. Only those sites containing 6 graves or less have been reported in detail so far. For the larger cemeteries such as Shixia and Hedang the characteristic features of the burials (grave form, orientation, artifact assemblages) are described in summary form only. One or two detailed examples are provided for each time period defined, and the major changes visible between the periods are noted (Shixia Archaeological Team 1978, Yang & Chen 1981). Information relating to class differentiation is one of the main features that Chinese archaeologists are concerned to derive from burial data, thus even in the absence of precise detail it is possible to make preliminary judgements about the degree of status differentiation evident in the remains, judgements which it may be possible to refine in future when more data become available.

The Hong Kong data present a different problem again. Only two sites, Sham Wan and Shek Pik, have produced definite burials (Meacham ed. 1975, 1978). Although the individual burials for both sites has been reported, because of poor excavation techniques at Shek Pik, and unclear stratigraphic associations at Sham Wan, the relative dating of the burials is tentative. Other sites have been inferred to contain cemetery areas on the basis of distinctive artifact distributions (see below) but as no skeletal remains have been recovered to substantiate this idea, these cannot be regarded as confirmed burials.

2. Chevron Periods

i. Chevron 1

The Period 3 burials from Shixia are the only representatives of the initial phase of the Geometric Horizon in Lingnan. It seems, however, that they are not typical of regions of Guangdong other than the upper reaches of the North River. The Period 3 burials represent the final stage of what has been termed "The Shixia Culture" (Su 1978). The earlier two stages of this culture, represented primarily in burial contexts at Shixia and some nearby sites (Shixia Archaeological Team 1978 :11), are pre-Geometric. The Shixia Culture as a whole is clearly linked to a ceramic horizon which extends northwards through Jiangxi Province to the central and lower Yangtze area - the horizon which Chang has termed the Lungshanoid (Chang 1977:144, Zeng 1982).

Relatively intact skeletal remains have been recovered from only 4 out of the 108 burials at Shixia, and very fragmentary remains have been recovered from a few others (Shixia Archaeological Team 1978:2-3). Distribution of these skeletal remains by period has not been reported, nor is it recorded whether the fragmentary remains are sufficient to allow determination of age and sex. At present no such data is available.

Forty-four Period 3 burials have been excavated. According to the excavators there are notable differences in relative size and wealth between them. Small and medium-sized graves contain far fewer grave goods than larger ones: 4-12 items per grave as

opposed to 60 to 110+ for the latter.

In their discussion of grave form the excavators do not provide the distribution of the different forms by period, thus it is not certain how the three major categories 'Primary, shallow pit', 'Primary, medium-depth pit' and 'Secondary' equate with the three size categories. However, as there are 19 primary and 25 secondary burials in the sample, and since the three forms do also represent distinct size categories, it seems likely that all three forms are represented in Period 3. Because of their bearing on status differences I shall discuss them in some detail.

Shallow pit graves are small, varying from approximately 0.5 to 1.1m^2, with a minimum length of 1 metre. They are also poor in grave goods. 55.8% have no grave goods at all, while the remainder contain between 1 and 12 pieces each. Judging by the size of the smallest graves, and the fact that only extended burials have been documented in this area, at least some of these must be infant or child burials. The excavators seem to think that the remainder are mostly female: they mention that among the grave goods spindle whorls and stone rings are most commonly seen, while stone tools are very rare (ibid, 2).

Medium-depth primary burial pits are larger, ranging between 1.1 and 1.6m^2, with a minimum length of 1.8 metres. They contain more grave goods than Shallow-pit burials, but less than secondary burials. In terms of style and grouping the grave goods are more similar to those of secondary burials than of the smaller primary burials. Interestingly, some appear to

be graves from which the body has been removed for secondary burial.

Secondary burials are associated with the largest grave pits. Their size varies between 1.5 and 2.2m^2. They also are accompanied by the largest amounts of grave goods. Ritual aspects of burial are very standardized in this group. Over 90% have burnt earth pit walls, in about 93% the skeletal remains are placed in the southeast section of the pit and in 7% they are in the northeast. In most cases there is red earth (ochre? 红色硃土) placed on top of or beside the skeleton. This standardization is echoed also in the grave good assemblages: there is a basic set of ceramic vessel types which occurs in almost all Period 3 burials (ibid: 9).

The large graves of the third period contain ritual objects such as a jade cong, and jade and crystal ornaments such as bi discs, slotted rings, plaques and pendants. The excavators have also noted that the large graves contain large numbers of tools of production (mainly woodworking and agricultural tools), which they see as evidence for the beginnings of class distinctions originating in control over the forces of production by wealthy individuals or families (ibid, 12).

Whether or not these burials represent the early stages of ranked society, it is clear that there are very great distinctions in status and wealth between individuals and perhaps individual lineages in this period and region. Unfortunately, in the absence of age and sex data as well as spatial information it is not yet possible to investigate the

nature and basis of this status differentiation in any detail.

ii. Chevron 2 & 3

One of the features which makes the early Geometric periods at Shixia so interesting is the break which is visible between the Period 3 (Initial Chevron) and Period 4 (Chevron Soft Pottery Period) burials. Radiocarbon data indicate that the temporal gap between the two is not great, yet judging by the mortuary remains there is great cultural distance between them in stylistic and ritual characteristics, as well as relative social complexity.

Some features of Period 3 are retained in lesser proportions in Period 4 burials, indicating that this break does not represent a complete population replacement. However, the stylistic and ritual traits which linked the Shixia Culture so strongly to the Yangtze cultures are drastically diminished, and the evidence of vast wealth and status differences are correspondingly reduced.

There are 44 period 4 burials corresponding to the middle habitation layer at Shixia. The comments made above regarding the type of data available for Period 3 burials apply also to Period 4. Grave size and variability in grave size are both reduced compared to Period 3. Very few burials, at most 7 (15.9%), are secondary. The remainder are primary, but whether they are shallow or medium-depth pits or both is not reported. At least one is of a fourth pit type, termed "pebble mound grave" (堆放石块墓). In this grave type the skeletal remains

and grave goods are surrounded and covered with fill containing large quantities of limestone pebbles. There is good skeletal preservation in all 4 pebble mound graves. Only one example is cited: burial M70 is a female of about forty years who appears to have met a violent death (Shixia Archaeological Team 1978:2).

The amount of grave goods is also much reduced over the previous period. The range in quantities is not reported, however the two examples given each contain less than 10 pieces. The excavators note that preliminary examination of the contents of this period's graves have revealed no obvious group characteristics among them, in addition to their being few traits linking them to the previous period (ibid:10). The only ornamental artifacts retained in Period 4 graves are slotted rings: none of the special status goods such as cong and bi discs have been encountered.

One must of course be cautious in interpreting such changes in wealth and status distinctions as representing a change in the degree of status differentiation in early Geometric society as a whole. Such negative evidence may simply reflect a change in the use of either the cemetery itself (for example, restriction to one lower status lineage), or of the settlement whose inhabitants are interred here. On the other hand, the absence of obvious status/wealth distinctions in the Shixia Period 4 burials is consistent with information from other Late Neolithic burial sites in Guangdong such as Hedang's lower layer burials and Jinlansi. While some individual burials from these sites contain special ornaments or possibly ritual status

symbols (for example Hedang M25 & Jinlansi's female burial: see Table 5.4), in general there is little distinction between burials in amount of grave goods or energy expended. Burial pits are small and simple, and grave goods are few to nonexistent (Table 5.4).

A few burials from the upper layer of Hedang and two from Shek Pik which probably also date to the Chevron Transitional Period begin to evidence differences in wealth between apparently contemporaneous burials. The two wealthy burials from Shek Pik, for example, were associated with 22 and 26 artifacts each, while the other four had 3 items or less.

At the Hedang site there are strict distinctions between the grave assemblages of males and females, which is related to an apparent sexual division of labour: males are interred with stone hunting and woodworking tools, while females are accompanied primarily by spindle whorls and ceramics (Yang and Chen 1981).

It is unfortunate that the 24 Transitional Period graves from Raoping County have not yet been individually reported, since they are the only group of burials excavated so far which date to the beginnings of the Bronze Age in Lingnan. One locally-manufactured bronze ge and some very high-quality ceramics were reportedly unearthed from these burials, indicating a scale of wealth unlike that represented in the late Neolithic burials from the Pearl Delta area. The earliest Kui Period burials indicate very wide distinctions in wealth and status, therefore analysis of a site such as this may prove

crucial to understanding the nature of the transition between the relatively undifferentiated structure of Late Neolithic society, and the highly differentiated Bronze and Iron Age society of Lingnan.

3. Kui Period

A number of burial sites of the Kui Period have been excavated in Guangdong and Guangxi. Apart from one confirmed and several possible burial groups in Hong Kong, all are elaborate single graves. All except for the Hong Kong examples have been dated on stylistic grounds to the late Spring & Autumn and early Warring States, or approximately 600 to 400 BC (Table 5.5).

The basic structure of the grave good assemblages is the same for all of the single graves. The bulk of the artifacts are bronzes, usually accompanied by only one or two geometric-impressed ceramic jars and one or more whetstones. The bronzes include weapons, tools, vessels, ritual and musical objects, and occasional miscellaneous items such as mirrors. Weapons, such as yue battle axes, ge dagger-axes, spears, swords, arrowheads and daggers, are the most numerous category in all reported assemblages. At least one bronze vessel (usually a ding tripod) and one bell are contained in each burial.

Five out of the six Guangdong burials for which this information is recorded contained a characteristic set of ritual objects whose precise significance is unknown. These are short bronze staffs capped with a human-head finial (Figure 5.1). Intact tombs each contained four, placed in the four corners of the pit. The only Guangxi Kui Period tomb contained at least

SITE (reference)	TOTAL BURIALS	PUBLISHED INFORMATION	GRAVE FORM AND ORIENTATION	GRAVE GOODS AND SPECIAL FEATURES
(Kui Period)				
Sham Wan Layer C (Meacham ed., 1978)	6	individual detail	no grave pits discernable. 2 cremations, 2 inhumations, all are single burials. Body position & orientation not discernable.	none
Lanmashan, (#49)	1	fragmentary information	?	1 human-head bronze staff (tomb originally held 4), 1 geometric-impressed ceramic jar. Other remains not reported.
Luoding #1 (#49)	1	fragmentary information	?	At least 50 bronzes: weapons (42 yue axes), ritual objects (4 human-head staffs), 2 vessels, 2 bells. 1 geometric-impressed ceramic jar. Other remains not reported.
Luoding #2 (#49)	1	fragmentary information	?	Bronzes, and 1 geometric impressed ceramic jar. No further information..
Niaodanshan (#28)	1	individual detail	Double-sectioned sub-rectangular pit, 3.5 X 5.7m^2 (partial length). Fragments of wood along one side of large section. Oriented North-South. Position of body unknown.	59 bronzes: weapons (41, including 28 arrowheads), 9 tools, 4 human-head staffs, 4 vessels, 1 bell. 1 geometric-impressed ceramic jar, 3 whetstones. All placed in small end-section.
Matougang #1 (#11)	1	individual detail	?	Located 6 metres from Matougang #2. 25 bronzes: 8 weapons, 6 bells, 5 vessels, 4 human-figure staffs 2 "crossbars". 6 ceramic vessels, including 2 kui-impressed ceramic jars; 2 whetstones.
Matougang #2 (#12)	1	individual detail	Rectangular pit, 3.1m^2. Layer of sandstone pebbles at base, covered with layer of yellow earth. Oriented head to the Southeast. Body position unknown.	39 bronzes: weapons (31, including 22 arrowheads), 7 bells, 1 vessel. 1 geometric-impressed ceramic jar; 1 whetstone, 1 stone stick.

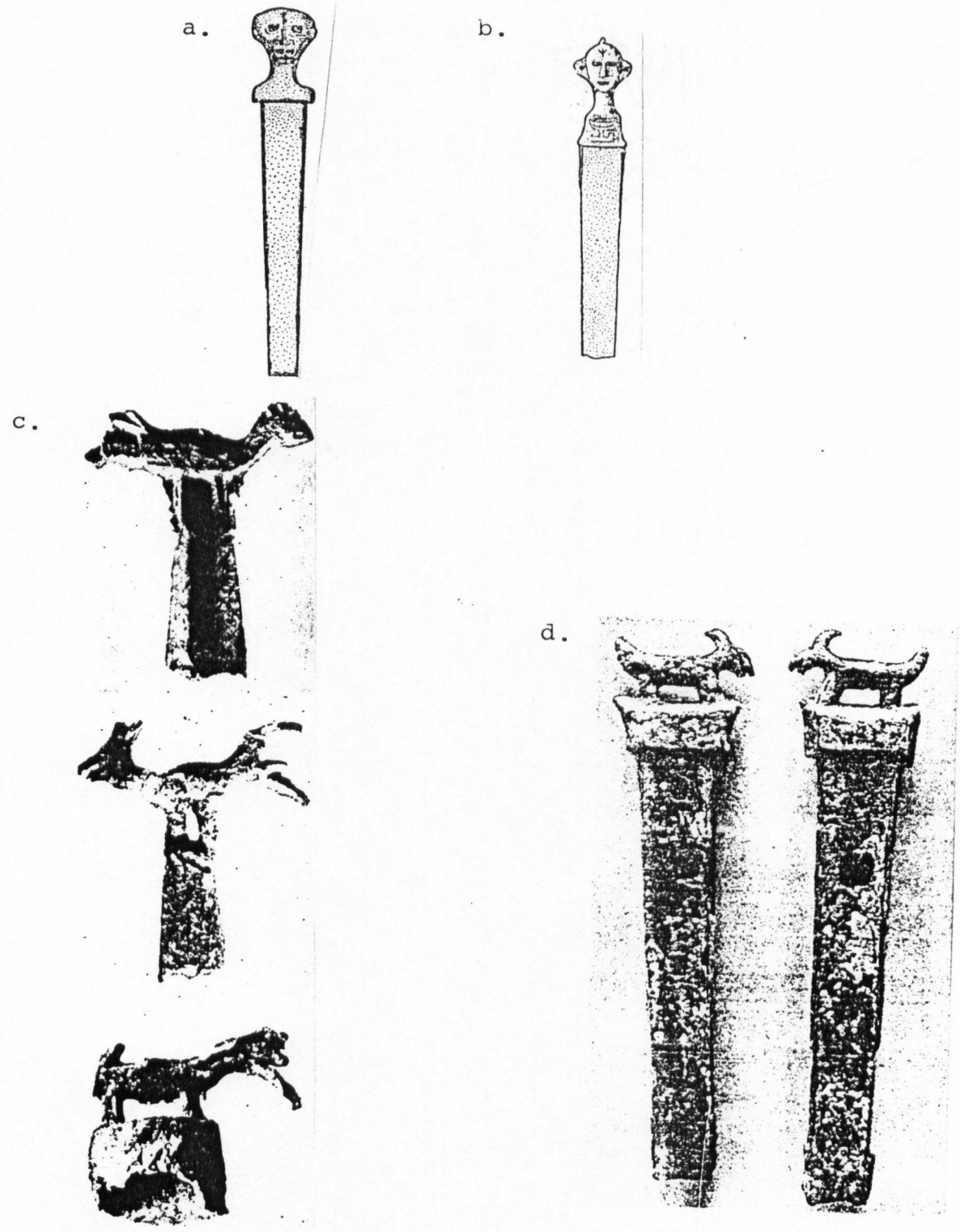
TABLE 5.5: Kui and Mi Period burials from Guangdong and Guangxi Provinces

SITE (reference)	TOTAL BURIALS	PUBLISHED INFORMATION	GRAVE FORM AND ORIENTATION	GRAVE GOODS AND SPECIAL FEATURES
Jiahui (#38)	1?	individual detail on bronzes only	?	33 bronzes: 12 weapons, 8 vessels, 7 tools, 2 bells, 2 animal-topped staffs. 2 unidentified objects. Other remains unknown.
(Kui or Mi Period)				
Gaodiyuan #1 (#49)	1	fragmentary information	?	2 human-head bronze staffs (tomb originally held 4). No other information.
(Mi Period)				
Luoyanshan (#34)	1	individual detail	Double-sectioned rectangular pit 1.7m^2. Waist pit in small end-section. Oriented head to the Southeast. Body position unknown.	15 bronzes: 8 tools, 5 weapons, 1 vessel, 1 bell. 1 geometric-impressed ceramic jar; 2 whetstones; 1 pierced pebble.
Tonggugang (#30)	22	individual detail for 7 undisturbed and 8 partially disturbed graves.	Rectangular pit inhumations, no signs of coffins. 2 have layer of sandstone pebbles in base. 1.8 to 3.1m^2. Probably all are single burials. Orientation: 3 head to Southeast, 11 between Northwest and Northeast.	(intact graves only) Total of 112 bronzes, 25 ceramic vessels and 11 whetstones. Number of items per grave ranges from 2 to 40. All graves contain weapons, 4 contain swords. Distinction in 5 larger graves between those containing large proportions of ceramics (43-59%), no whetstones and few bronze weapons (1 or 2 pieces, 4-14% of assemblage), and those containing small proportions of ceramics (0-6%), several whetstones and larger proportions of bronze weapons (6-12 pieces, 20-41% of assemblage).
Songshan (#35)	1	individual detail	Large rectangular pit, 37.6m^2. Wooden outer and inner coffins, inner coffin placed in centre of pit, with grave goods placed outside at either end. Above and below outer coffin was layer of burnt wood and grass. Oriented head to the East. No skeletal remains.	108 bronzes: 40 tools, 24 ornamental & ritual objects (including 4 human-head staffs), 14 vessels, 6 bells. 18 ceramic vessels, 3 ceramic beads, 7 jade ornaments (including 2 carved rings with gold handles), 1 glazed stone bead and 1 whetstone.

TABLE 5.5 (continued)

SITE (reference)	TOTAL BURIALS	PUBLISHED INFORMATION	GRAVE FORM AND ORIENTATION	GRAVE GOODS AND SPECIAL FEATURES
Yinshanling (#40)	110	individual detail	Variety of grave forms from small rectangular pits with no coffin, to mid-sized rectangular pits with second-level platforms (ledges), to multi-sectioned passage tombs. A few have pebble layer in bottom of pit (9%). Most have waist pit containing a ceramic vessel (79%). The majority of larger pits have coffins, some have both inner and outer coffins. Size varies from 1.4 to 8.0m^2. No skeletal remains. Majority are oriented head to the East.	Total of 377 bronzes: 283 weapons, 46 tools, 39 utensils, 6 animal-topped staffs, 1 bell, 2 miscellaneous items. 181 iron artifacts: 177 tools, 3 weapons, 1 vessel. 11 bronze and iron artifacts: 8 arrowheads, 2 vessels, 1 knife. 360 ceramics: 190 cups, 89 he boxes, 45 large jars and cooking vessels, 36 spindle whorls. 115 stone artifacts, including 42 jade or turquoise ornaments and 71 whetstones. Each grave contains from 1 to 50 grave goods. 5 types of assemblages defined: (#) 1. weapons, tools and utensils.....30 2. spindle whorls, tools and utensils.....36 3. weapons and utensils.....17 4. tools and utensils.....15 5. other..... 4 Distinction between type 1 and type 2 interpreted as sex distinction: type 1 = male, type 2 = female.

TABLE 5.5 (continued)



a. Niaodanshan (Guangdong Provincial Museum 1975)
b. Matougang #1 (C.P.A.M. Guangdong 1963)
c. Yinshanling (Guangxi Cultural Properties Brigade 1978)
d. Jiahui (Guangxi Provincial Museum 1973)

FIGURE 5.1: Human and animal-topped staffs from Kui and Mi Period graves

two animal topped staffs. Their placement within the grave is unknown[10] .

Grave form has been reported for only two burials. In at least two cases this information is missing because the graves were unearthed by construction workers, not by trained archaeologists. Matougang No.2, (also known as Qingyuan No.2) and Niaodanshan are both estimated to be early Warring States in date, however, they are quite different in scale. The former is a simple small rectangular pit inhumation, 3.1m^2 in area. There are no traces of a wooden coffin, but in the bottom of the pit is a layer of sandstone pebbles, covered with a layer of rammed earth (Figure 5.2). The total of 42 grave goods includes 39 bronzes (C.P.A.M. Guangdong 1964). The Niaodanshan tomb, by contrast, is a double-sectioned sub-rectangular pit, with traces of wood lining (coffin remains?) along one wall of the larger segment. Although the large segment has been partially destroyed, the remaining area is almost 20m^2. The burial furniture is richer than Matougang, and it contains a set of the human-head staffs which were not found at the former site.

The concentration of wealth and high energy investment in these tombs, as well as their apparently isolated location and measured distribution, all point to their being the graves of a small elite group. The differences between the Matougang No.2

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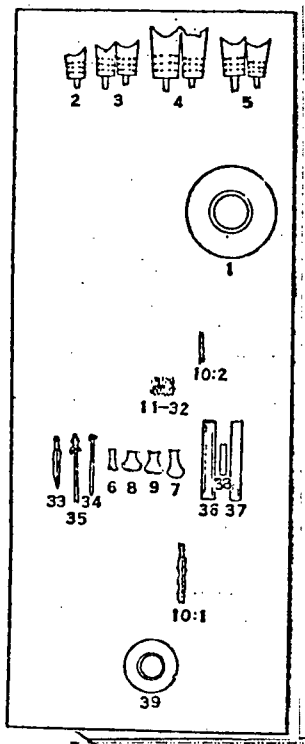
[10]This site (Jiahui) was not excavated by archaeologists. Only the bronze artifacts, and no information about the site itself, were recovered. It is assumed to be a burial because of the nature of the artifact assemblage (Guangxi Provincial Museum 1973).

a.

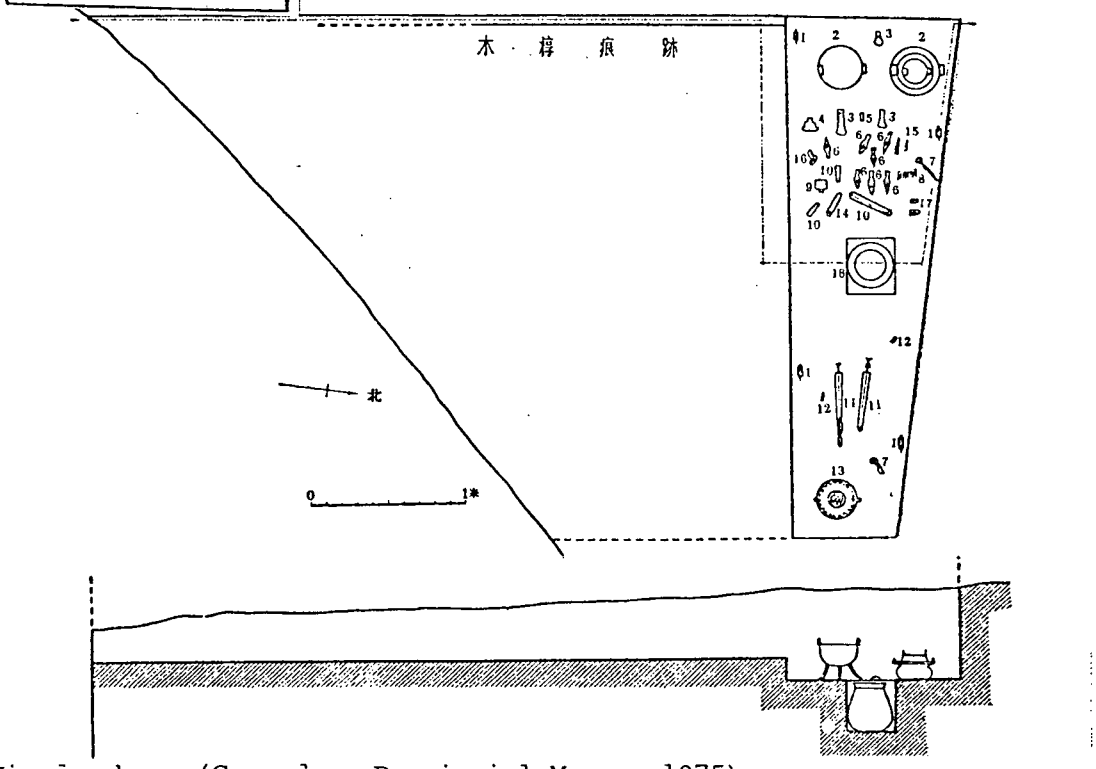


a. Matougang #2 (C.P.A.M. Guangdong 1964)

1. bronze lei urn
2-5. bronze bells
6,7. bronze axes
8,9. bronze yue battle axes
10:1. bronze spear
10:2. bronze spear butt
11-32. bronze arrowheads
33-35. bronze daggers
36,37. stone batons
38. whetstone
39. Geometric-impressed guan jar

0 .5 1 metre

b.



b. Niaodanshan (Guangdong Provincial Museum 1975)

1,12. human-head staff
2. bronze ding
3. axe
4. shovel-shaped tool
5. chisel
6. spear
7. scraper
8. arrowhead
9. duo bell
10. whetstone
11. sword
12. sword
13. he vessel
14. spear butt
15. spear butt
16. ge
17. knife
18. geometric-impressed guan jar

(1-9;11-17 are bronze)

FIGURE 5.2: Kui Period graves, Guangdong Province

and Niaodanshan graves are suggestive of both status and wealth distinctions within the elite group which these burials seem to represent.

Just what the structural relationship was between the elite, represented by these tombs, and the rest of Kui Period society is very difficult to investigate with current data. The only evidence available is from Hong Kong, and that evidence is itself rather speculative.

The confirmed burials in Hong Kong which seem to date to the Kui Period are of a very different tradition than both the Kui elite and Late Neolithic burials in Lingnan. They consist of fragments of about six skeletons recovered from the Sham Wan site. At least two are cremations, and two inhumations. No grave pit or grave goods were identified, but it does appear that all were single burials, in contrast to the pre-geometric burials at this site, of which several were multiple (Meacham ed.1978, Chapter XI).

Several other sites in Hong Kong are thought to contain burial areas. At Man Kok Tsui and Hai Dei Wan small artifact clusters comprising one or more complete fine ware jars (of the same type found in the elite tombs), polished stone tools and/or rings have been excavated. At the former site, these finds were located on the side of a steep hill within a few hundred metres of identified habitation and workshop areas (Davis and Tregear 1960). No grave pits or skeletal remains have been recorded from either of these sites, but because their configuration contrasts with identified habitation, midden, or workshop

deposits, they have been tentatively classified as burial areas (ibid., Williams 1979:50). It should also be noted that the composition of the artifact clusters is very similar to grave assemblages from nearby Late Neolithic sites such as Hedang (Yang and Chen 1981). Schofield has suggested in a similar vein that the clusters of bronze weapons unearthed during sand-digging operations at the Tai Wan site in Hong Kong may have represented burial assemblages (Meacham, ed.1975: 48). Two examples will serve to illustrate these artifact clusters:

1. a group of artifacts from one 10 foot cut yielded 1 "assegais" (spear point), 1 dagger, 1 adze. 2 different types of arrowheads, 1 spearhead, and 1 ge (all of bronze), plus several polished stone rings. A corded ware jar found very nearby may also be associated (Finn 1958:105).
2. a group including bronze adze, small spear head, lance head found with fragments of a kui-impressed jar. Another large bronze spearhead was found about 3 feet away (ibid:227). Finn suggested an early Warring States date for other bronze pieces found at Tai Wan, and the kui-impressed ceramic from the second cluster would support that estimate. Altogether, between 50 and 100 bronze weapons and tools have been found at Tai Wan, many in clusters along one section of the raised sandbar, spatially distinct from the identified habitation areas. An additional point arguing for the identification of these clusters as burial assemblages is their structural similarities to the assemblages from elite tombs noted above.

If we assume, as seems reasonable, that these latter two kinds of assemblages do indeed represent burials, then at least two, and perhaps three different burial types and levels of wealth are evidenced in Hong Kong during the Kui Period. This reconstruction is admittedly speculative, being based as it is on unconfirmed burial sites. However, in the subsequent Mi Period the less affluent members of Lingnan society also become visible in confirmed mortuary contexts.

4. Mi Period

Burials dating to the middle and late Warring States (Mi Period) have been unearthed at 5 sites in Lingnan. Only 4 have been reported, but in all 4 cases the reports are extremely detailed. Two, Luoyanshan and Zhaoqing are single, apparently isolated graves. The other two, Tonggugang and Yinshanling are cemeteries. Because the latter two are the only detailed reports available of a set of more or less contemporaneous burials they are worth studying at some length. A complete analysis is beyond the scope of this study; however, preliminary tabulations provide some insight into the structural relationships between the burials in each cemetery.

The Tonggugang site is the only Kui or Mi Period cemetery reported from Guangdong Province (Guangdong Provincial Museum 1981). Only 7 out of 22 identified graves were undisturbed at time of excavation, contents of the remainder being scattered throughout the site area. A Late Neolithic habitation site is located on the top of the same hill, but no habitation area

contemporaneous to the burials has been identified.

All of the intact and semi-intact graves contained weapons, and on this basis they have been thought to be all male graves (no skeletal remains were recovered). There is however, a curious distinction in the grave assemblages of the intact graves. Of the five largest graves, two contain large proportions of ceramics, no whetstones, and only 1 or 2 bronze weapons each. The remaining three contain few ceramics, 2 to 5 whetstones, and 6 to 12 bronze weapons each. Whether this represents a sexual, occupational or other distinction is impossible to decide at present.

Bronze artifacts comprise the majority of grave goods in all burials, accounting for almost 90% of all artifact remains from this site. Unlike the graves of the Kui period however, the majority of bronzes in these graves are tools. Woodworking tools comprise 26.8%, and knives 36.3% overall. These burials have also produced the first metal agricultural tools found in Guangdong. There is quite a variation in both pit size and number of grave goods, moreover the correlation between the two variables is significant at the 0.1 level[11]. The features of graves #12 (poorest) and #16 (wealthiest) contained in Table 5.6 are illustrative of the differences between the two ends of the scale.

There are no obvious symbols of status among the burial furniture. Ornaments and ritual objects are both absent. Two

[11]Calculated r value of .584, r(0.1) for sample size of 7 is .582.

#	SIZE		GRAVE GOODS				
	M^2	Rank order[1]	No.	Bronze no.	categories	Whet-stones	Ceramics
12	1.9	6	2	1	1 weapon	0	1
16	3.1	1	40	35	6 weapons 26 tools 3 vessels	5	0

[1] 1=largest, 7=smallest

TABLE 5.6 : Comparison of wealthiest and poorest burials from Tonggugang. (Information from Guangdong Provincial Museum 1981)

of the intact graves contain small "waist pits" cut into the floor of the main pit, which contains a large 'mi'-impressed 'weng' jar. In short, while there are obvious differences in wealth between the Tonggugang burials, overall they seem to represent a middle level of hierarchy: the emphasis in the assemblages is on utilitarian items, and even the wealthiest are not equipped with such items as ornaments, bronze bells or staffs.

The Luoyanshan grave, although it does contain a single bronze bell, is otherwise comparable with the Tonggugang burials. The Songshan grave in Zhaoqing City, on the other hand, stands in strong contrast to Tonggugang. This tomb, which is estimated to date to the very end of the Warring States Period is the largest and richest thus far excavated in Lingnan. It is a simple rectangular pit measuring 37.6m^2, containing both inner and outer wooden coffins. The majority of the 139 grave goods are of bronze (77.7%), and once again the most numerous category of bronze artifacts is the tools (37%). Next in abundance are ritual and ornamental artifacts, including 4

human-head staffs, a set of 6 bells and pieces of a decorated plaque. Seven out of 9 lithic artifacts are ornaments, including 2 elaborately carved jade rings with gold handles.

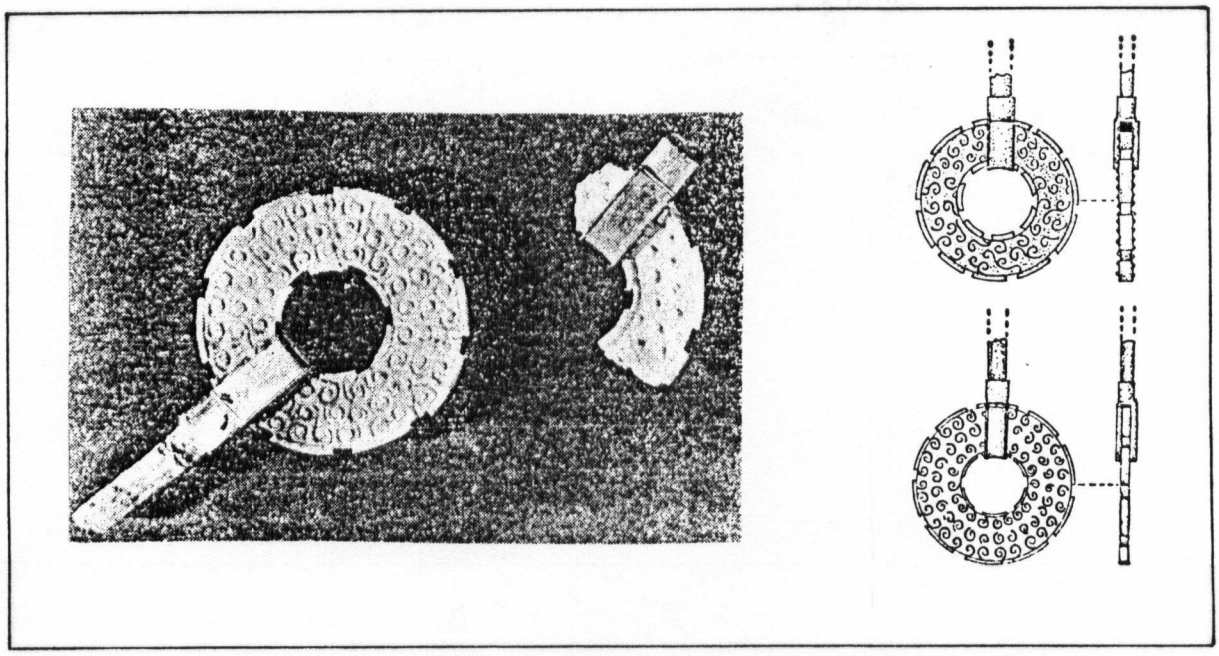


FIGURE 5.3: Gold handled jade rings from the Songshan burial, Zhaoqing Shi, Guangdong. (Guangdong Provincial Museum et al. 1974)

The differences between the Zhaoqing and Tonggugang burials are thus not merely differences in wealth and size. The largest graves evidence access to special ritual objects such as staffs and bells which the smaller and poorer graves do not have. These features indicate the presence of distinct status levels within the "elite" burial group itself.

The largest Geometric cemetery site in Lingnan is Yinshanling in Guangxi Province. Of the 165 burials excavated here, 110 are mid to late Warring States (Mi Period) in date,

one is Qin, and the remainder are Han.

The 110 Mi Period graves span a period of approximately 200 years. Most contain iron artifacts, and thus fall into the latter part of this Period. There is considerable variation in grave form and size, and in the wealth of the burial assemblages. The richest and most elaborate burials (eg. #55, #108 & #74) are comparable in scale to the richest Kui period graves, but considerably smaller in scale than Zhaoqing. At the other end of the scale are small simple pit burials of less than $2m^2$ which contain less than 10 grave goods each.

All of the skeletal remains at this site have disintegrated, apart from a few small fragments, so once more we are without definite age/sex information. However, the excavators have inferred sex distinctions on the basis of the grave goods, primarily according to the presence of spindle whorls or weapons. In only three cases do both of these occur in the same grave; the weapons involved are an arrowhead (#13), a yue battle-axe (#20), and a spear (#85). One other contains both a spindle whorl and part of a bow (蓋弓帽, #18). The one weapon never found together with the spindle whorl is the sword. If we therefore make the assumption that spindle whorls = females, and swords = males, it is possible to sex 77 burials (35 females, 42 males). This assumption provides a tentative way of examining the sex factor in status differentiation at this site.

"Female" graves are less elaborate than "male" graves on average: only 19.5% of female graves have ledges ("second-level

platforms" = 层台) as opposed to 30.1% of male graves. Female ledge pits are also smaller than those of males, however there is little difference in the size of the simple rectangular pits between sexes (Table 5.7).

SEX	RECTANGULAR PIT % occurrence	mean size	median size	LEDGE PIT % occurrence	mean size
female	80.5 (n=7)	3.15m²	2.6m²	19.5 (n=28)	5.5m² 3.1m²
male	69.0 (n=13)	3.23m²	2.6m²	30.1 (n=29)	6.8m² 4.7m²

TABLE 5.7 : Comparison of grave size and form between "female" and "male" burials at Yinshanling. (Information from Guangxi Cultural Properties Brigade 1978)

Female graves are poorer in absolute wealth of grave goods. Taking only the largest graves (those over 6m²) female graves average 8.8 items each (n=4), while male graves average 20.5 (n=10). In general there is not the strong correlation between grave size and number of grave goods in female burials as there is for males. This point is illustrated in Table 5.8 which contrasts the numbers of grave goods for the largest and smallest graves in each sex category. The male burial containing the largest number of grave goods is the largest grave in the sample. The wealthiest female grave is, by contrast, ninth largest of the 36 female graves.

There is one respect in which status does appear to cross sexual lines, this is in the distribution of special status markers, the animal and bird-topped staffs. In this cemetery

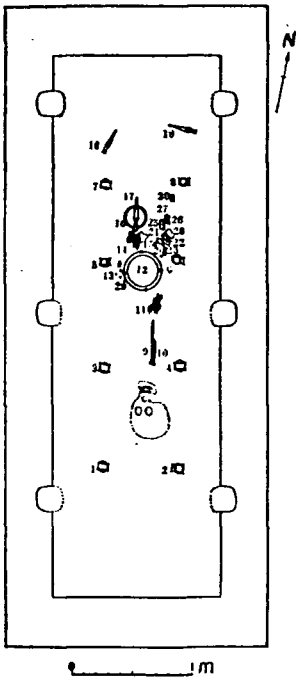
SEX	SIZE (M^2)	NUMBER OF GRAVE GOODS range	median
Male	under 2 (n=5)	3-9	6.5
	7 & over (n=6)	12-42	23.0
	('staff' graves)	23-42	38.5
Female	under 2 (n=4)	1-7	4.5
	6 & over (n=4)	6-17	4.5
	('staff' graves)	17-21	19.0

TABLE 5.8 : Comparison of amount of grave goods between largest and smallest "male" and "female" burials at Yinshanling. (Information from Guangxi Cultural Properties Brigade 1978)

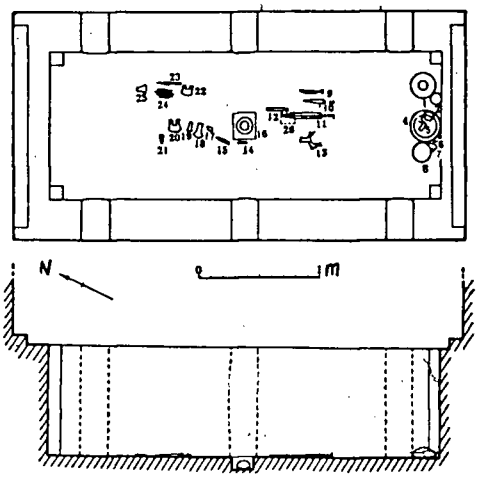
staffs are very strongly associated with burials which are distinctive in terms of size, wealth, elaboration, or all three (Tables 5.8 and 5.9). The female graves containing staffs rank second and third among their sex category in amount of grave goods. The male graves rank first, second, fourth and sixth. Other features also set them apart. Four out of six (66.7%) contain traces of both inner and outer coffins, compared with 6.4% in the cemetery as a whole. One of the remaining two graves is distinctive in being the only one with 2 grave ledges. Graves #55 and #108 produced the only bronze coffin fittings recovered from the site. Three of the graves also display three pairs of post holes placed opposite each other along the long sides of the pit (Figure 5.4); only two other graves in the cemetery displayed the same feature. Metal ding vessels are

GRAVE #	GRAVE PIT			GRAVE GOODS		SEX
	form	size (m^2)	special features	total no.[1]	special features	
22	rect.	3.0	1. inner and outer coffins 2. waist pit contains <u>he</u>	17	1 bronze <u>ding</u> 6 jade rings 9 ceramic vessels, including 8 cups no weapons	Female
55	ledge	11.4 6.2	1. inner and outer coffins 2. 8 bronze coffin handles 3. ledge has 3 post holes on each long side	42	2 bronze & iron <u>ding</u> 28 bronze weapons 4 whetstones	Male
57	rect.	2.2	none	26	largest number of iron tools in a single grave 4 whetstones	Male
64	ledge	4.9 2.4	1. 2 grave ledges 2. lower ledge has 3 post holes on each long side 3. waist pit contains <u>he</u>	21	5 jade rings 2 turquoise beads 6 ceramic vessels, including 5 cups no weapons	Female
74	ledge	6.9 3.9	1. inner and outer coffins 2. waist pit contains <u>he</u> 3. ledge has 3 post holes on each long side	35	1 bronze <u>ding</u> 1 bronze <u>pen</u> 18 bronze and iron weapons	Male
108	rect.	8.0	1. inner and outer coffins 2. 12 bronze rivet-joints from coffin 3. waist pit contains <u>bu</u>	23	1 bronze <u>ding</u> 3 whetstones 1 <u>ban'er guan</u> jar	Male

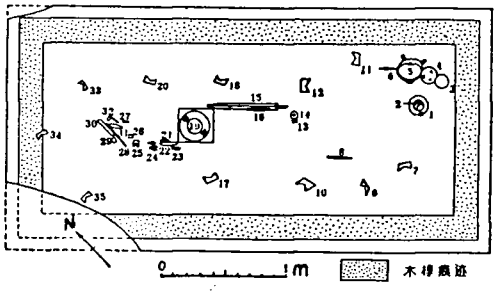
TABLE 5.9: Yinshanling graves containing animal-topped staffs (information from Guangxi Cultural Properties Brigade 1978)



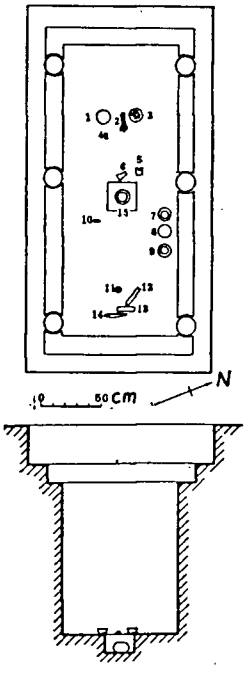
M 55: 1-8. bronze coffin handles 9. iron scraper 10. bronze sword 11-14. bronze arrows 12. bronze 'pen' basin 13. quiver 15. bronze 'yue' axe 16. bronze 'ding' tripod 17-19. bronze spears 20. bronze spear butt 21,22,27. bronze razor knife 23,25,26,28. whetstones -29. iron hoe 30. bronze staff



M 74: 1. ceramic 'bu' vase 2,3,7. ceramic cups 4. bronze 'pen' basin 5,6. whetstones 8. bronze 'ding' tripod 9. bronze scraper 10,11. bronze swords 12. iron spear 13. bronze staff 14,15. bronze razor knife 16. ceramic 'he' box 17. iron adze 18. bronze 'yue' axe 19. bronze axe 20,22. iron hoes 21. bronze spear butt 23. bronze spear 24. bronze arrow 25. bronze axe 26. bamboo 'he' box.



M 108: 1. ceramic ban'er guan' jar 2,7,9-12,17,18,20,33-35. bronze coffin fittings 3. ceramic 'he' box lid 4. ceramic tripod 'he' box 5. bronze 'ding' tripod 6,8. bronze spears 13. bronze staff 14-16. bronze swords 19. ceramic 'bu' vase 21,23,24. bronze arrows 22. iron razor knife 25. iron hoe 26 bronze axe 27. bronze spear butt 28. iron chisel 29-31 whetstones 32. iron adze



M 64: 1,3,7-9. ceramic cups 2. jade 'jue' ring 4. turquoise bead 5. iron hoe 6. bronze axe 10. bronze staff 11. ceramic spindle whorl 12. iron razor knife 13. whetstone 14. bronze razor knife 15. ceramic tripod 'he' box

FIGURE 5.4: Four staff-graves from the Yinshanling cemetery site, Guangxi (Guangxi Cultural Properties Brigade 1978: 214, 217, 218)

associated with burials that are larger and/or wealthier than average; their occurrence among 'staff' graves is much higher than in the cemetery as a whole - 66.7% vs. 11.8%.

Yinshanling thus does provide evidence that status differentiation cross-cuts sex categories in the Mi Period. Not only do female graves rank in the highest levels of grave goods and energy expenditure (grave size and form), but several of the richest graves of both sexes contain animal-topped staffs which appear to have been important status markers throughout the Kui and Mi Periods.

It is possible that these staffs are also indicative of social subgroups such as lineages. At least two kinds of finials are reported, animals and birds. However, since the type of finial is recorded for only 3 of the 6 recovered we cannot presently make any informed guesses about their possible significance, except to say that it is not correlated with the sex of the burial. The Yinshanling report contains sufficient data for a more detailed spatial and stylistic analysis which might bear on the identification of social subgroups, but such an analysis lies outside the scope of this study.

C. POLITICAL COMPONENT

Identifying political aspects of status/rank and distinguishing political from other (eg.economic) subgroupings within a region is particularly difficult, partly because of the tight overlap between the various aspects of hierarchical organization in pre- and early state-level societies, and partly because no precise

and invariable archaeological correlates of political versus social or economic aspects have yet been defined.

One source of evidence I shall explore here involves distinctive features of ceramic style. Recent ethnographic and archaeological research into the significance of artifact style and symbolism has demonstrated the variability in the information that may be (consciously or unconsciously) conveyed through style, and in the types of artifacts that may convey such information (Hodder 1982, Plog 1983). Because the stylistic aspects of a single artifact class are, on their own, too ambiguous an indicator for defining the extent and other features of political networks I shall also consider how such stylistic evidence coordinates with two other kinds of evidence which seem to relate to political networks and local subgroupings. These are first, the indications of a unified ritual/ceremonial system in this region, and secondly, special symbolic artifacts which appear to be symbols of political leadership, and may mark the divisions between local units. These latter two only become apparent during the Bronze and early Iron Age, thus the discussion relates primarily to the late Geometric.

One very notable feature of the development of the Geometric Horizon is its gradual expansion towards the West. During the Initial Period it is found only in the Eastern, Northern and Central regions. During the Soft Pottery and Transitional Periods it expands into the Western and Southern Regions, but in the latter it is never very strong (Guangdong

Provincial Museum 1979:330). By the Kui Period the Geometric network reaches its greatest extent with the incorporation of eastern Guangxi, but a curious feature obtains: the most distinctive and very common motif of this Period, the kui (double-f) does not penetrate into southern Guangdong and southeastern Guangxi, and is only weakly distributed in the northeast part of Guangdong. Isolated pieces of Kui-impressed pottery have been found in the southwest fringes of Fujian and southern fringes of Hunan bordering Guangdong and eastern Guangxi, but otherwise the kui is a distinctive Lingnan trait.

It is interesting to note that the boundaries of the early historic province of Nanhai also excluded the Leizhou/Hainan area. This area was also separated from the Guilin Province of northern Guangxi, being joined instead with the southern and western parts of Guangxi and Vietnam. It is worth considering therefore that the early historic political/administrative districts reflected the divisions of the prehistoric political/alliance network.

It is during the Kui Period that certain features of mortuary ritual first show a degree of standardization throughout the Lingnan Geometric area. The traits which appear to have ritual significance are 1) each grave contains a large geometric (usually kui) -impressed ceramic jar, usually placed in a waist pit, and 2) at least one bell, of distinctively southern style, is found in each elite grave. The placement of grave goods within the grave pit is also standard: all items except swords and daggers are placed to one or both ends of the

pit, with the swords/daggers in the middle parallel to the long axis. The latter were probably worn on the body. It is worth noting that the non-elite (presumed) burials in Hong Kong are also characterized by the presence of a large, usually kui-impressed ceramic jar (see especially Williams 1979). During the Mi Period Guangdong graves retain the waist pit and/or ceramic jar feature, while in the Guangxi Yinshanling cemetery, waist pits characteristically contain he boxes, and only a few hold large jars (Guangxi Cultural Properties Brigade 1978).

The bronze staffs referred to in the previous section are another distinctive feature of high status Lingnan burials, one which seems likely to have held political symbolism. During the Kui Period they are found in single, isolated high-status graves, and they occur in sets (usually of 4) placed in the corners of the grave pit. Again there is a distinction to be made between eastern Guangxi and Guangdong, in the use of animal or bird finials in the former, and human head finials in the latter. The human-head or human-figure motif is found on other bronze artifacts in Guangdong, and has been cited by the Chinese as a distinctive trait of this area (He 1981). It may also be significant that staffs have only been unearthed from graves located in Central and Western Guangdong, and not from the three elite graves in the North and East (He 1981:216).

Staffs have been unearthed in a Mi Period cemetery context at Yinshanling, but in this case only one staff was contained in each of the 6 graves. In the higher status isolated burials of this Period they still occur in sets of four.

I suggest that these features of both ceramic and ritual style signify the extent of a political/alliance network uniting local units in Guangdong and northeast Guangxi during the Bronze and early Iron Ages. The extent of the network is definable by shared ritual and stylistic features, and smaller units within the network may be identifiable by variations on the basic themes.

There is some minor historical evidence to support this hypothesis: the term used by the State of Chu to refer to the inhabitants of Lingnan - " the 100 Yue" - expresses this kind of concurrent unity and disunity. More importantly, it is clear that even in the early historic period the King of the Yue did not yet have jurisdiction throughout the entire administrative Province of Nanhai. Sources speak of him attempting to gain the loyalty of other "Yue" groups through bribes and gifts (Peters 1983:252-254). Such comments indicate the continued existence of strong independent political units within the Yue area of Lingnan even into the Han period. It is also important to note the obvious signs of militarism evident in the amounts of well-used military equipment in late Geometric graves, which indicates that relations between groups within the Geometric network were not always peaceful.

D. MANUFACTURING COMPONENT

1. Development Of Technical Skills

It is in the areas of ceramic production, and later metal-working that the greatest changes in technology are evident during the Geometric Period. Information on both of these comes primarily from the artifacts themselves, as very few kilns and no definite bronze manufacturing workshops or mines have been unearthed in Guangdong or Guangxi.

i. Ceramics

Xu (1981) and He (1981) both provide general non-technical outlines of the development of ceramics in Guangdong in the Geometric period. Meacham (ed.1978) has provided more detailed information with respect to the ceramics of the Sham Wan site, Hong Kong. The Hong Kong ceramics have been subjected to such techniques as experimental replication, thermal expansion tests to determine firing temperatures, and chemical and physical analyses of paste and glazes (ibid.:171-182, Finn 1957:198-213). At least some of these techniques are also being applied to the Guangdong materials (Guangdong Provincial Museum 1983a), but no detailed reports have been published. A similar sequence of development is agreed upon by all sources; the main details are outlined below[12].

Changes are evident in three aspects: vessel construction, surface decoration and firing. The main advancement in vessel

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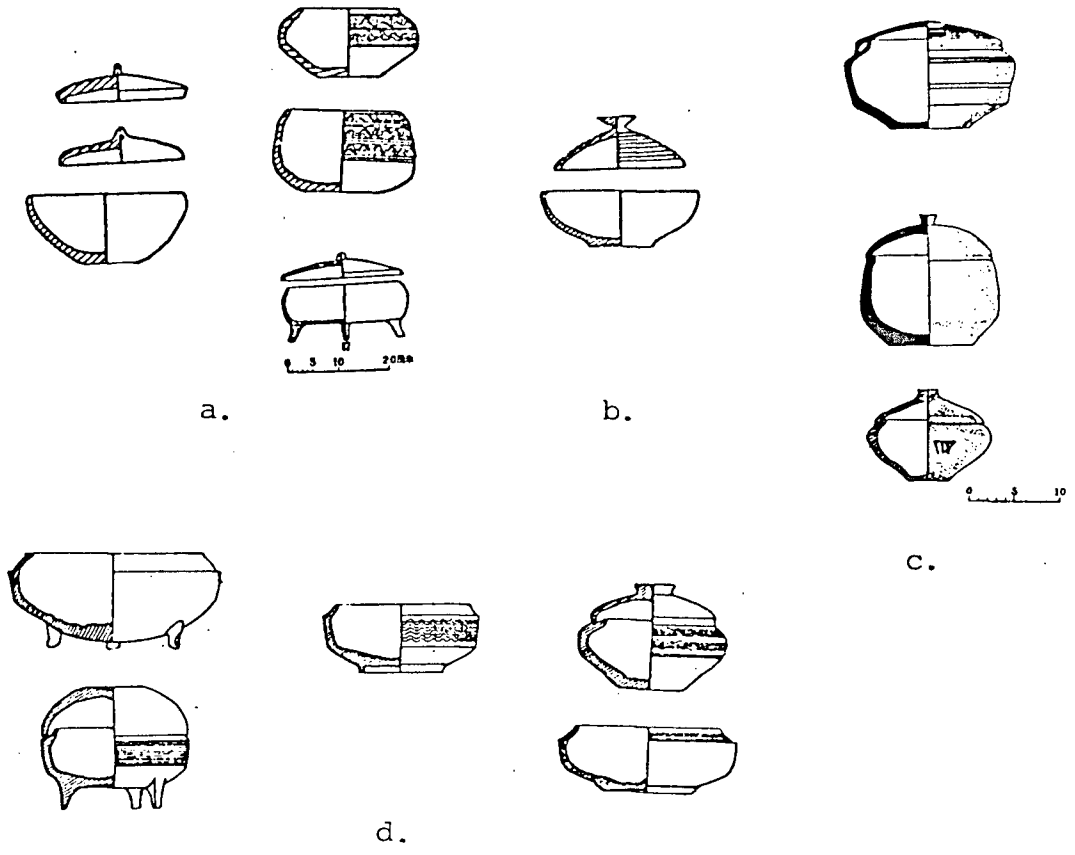
[12] Except where noted the following discussion refers only to the finewares. Coarsewares change very little in technological features throughout the Geometric Horizon.

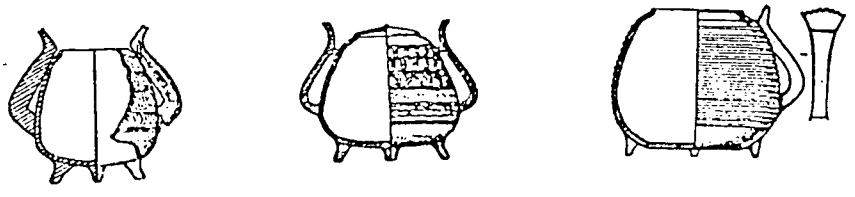
construction is the increasing use of and control over the wheel. Throughout the Chevron Periods only the rims and foot-sections of vessels show marks of wheel-finishing. The major body of ceramic vessels is hand built by coiling and beating with a paddle. By the Kui Period all rims and feet are wheel-finished, and smaller vessels such as cups and bowls are completely wheel-thrown. In the Mi Period even the largest storage jars could be constructed completely on the wheel, although the coiling method was still also used. There is a corresponding increase in the variety of smaller vessel forms produced throughout the Kui and Mi Periods, as well as an increasing elaboration of appendages such as handles, lids and spouts. At the same time however, there is a visible standardization in vessel forms from one end of Lingnan to the other. Figure 5.5 illustrates this with two examples: the ban'er style of vessel handle and the he box from sites from Northern Guangdong through to Eastern Guangxi.

Surface decoration is a second aspect of ceramics in which the development of skills is evident. From the Chevron to the Kui Periods the trend in surface decoration is towards increasing care and skill in the design and application of geometric impressions. Individual impressions become more regular, there is an increase in the variety of motifs used and zoned group patterning replaces single motifs. Intaglio rather than relief impressions begin to be used in the Transitional Period, and are standard during the Kui Period (Xu 1981). New tools for applying surface patterns, such as rollers and



a. b. c. d.

1. he boxes: a. Xigualing c. Songshan, Zhaoqing
b. Baishipingshan d. Yinshanling



a. b. c.

2. ban'er guan jars: a. Xigualing c. Yinshanling
b. Baishipingshan

FIGURE 5.5: Standardization of vessel forms in the Mi Period

individual pattern moulds are adopted at about the same time (Meacham ed. 1978:159).

The use of glaze is first in evidence during the late Chevron Transitional Period. The most common colours of glaze are yellowish-brown and green. Analyzed samples from Hong Kong are lime glazes, most likely derived from a mixture of wood ash and clay (ibid. 173). Although the use of glaze increases notably in the Mi Period, glazed vessels still only comprise 5.14% of the ceramic assemblage at the late Mi Period site at Baishipingshan (C.P.A.M. Guangdong et al.1964b:151). Glaze was used on all shapes and sizes of vessels, over plain, incised or impressed surfaces, however it is rather more common on small unimpressed vessels.

Early in the Mi Period there is a rapid change in the surface patterning of ceramics. The elaborate zoned impressions and intricate motifs of the Kui Period are quickly superseded by rapidly applied and unzoned single motifs such as the simple check and 'mi', and by varieties of incised decoration, some of which appear to have been applied on the wheel. However this change is not related to any technological innovations nor to sudden improvements in old techniques.

The final aspect of ceramic technology to be discussed is firing. Control over firing temperatures and kiln atmosphere increases significantly during the Geometric Period. This is arguably the most significant technological trend of this period because of its connection with the development of metallurgy: high temperatures (at least 1100°C) are required for alloying

and casting, and both high temperatures and a reduction atmosphere for smelting ores (Watson 1971:70). Temperatures of 1100°C were achieved and surpassed during the Chevron Transitional Period: the hard pottery which comprises the majority of the ceramics from Shuikou was fired at temperatures between 900 and 1200°C, and some as high as 1300°C (Guangdong Provincial Museum 1983a:590). At Hedang, approximately 30% of the ceramics were fired to 1100°C or above (Yang and Chen 1981), and high-fired proto-porcelain wares have been reported from the Raoping burials. The consistency of the colours of hard wares is indicative of a high degree of control over kiln atmosphere. Such changes are related to improvements in kiln structure.

The Guangdong Geometric sites where kiln remains have been unearthed are listed in Table 5.10. Although the data on this topic are scarce they are sufficient to indicate the general developmental trends.

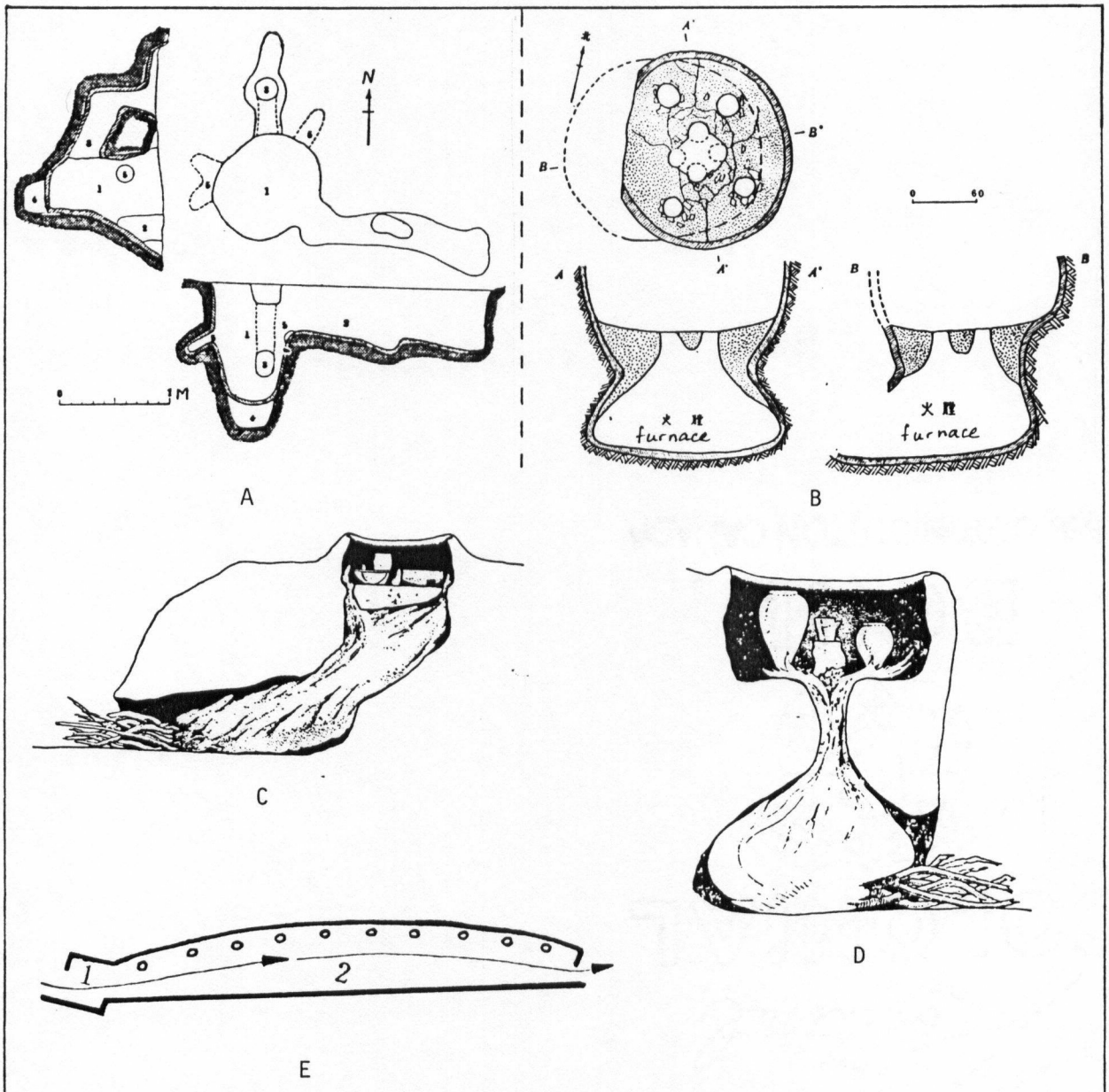
The kiln at Zoumagang is already a fairly sophisticated design. It is a pit kiln, with separate fire box and firing chamber. The fire box is set alongside rather than directly underneath the firing chamber, and the two are separated by a short flue (Figure 5.6, A). Two other sites of this Period, Shixia and Chengpicun each contain a number of kilns, but unfortunately no details or diagrams of these kilns have been published.

The Shuikou kiln site is considerably later than the above three. In terms of Central Plains chronology it is estimated to be Western Zhou in date (Guangdong Provincial Museum 1983a).

SITE	PERIOD	TOTAL KILNS	DESCRIPTION (reference)
Chengpicun	Chevron Soft Pottery	several	no information on kiln structure or site (90)
Shixia	Chevron Soft Pottery	4	no information on kiln structure; in association with habitation features (90)
Zoumagang	Chevron Soft Pottery	1	horizontal kiln, separate furnace & firing chamber; in association with habitation features (14)
Shuikou	Chevron Transitional	5	vertical flue kiln, no associated habitation features (31)
Xigualing	early Mi	2	(#1) dragon kiln (#2) unclear; in association with habitation features (15)
Baishipingshan	late Mi	1	unclear; in association with habitation features (15)

TABLE 5.10: Kiln features excavated from Geometric sites in Guangdong Province

The five kilns from this site are structurally very different from Zoumagang, but very similar to contemporary Zhou kilns in the North (ibid. 596). They are all vertical kilns: the fire box is set directly underneath the firing chamber, separated by a pierced floor (Figure 5.6, B). The primary technical advantage of such a structure is that it is easier to reach very



A. Zoumagang kiln #1 (C.P.A.M. Guangdong et al. 1964a)

B. Shuikou kiln #3 (Guangdong Provincial Museum 1983a)

C.& D. Reconstruction of horizontal and vertical kiln types from Banpo (Shangraw 1977)

E. Diagram of early form of "Dragon kiln" (Liu 1982)

Figure 5.6: Kiln types found in Geometric sites in Guangdong Province

high firing temperatures than with the horizontal type of kiln. In the case of Shuikou temperatures as high as 1300°C were reached.

Between Shuikou and the next recorded kilns there is again a considerable temporal gap. The two kilns at Xigualing belong to the early Mi Period. Kiln #2 is largely destroyed (only the furnace remains) but #1 is mostly intact. This kiln is of great significance in the history of Chinese kiln development as is is one of only two Warring States examples of the "dragon kiln" (龙窑)[13] which was previously believed to have been a much later development (Liu 1982:166). Unfortunately no diagram of this kiln was available in the sources I consulted, however the general profile is diagrammed in Figure 5.6, C. In the true dragon kiln the furnace and firing chamber are separate, and a long slanting flue leads to a series of firing chambers. It is not clear from the Xigualing report whether there were several, or just one firing chamber in this example. The overall length of the Xigualing kiln is just less than 10 metres[14]. The Baishipingshan kiln is unfortunately also destroyed, and its form cannot be reconstructed. All of the Mi Period kilns appear to have been above-ground structures. The relationship between the different kiln traditions evident at the Shuikou, Zoumagang and Xigualing sites is a topic worth investigating as they do

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[13] The other example was unearthed from a site in Zhejiang Province. (Liu 1982:166)

[14] The original site report gives a broken length of 7.6 metres; Liu (1982) agrees with Xu's (1981) figure of 9.8 metres overall.

represent different traditions in the history of Chinese ceramics. For the present we can only note that both types were used in Lingnan during the late Prehistoric.

ii Metal working

The earliest evidence for the use of metal in Lingnan date to the late Chevron Transitional Period. The only metal artifact from a securely datable context is a bronze ge from one of the Raoping graves. It is not clear that this item was locally manufactured, although the crudity of its casting has caused some to believe that it was (Guangdong Provincial Museum 1979:329).

Possible casting sites for smaller bronze pieces are indicated by finds of stone casting moulds and a few small droplets of slag from several sites in Lingnan (see Appendix 3). The types of artifacts thus represented are axes, adzes, fishhooks and small bells. The tradition of casting in stone moulds is a particularly southern trait within China: similar moulds have been unearthed from the Wucheng site in Jiangxi, which is contemporaneous with the Erligang phase of the Shang State (circa 1800-1500 BC, Chang 1980:306).

No direct evidence for the local manufacture of such pieces as swords, vessels and most ritual items has yet been found. Chinese archaologists have inferred local production of many such bronzes because they manifest stylistic features which distinguish them from pieces manufactured north of the Wuling range (He 1981, Guangxi Cultural Properties Brigade 1979). Relevant features include the incorporation of typically

"southern" decorative patterns and motifs such as the "frog and snake" and thundercloud, and certain forms which are not encountered further north. Some of these artifacts, such as the Kui Period 'weng' vessels from Jiahui, are intricately decorated, and give an impression of very sophisticated technological control, implying production of a similar order of complexity to that found in the north (Guangxi Provincial Museum 1973). If indeed they were locally manufactured then a high degree of specialization in bronze production is implied (see Franklin 1983 for a general discussion of the organizational requirements of bronze technology). Several bronze artifacts are described as being totally "foreign" in style and have been classifed as probable imports. These will be discussed further below.

There is an intriguing reference to a "smelting site" at the Tongshiling site in Beiliu County, Guangxi contained in a table of Geometric sites in Guangxi (Guangxi Cultural Properties Brigade 1981), but sadly, no further information was contained in either this, or any of the other sources I have consulted. The only evidence of smelting of ores in Guangdong is a copper ingot recovered from a small cache in Yangchun County. The estimated date, based on an associated bronze axe is Warring States (He 1981:213). Certainly Guangdong and, to a lesser extent, Guangxi are rich in copper deposits, particularly in the Wuling mountains (Lee 1939:189). As yet however no mines or smelting sites (other than the one referred to above) have been located.

In short, there is circumstantial evidence to assume considerable local manufacture of metal artifacts in Lingnan during the late Geometric. However, as far as the larger items are concerned direct evidence of smelting or casting sites is still lacking.

2. Organizational Aspects

I have pointed out above that the only archaeologically visible products which might be expected to have been produced outside of the basic household unit are ceramics (particularly fine wares) and metals. The artifacts themselves attest to high levels of skill and technological control, levels usually associated with at least part-time specialization (Franklin 1983, Clarke 1979:347-349). But the main sources of evidence commonly used to investigate this aspect are the production sites themselves. Unfortunately in the case of Lingnan this kind of data is the weakest.

Kiln sites have been discussed above in relation to the technical aspects of the kiln structures, but what of the organizational aspects of the sites themselves? Most of the excavated kilns apparently were located within habitation areas, although the exact spatial relationship between the two types of features is not clear in the published reports. If, for example the kilns are spatially segregated from habitation features, and in a single subarea of the site this would have different implications for the organization of production than if each dwelling, or groups of dwellings are associated with their own

kiln(s). Hopefully the publication of more detailed site plans of excavated sites will in the future allow us to study such spatial evidence. At least two sites appear to be specialized kiln sites, not directly associated with habitation areas. These two are Chengpicun and Shuikou. In the first case I am inferring this pattern: no site report has been published, and information contained in other sources does not specifically treat this point. However, the only other site besides Chengpicun which is designated as a "kiln site" is Shuikou, which is a specialized production area, so on this basis it seems reasonable to assume that Chengpicun is also a specialized site.

The existence of two such specialized kiln sites from the early part of the Geometric Period is interesting given the overall lack of sociopolitical complexity we have inferred for this period. It is worth noting however that Shuikou, which is inferred to be Western Zhou (i.e. very late Chevron Transitional) is more or less contemporary with the Raoping burials, and is also located in the same northeastern area of the Province. It may thus be that the groups in this area were already quite developed organizationally prior to the Kui Period. Chengpicun presents a different problem as it dates to the early Chevron Soft Pottery Period (based on comparisons of its ceramic assemblage with Shixia's: Zhu et al. 1981:233). Obviously the whole question of the development and subsequent decline in status differentiation in this area of the North River during the initial Geometric needs more detailed

investigation. Considerable site data already exist from this area and time period, but are not presently available through published sources. Hopefully they will be used to clarify such issues in the near future.

Evidence for the organization of bronze production is even more scarce than for ceramics, as no actual bronze workshops have yet been excavated in Lingnan. The manufacture of metal artifacts requires greater organization and more specialized skills than either ceramics or lithics because of the extra steps involved and the limited locations where the raw materials can be acquired (Figure 5.7). If, as seems likely, not only

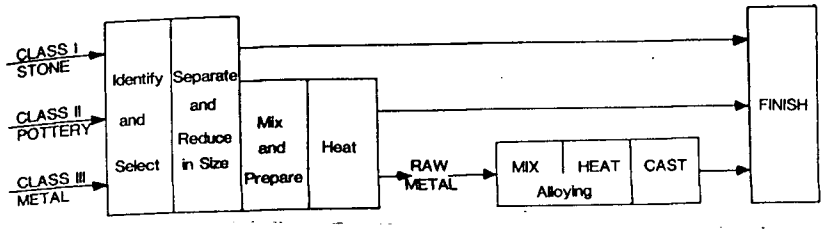


FIGURE 5.7 : Schematic classification of materials selection and processing. (Franklin 1983:283)

weapons and tools, but also larger and more complex items such as vessels were manufactured in Lingnan during the Geometric Period a considerable degree of specialization is implied.

The smelting site in Guangxi Province and the several sites at which moulds and slag have been found may represent small manufacturing/processing centres. Nothing on the order of craft barrios or large workshops is in evidence before the Qin and Han

Dynasties[15]

Ceramics and metallurgy are the only 2 skills which show any evidence of specialist production during the Geometric Period. It is interesting to note that they are the only two production skills not evident among burial assemblages: no individuals can be identified as potters or metal workers from the associated artifacts. Weapons, woodworking, food processing and agricultural tools, as well as tools for production of cloth are all found in burials; however, as far as ceramics and metals are concerned only the finished artifacts are included as grave furniture, never moulds, beaters or other tools of production. This may indicate a division between crafts which were still organized at the level of the individual household versus those organized at a higher level of specialization.

E. CIRCULATION

Recent archaeological research into this component has taken two foci, first the archaeological identification and analysis of exchange systems (e.g. Earle and Ericson 1977, Ericson and Earle 1982:Chapters 2-11, Renfrew 1975; 1977); secondly on modelling the development of exchange systems and their interrelationships with other social subsystems (e.g. Sabloff and Lamberg-Karloffsky eds. 1975, Friedman and Rowlands 1977, Hodder 1982). At this point I shall be concerned with the first of these: the identification of patterning in the distribution of materials

[15] The earliest workshop site found in Lingnan is a Qin-Han dynasty shipyard at Guangzhou in the Pearl Delta. (Guangdong Agriculture and Forestry Institute 1977)

both within Lingnan, and between Lingnan and neighbouring regions.

The circulation of materials or products is logically tied to the degree of production specialization since the spatial restriction of sources neccesitates a distribution system to move the product from the source to the consumer. In a cross-cultural study of pottery production and distribution van der Leeuw (1977) defined 6 manufacturing systems (levels of organization) and their distributional concomitants which illustrates this point (Table 5.11).

System of pottery manufacture	Number of individuals involved	Economic variables[a]	
		Time involved	Market
(1) Household production	one	occasional	own use
(2) Household industry	several	part-time	group use
(3) Individual industry	one	full-time	regional
(4) Workshop industry	several	full-time	village/town
(5) Village industry	several	part-time/full-time	region (wide)
(6) Large-scale industry	many	full-time	regional and export

[a]These are a sub-set of twelve variables presented by van der Leeuw (1977).

TABLE 5.11 : Distributional patterns associated with various systems of production organization. (Van der Leeuw 1977, as reproduced in Hantman and Plog 1983:244).

Of course movement of materials over considerable distances also occurs in the absence of specialized production. It is the organizational structure and patterning of the exchange system which changes most significantly with the development of sociopolitical complexity, not simply distances or amounts of materials involved.

The nature of the materials exchanged is also an important

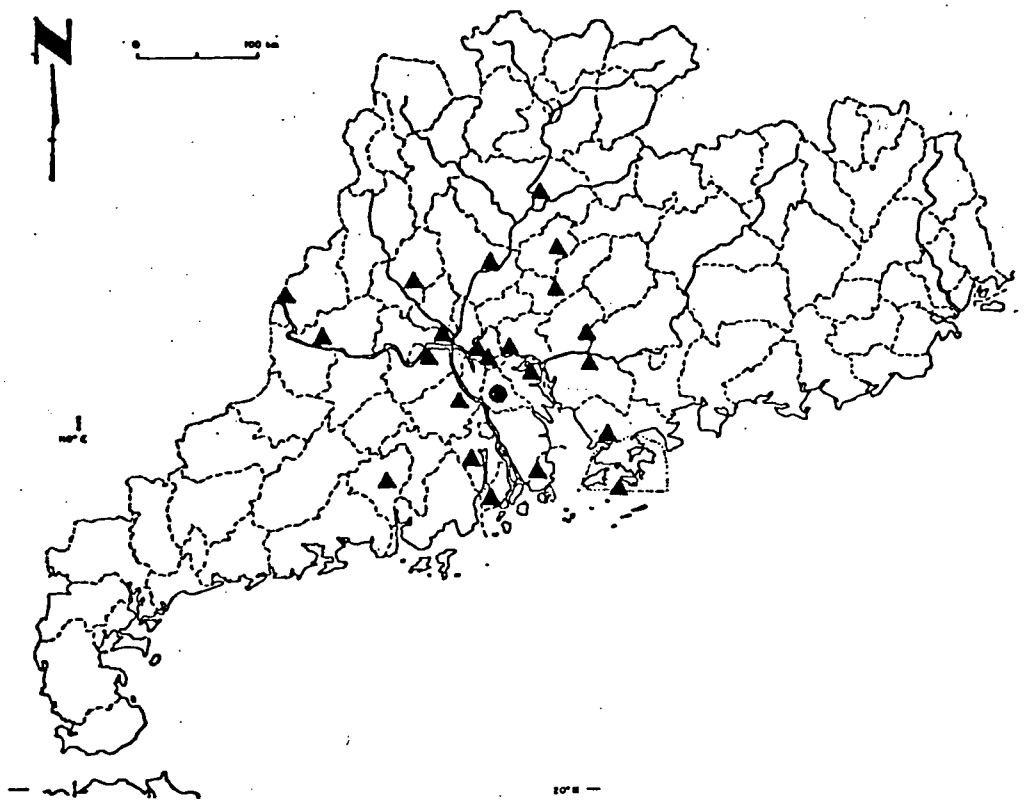
factor in exchange patterns. Because control over production and consumption of prestige goods is one of the hallmarks of high status in egalitarian or ranked societies, such items can be expected to show different distributional characteristics than utilitarian items, being exchanged between elite groups and over longer distances (Friedman and Rowlands 1977, Clarke 1979:346-8, Earle 1982:8-9).

i. Internal exchange networks

In comparison to the previously-discussed components, evidence on exchange systems is almost nonexistant. Current archaeological methods rely on the most detailed data of any of these components, both chemical and physical data on composition of materials in order to trace source or manufacturing locations, and detailed distributional information to trace the movement of materials and goods throughout a region (Earle and Ericson 1977). Although Chinese researchers are now utilizing such sophisticated techniques, particularly in the study of ceramics, so far they have applied them only to studying the development of technological skills, and not to the identification of exchange systems (Li 1982, Zhou et al. 1982).

Only one source-distribution type of study has been published on Lingnan Geometric materials: this is a brief study of the distribution of artifacts manufactured of eurite quarried from Xiqiaoshan (Guangdong Provincial Museum 1983b:1090). the time period concerned is the pre- and early Geometric, through to the early Chevron Transitional Period. Although the information is not very detailed -- for example, there is no

information on the amounts of Xiqiaoshan materials found at each mapped site -- the extent of the distribution is apparent (see Figure 5.8). According to present information the Xiqiaoshan



● Xiqiaoshan site
▲ sites containing Xiqiaoshan eurite

FIGURE 5.8 : Distribution of eurite lithic materials quarried at Xiqiaoshan, Guangdong. (Guangdong Provincial Museum 1983b:1090)

case is an anomaly in the Lingnan Geometric area. Utilitarian lithic materials were generally procured from sources in the immediate vicinity of the use location, usually from river cobbles or nearby dykes (e.g. Davis and Tregear 1960).

The only other current line of evidence for internal exchange patterns is the inferred existence of craft

specialization in ceramics and metals. Jade ornaments were probably also exchanged over considerable distances because of the restricted sources of this particular material, as well as because of its status connotations.

There is a high degree of standardization of both the forms and design of fineware ceramics throughout the Geometric areas of Lingnan during the Kui and Mi Periods. during the Kui Period the large impressed storage jars from eastern Guangdong, the Pearl Delta and eastern Guangxi are practically indistinguishable.[16] In the Mi Period this stylistic standardization extends also to smaller vessels, as noted above (Figure 5.5). Although such standardization between widely separated areas is not on its own proof of specialized production and exchange, it does suggest this as a hypothesis worthy of further investigation. A model developed by Clarke (1979:314) in relation to the Beaker network postulates that differential spatial distribution of coarse wares and fine wares should evidence different circulation systems for each kind of ware (Figure 5.9). There are some vague hints that coarse geometric wares may be differently zoned than fine wares from at least the Chevron Transitional Period. In Hong Kong, for example, geometric-impressed coarse wares are only found during the Chevron Transitional Period, when they co-exist with coarse corded wares, and during the Kui Period when corded wares are no

[16] See for example the illustrations of jars from Wuhua County, eastern Guangdong (Maglioni 1975: Plate I), and He County eastern Guangxi (C.P.A.M. Guangxi 1978: Plates 47-49).

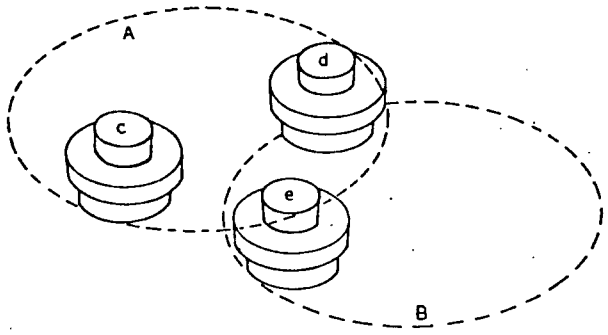


FIG. 4. Model II: A schematic model of the hierarchical set of pottery subassemblages (fine ware, everyday ware, heavy-duty ware) (see Fig. 2) at three domestic sites "c", "d", "e". A common exchanged and copied fine ware is shared by all three sites which are then part of an interregional fine ware "culture/tradition" "A". However, beneath this fine ware uniformity based on exchange and replication are more regional everyday and heavy-duty ware groupings, e.g., "B".

FIGURE 5.9 : Clarke's model of exchange patterns in a hierarchically organized pottery assemblage. (1979:341)

longer found (Meacham 1981). Elsewhere in Guangdong, simple geometric motifs were used on coarse wares from the Chevron 2 Period, if not before. Because there are no detailed site reports from Kui Period sites elsewhere in Guangdong it is hard to make comparisons during that Period; however differences exist between Hong Kong and other Guangdong sites during the Transitional Period. At Shuikou, for example, the only geometric pattern found on coarse wares is the simple check, and in the Haifeng area "net" patterns are predominant (Guangdong Provincial Museum 1983a, Maglioni 1975). A variety of geometric motifs are used on the coarse wares in Hong Kong, although only in single-motif unzoned arrangements. If such apparent differences between coarse and fine wares can be documented more closely in future there may be a stronger basis for discussing exchange networks for fineware ceramics. In the case of the Beaker Network Clarke was able to substantiate the long distance

exchange of beakers through analyses of the clay materials. This is obviously a neccesary step if the patterns suggested here are to be confirmed.

The evidence provided by the bronzes relates to patterns of both internal and external exchange. As with ceramics it is possible that utilitarian bronzes such as small tools and arrowheads were manufactured quite widely at a number of small workshops. On the other hand, the lack of identified casting sites for more complicated pieces suggests that such production was more restricted, and therefore distribution networks more widespread than for the smaller items. This hypothesis accords with the differential status value placed on each kind of artifact. Ding vessels are associated only with higher status burials[17] , whereas smaller tools and weapons have also been unearthed from lower status burials, and habitation sites such as Shixia, Baishipingshan and various sites in Hong Kong and Haifeng (Appendix 3).

ii. Interrregional exchange

The circulation of externally manufactured items seems to have been similarly tied in with elite status. Unfortunately the precise identification of imported items is difficult at present. Chinese archaeologists are reluctant to identify an

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[17] Peters (1983:357) makes the interesting observation that, although such ding are stylistically distinct from forms found north of the Wuling, the basic vessel type is a northern derivative. Moreover, in burials in the northern states ding are "clearly associated with and symbolizing political authority" (ibid.).

item as an import unless there is specific evidence (such as an inscription) attesting to its locus of manufacture in another region. In many cases items described as being "completely Chu/Central Plains-style" are suggested to be imports, therefore such a designation is the only criterion one can currently use to distinguish possible imports from possible local products. Qualifications aside, if we look at the categories of artifacts which are possible imports there are two which predominate:

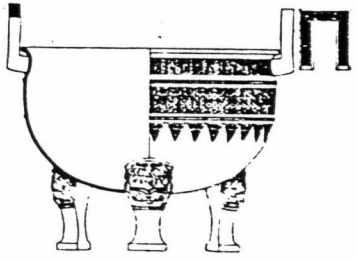
(1) vessels such as lei urns and he jars (Figure 5.10)

(2) swords and ge dagger-axes (Figure 5.11, He 1981:214-216, Xu 1975, Guangxi Cultural Properties Brigade 1979:341).

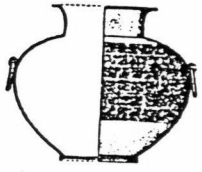
Both categories, but particularly the first, have high prestige value. Notably, only the vessels are specifically suggested to be imports. The implication is that most swords were locally manufactured although heavily influenced by northern styles. The distribution of possible imports among Lingnan geometric graves is shown in Table 5.12. There is clearly a distinction in wealth and status between the graves which contain imported vessels, and those which do not. None of the burials in the Yinshanling and Tonggugang cemeteries, which are on the whole of lower status than the isolated graves, contain "imported" vessels, although a small number contain "local" bronze vessels (Guangxi Cultural Properties Brigade 1978, Guangdong Provincial Museum 1981). From this association it appears that access to imported elite goods such as the bronze vessels was strongly concentrated in the hands of the elite.

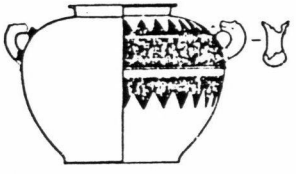
There are other bronze artifacts found in Lingnan Geometric

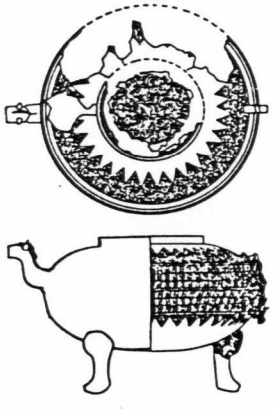
a. Jiahui, Guangxi (Late Kui Period)
(Guangxi Provincial Museum, 1973)



b. Matougang #2, Guangdong (late Kui Period)
(C.P.A.M. Guangdong 1964)







c. Songshan, Guangdong (late Mi Period).
(Guangdong Provincial Museum et al. 1974)

FIGURE 5.10: "Imported" bronze ritual vessels from Lingnan Geometric graves

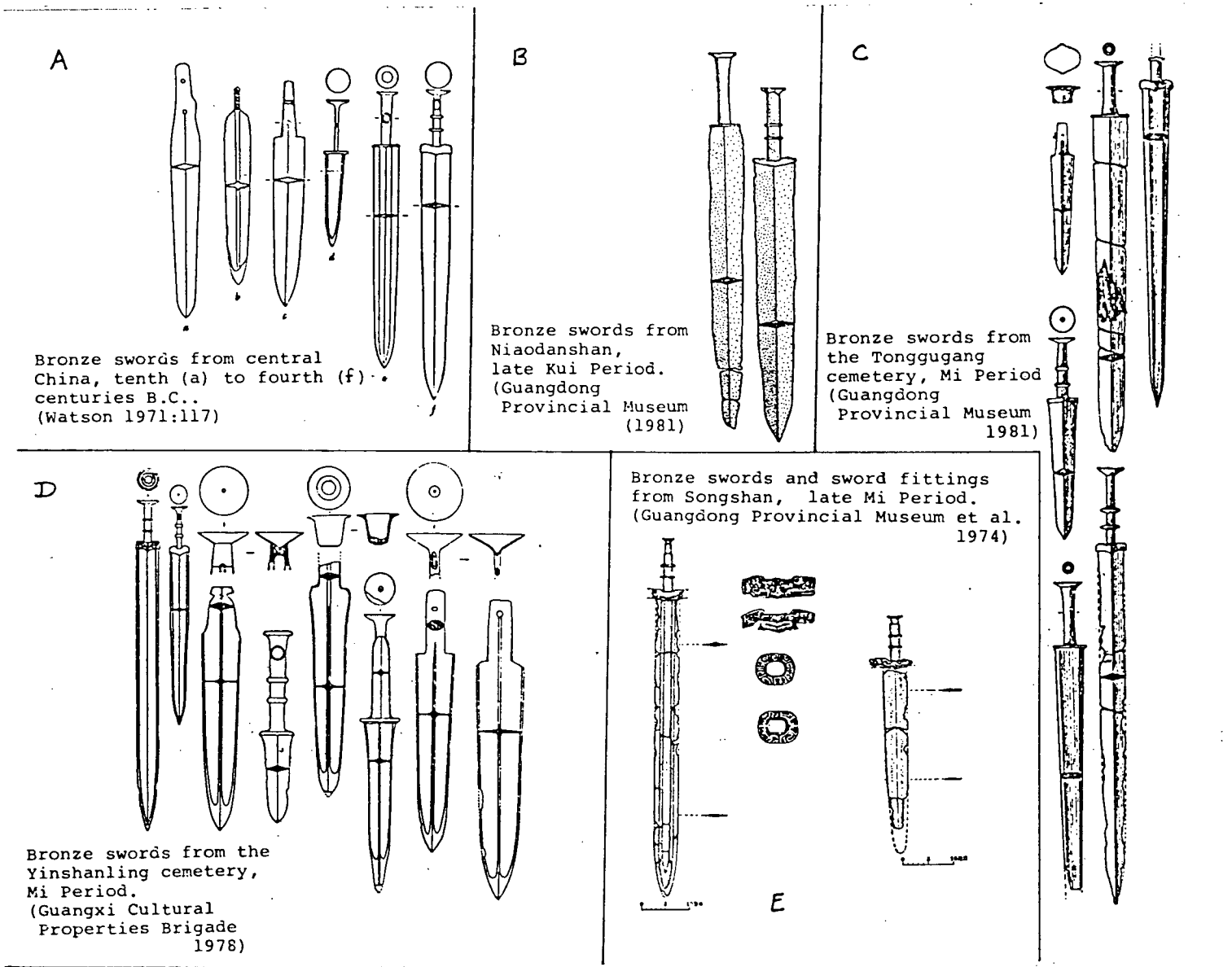


FIGURE 5.11: Bronze swords from central China and from Lingnan Geometric graves

Site	Total Grave Goods	Total Bronzes	Vessels: Total	ding	suggested imports	Reference
KUI PERIOD						
Matougang #1, Qingyuan C.	33	25	5	2	1 lei urn	11
Matougang #2,	42	39	1		1 lei urn	12
Jiahui, Gongcheng C., Guangxi	33+	33	8	5	1 lei urn 1 ding tripod	38
Luoding #1, Luoding C.	51+	at least 50	2		1 fou jar 1 he jar	49 p.214
Niaodanshan, Sihui C.	63	59	4	3	1 he pitcher	28
MI PERIOD						
Songshan, Zhaoqing Shi	138	108	14	5	all except one	49 p.214 35 p.77

TABLE 5.12: Distribution of "imported" bronze vessels in Lingnan burials

sites which show strongly the stylistic influence of Southern and South-western groups. Most common are the yue battle axe, and the "boot-shaped" axe (Figure 4.3). Such artifacts are not only widely distributed in all statuses of burials, but stone moulds for casting the yue have been found in sites in coastal Guangdong. Such items were therefore locally manufactured, and do not display the same status connotations as the northern materials. They do however indicate that contacts and exchange were also maintained with the South and Southwest.

Evidence for materials moving in the opposite direction, i.e. out of Lingnan, is largely circumstantial. Historical sources from the early Chinese States mention typically southern products as including pearls, ivory, alligator hides and turtle shells -- all of which are unfortunately almost invisible archaeologically except under extraordinary circumstances. The circumstantial argument for the export of these materials from Lingnan has the following points:

(1) it would be illogical for States to send valuable items such as bronzes into a neighbouring area unless they were getting something in return,

(2) historical records indicate that they were obtaining these materials from the South (how far south is a matter for debate),

(3) these products were available in the Lingnan Geometric area,

(4) they were procured by Lingnan inhabitants as evidence of faunal remains in Geometric sites attests (see Chapter IV),

(5) A major supplier of such materials to the North during the

eastern Zhou Period was the State of Chu (Peters 1983:352), and Chu was the major source of the elite materials entering the Lingnan Geometric network (Guangdong Provincial Museum 1979:329-330).

It seems reasonable therefore to conclude that the above-mentioned products were moving out of Lingnan in exchange for items such as bronzes, and further that such exchange was channelled through high status individuals and groups.

The one aspect of exchange systems not discussed in this section is the spatial distribution of facilities for storage/transferrence/marketing of products. The hierarchical and general spatial patterning of such facilities have figured prominently in recent analyses of exchange systems (Renfrew 1975; 1977). This aspect was omitted for the simple reason that there is at present no archaeological evidence for the identification of such patterning.

The potential for more in-depth studies of both internal and external exchange networks is great. It does rely however on further fieldwork to recover spatial information, or on physical and chemical analyses of materials aimed at identifying the distributional patterns of products such as fine ceramics and bronzes. The small locally-produced bronzes of the Hong Kong and Haifeng regions, for example, have been found to contain high proportions of lead, and little or no tin. Analysis of the mineralogical composition of different categories of bronzes from throughout Lingnan could potentially be used to trace production and exchange areas, and perhaps to

distinguish more reliably between local products and imports. With respect to ceramics the few kiln sites so far located can provide a basis for studying the areal distribution of particular ceramic wares. Such tests as these have the advantage that they can be carried out on materials already collected, and do not require immediate additional field research.

F. DISCUSSION

The thread I have tried to maintain throughout this long and rather diffuse chapter is an exploration of the developmental patterns in socio-political and economic components which are presently observable for the Geometric network in Lingnan.

The difficulty in distinguishing between each of these components is an expression of a basic feature of pre- and early-state level organization, i.e. that in these early stages of complexity all these components are tightly integrated into a single hierarchical structure, such that the development of one cannot be understood without reference to the others. This feature is observable in the correlation between economic control (access to prestige goods), political leadership and general social status in the Bronze and early Iron Age Geometric burials in Lingnan.

Some form of supra-local networking is evidenced by the rapid expansion of the Geometric pottery Horizon at the beginning of the period, and the consistency of transformational sequences in technological and stylistic features throughout the

entire region. At present however it can only be described as a general communication/interaction network whose precise dimensions have yet to be properly defined.

My own belief is that the ritual/alliance dimensions were the defining features, and not an underlying ethnic identity among its participants as Meacham (1983) has suggested. If ethnicity is a defining feature then we are at a loss to explain why the Geometric Horizon cross-cut older divisions between local groups in the Lingnan area, divisions which seem to have been maintained during at least the Late Neolithic phases of the Geometric horizon in different regional styles of lithic tools such as axes and adzes, and perhaps coarseware ceramics (Guangdong Provincial Museum 1979:327-328). It must also be noted that the strongest external connections of the Geometric horizon were to the interior, to the Jiangxi area, and were much weaker along the coast both to the north and the south. While the boundary between the "Bronze Drum Culture" of the South and Southwest and Geometric Horizon during the Bronze Age may well relate to a Thai/Austro-asiatic linguistic group boundary (Pulleyblank 1983:435), the northern distribution of Geometric ceramics crosses over linguistic boundaries, whether one follows the reconstruction proposed by Benedict (1975, see Meacham 1983:150, Bayard 1975:77), or that proposed by Mei and Norman (1976) and Pulleyblank (1983). It is therefore difficult to see that ethnic factors had a defining effect on the extent and integration of the network in Lingnan.

According to the typology taken as a basis for this

analysis, what levels did successive phases of the Geometric horizon relate to? Apart from an apparent brief and unsustained phase of incipient ranking in northern Guangdong at the very beginning of the Geometric Period, there is no evidence of anything other than egalitarian groups with achieved status distinctions until late in the Chevron Transitional Period.

The situation in the Kui and Mi Periods is much altered from the early Geometric Periods. There are very clear signs from at least the middle Kui Period of an elite group who held economic and political as well as purely social status.

The elaboration of this basic structure through a gradual increase in the amount of wealth controlled by the highest levels of the elite, and the apparent development of several levels within the elite group are the major developmental trends throughout the Kui and Mi Periods. There is as yet no clear evidence of the transition to a state level of organization: military power is still tied closely to general social status, and there is no distinct warrior class. There are no signs of urban centres or full-time craftspeople, and the highest-status burial thus far unearthed is distinctive primarily in terms of the amount of grave furniture it contains: ritual symbolic items are not qualitatively different from those of less wealthy high-status individuals.

The period which still remains the fuzziest in terms of these developmental patterns is the late Chevron 3 to early Kui Period. This is the crucial period of transition from the unranked Late Neolithic to the strongly ranked Bronze Age

societies. In the next chapter I shall present and discuss a framework for investigating the role of external input from more complex systems into the Lingnan network which will hopefully lay the foundations for investigating this transition in future.

VI. INTERREGIONAL INTERACTION AND LOCAL EVOLUTION

A. INTRODUCTION

I indicated in the previous chapter that the conceptual framework of cultural operation and development used in these analyses requires consideration of the roles of both internal and external forces in inducing or stimulating cultural change. In this chapter I shall be concerned with a more detailed investigation of the external inputs into the Lingnan area, and their effect on the specific evolutionary processes of the Geometric Period in that region.

Renfrew has argued that the mere existence of long-distance exchange networks does not neccesarily imply that such exchange played a significant role in the development of complex societies within a region (1975:36-37). In order to establish that input from neighbouring regions in the form of trade did in fact exert a conditioning effect on local evolutionary processes it is neccesary to demonstrate that it did link into and impact one of the internal subsystems.

The fact of input from northern States into Lingnan is established by the physical presence of northern manufactured items in Lingnan Bronze and early Iron Age sites, and by the incorporation of northern-derived stylistic elements into

locally-produced artifacts[18]. Such influences have been documented in the previous chapters with reference to the Initial Chevron Period (Shixia Culture) and the Kui and Mi Periods. The two issues to be considered are the form the input took, and the impact it had on the development of sociopolitical complexity within Lingnan.

B. THE NATURE OF EXTERNAL INPUT INTO THE LINGNAN REGION

Several forms of external input into a regional cultural network have been recorded historically and archaeologically. These may be divided into two general categories: "direct input", i.e. migration/colonization, or military conquest, and "indirect input", i.e. movement of material items or information in the absence of large-scale population movement or the establishment of external political control.

There is only one possibility of a population movement into Lingnan during the Geometric Period, and the evidence as presently reported is ambiguous. He (1981:217) states with reference to the Raoping burials that "there are quite large differences between the ceramics in the tomb assemblages and the commonly-seen geometric pottery, possibly they are the remains of another kind of culture." Elsewhere it is stated that the

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[18] It is not my intention to imply that the influence was unidirectional: certainly elements of southern styles and technologies, as well as southern products could have also moved into northern groups. This issue however is peripheral to the topic I have defined for this study, and therefore will not be explored here.

Raoping ceramics are similar to remains found in other graves in the northeastern counties of Huiyang, Chao'an and Puning (Guangdong Provincial Museum 1979:329). It is unclear how they compare with remains from habitation contexts in the same area because no detailed information on these sites has yet been published. However it should be noted that this phenomenon seems to be very localized.

Other than this there is no evidence at all of direct input from neighbouring areas into Lingnan either at the beginning of, or during the Geometric Period. The earliest Geometric ceramics, as Xu (1981) has argued, have obvious antecedents in the same area, and show an uninterrupted stylistic development.

The only historical account of a military incursion into Lingnan before the Qin invasion is the much-quoted passage from the Shi Ji , 'Biography of Sunzi and Wu Qi' which speaks of the King of Chu sending his General Wu Qi "south to pacify the 100 Yue" (eg. Guangdong Provincial Museum 1979:330, Guangxi Cultural Properties Brigade 1978:250). No direct archaeological traces of such an event have been found, and there is no visible change in the degree or nature of Chu influence in Lingnan at that time (early Warring States Period). Neither do the historical references imply that it was a particularly large-scale operation (Guangxi Cultural Properties Brigade 1978:250). In all these respects Wu Qi's expedition stands in strong contrast to the Qin invasion of the early third century BC, when northern control was extended over Lingnan. On these bases such military encounters do not represent direct input as defined

above. Therefore what input the neighbouring groups had into the Lingnan network was apparently indirect.

The hypothesis that the input of the northern groups into Lingnan was through the medium of material exchange is based on recognition of the importance of such exchange systems to the maintenance of the complex hierarchical structures of the northern States. Friedman and Rowlands (1977:211-213; 219-220; 270-71) have forcefully argued that control over trade in exotic materials and products is a symbol, a source, and a justification of elite status and power in complex societies such as existed in northern China and the Yangtze during this period. Such an association between trade and elite status has been noted also by many other students of complex societies. One feature of the development of hierarchical organization and the concomitant expansion of elite groups is their need to draw increasingly more on distant sources of exotic materials. The gradual expansion of exchange networks into peripheral regions is therefore one consequence of the development of such complex systems. Historical and archaeological evidence from the early Chinese States indicate that such a mechanism was indeed an important feature of elite status at that time (Chang 1980:153-157; 366). The Shang state was drawing on the Yangtze and southeast coastal regions for such resources as ivory, turtle plastrons and cowrie shells (Chang 1975; 1980:153-7, Mei & Norman 1976:291). Heavily Shang influenced proto-urban centres were located in the lower Yangtze (Hushu Culture), central Jiangxi (Wucheng site) and the Wuhan area (Panlongcheng site)

already by the Erligang phase (circa 1800-1500 BC: Chang 1980:297-306, Wen Wu Correspondent 1979:57-59). During the Eastern Zhou Period the central Yangtze State of Chu was famous as a supplier of elite products such as ivory, rhinocerous horn, feathers, gold, gems, and pearls, at least some of which it must have acquired through trade with neighbouring areas (Peters 1983:352)

The items being exchanged into Lingnan, on the basis of the archaeological evidence, were manufactured items such as bronze vessels and weapons , and on the basis of present evidence this trade is most visible from the middle to late Kui Period (late Spring & Autumn). The beginning of the Eastern Zhou (Spring and Autumn Period) marks a transition to a commercially-oriented economy, one result of which was the 'devaluation' of bronze vessels from purely elite ritual items to items of wealth to be used freely in exchange transactions (Chang 1977:349-351, Friedman and Rowlands 1977 :249) . We might thus expect a change in the quantities and types of vessels appearing in the Lingnan network from the Eastern Zhou Period.

The notable stylistic influences from the North also include non-artifactual domains such as grave pit form (for example grave ledge and waist pit), indicating that exchange was not totally material but also ideational. It is therefore probable that it involved movement of individuals between regions.

In order to generate specific expectations about the impact of northern input into the Lingnan network we must also consider

the organizational level of each of the groups involved, since the nature of long distance exchanges differs at different levels of organizational complexity (Friedman and Rowlands 1977 :206-238). Table 6.1 shows the temporal correlations between the structural organization of Lingnan and Yangtze cultures, and the specific developmental stages of the Chinese State as defined by Friedman & Rowlands (1977). This then is the structural "landscape" affecting interaction between Lingnan and the north.

The above discussion defines the general features of the external input from more northerly groups into Lingnan. In the remaining part of this chapter I shall outline and investigate some specific implications regarding the nature and degree of impact of such interregional interaction on the development of social complexity in Lingnan.

C. THE IMPACT OF INTERREGIONAL INTERACTION

1. Exchange And Elite Status

The nature of external impact depends first on preexisting internal conditions. The potential for intensifying local hierarchies must first exist, before the inflow of prestige goods and the organizational demands of maintaining the exchange network can provide opportunity and stimulus for hierarchization to occur. If the process of hierarchization is linked with such external input then we should expect traded items to be concentrated in the hands of the elite or, archaeologically speaking, in contexts associated with them such as elite centres

Period	Lingnan	Central-lower Yangtze	Model (Friedman & Rowlands 1977)
CHEVRON 1	Tribal incipient ranking (North only)	Tribal incipient ranking	Tribal
2	unranked, achieved status distinctions		
3	(late) incipient ranking? (Northeast only)	complex Chiefdoms,	Asiatic State
		early State?	Prestige Good System (centrifugal phase)
KUI	Chiefdoms	State	Prestige Good System (centripetal phase)
MI			

TABLE 6.1: Levels of sociopolitical complexity in Lingnan and the Yangtze area, compared with developmental stages of the Chinese state

or burials. There is also the potential that the external links of elite groups will be symbolized stylistically on locally produced elite products.

Discussion

I have not attempted to assess quantitatively the relative amounts of externally-manufactured products in elite graves in Lingnan because of the difficulty of distinguishing imports from local products on the basis of the information at hand. However, superficial investigation of the artifact remains from elite Bronze and Early Iron Age graves seems to indicate such an association (see previous chapter, Table 5.12). The highest status Lingnan burial in Zhaoqing is described as evidencing an extremely high degree of "Chu influence", and certainly contains a number of bronze vessels and accessories which at least appear to be of Chu manufacture (Guangdong Provincial Museum et al. 1974:77; Figure 5.10 c). Lower status elite burials contain numerically and proportionately less objects of Chu influence or manufacture. Middle status items such as 'ding' tripods and bells are described as being local in styles, and of local manufacture (Peters 1983:251; He 1981:214-216). Most items of military equipment, although most probably manufactured within Lingnan, show the stylistic influence of Chu very strongly (Figure 5.11); in general these are the only "foreign style" artifacts contained in the lower status graves.

This expectation may also be fulfilled with respect to the Initial Geometric phase of the Shixia Culture. In this case

also it is impossible to quantify the relationship between high status burial goods and external influences, but the burial ceramics are very clearly of Yangtze area styles (Figure 6.1, Su 1978, Gao and Shao 1981). Lowest status burials (i.e. those

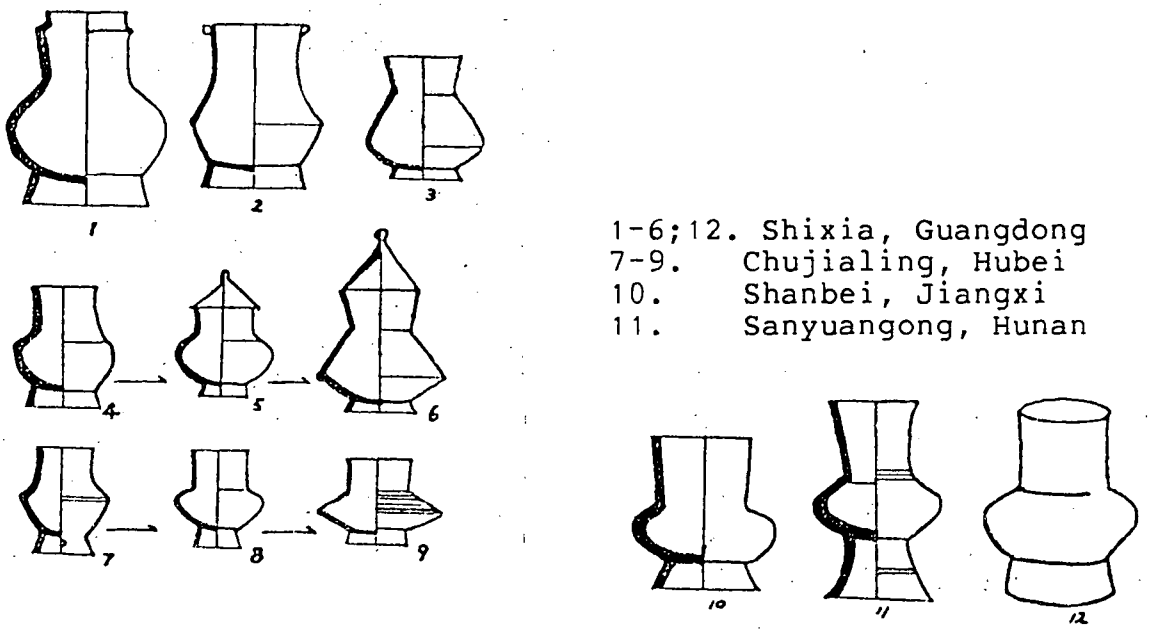

FIGURE 6.1 : Comparison of ceramic hu vessels from Guangdong with examples from the Central Yangtze area. (Zeng 1982)

with the smallest pits and least amount of grave goods) rarely contain any ceramic pieces. High status badges such as cong and jade ornaments are also identical with Yangtze examples (Su 1978). Hopefully it will become possible to explore this question further in future upon publication of a detailed site report from Shixia.

2. Spatial Implications

The second implication I shall explore concerns the spatial patterning of elite centres within Lingnan. It derives in part from the nature of the interaction between trade and status distinctions in the external system. Closer and more complex (therefore more demanding) systems should have the greatest input, and therefore the greatest potential for impacting the internal network of neighbouring areas. The effects of the impact of the most demanding external system should be archaeologically visible in the spatial patterning of nodes in the internal network. Specific implications have been derived from the dendritic "gateway" model which applies to situations where the pressure of external trade is strong, communication routes are limited by topographic/transportational factors, and population is relatively sparse (Hirth 1978). The "gateway" model outlines how, under these conditions, the location of nodal centres within a region is affected by the "pull" of external trade channeled through a gateway community (Figure 6.2)

However, the demands of external trade are not the only forces influencing the spatial patterning of nodes within a regional network. The internal factors which influence spatial patterning of settlements include features of the natural environment such as land suitable for habitation, and the distribution of intraregional communication routes. In the case of Lingnan these are both conditioned by the river networks as

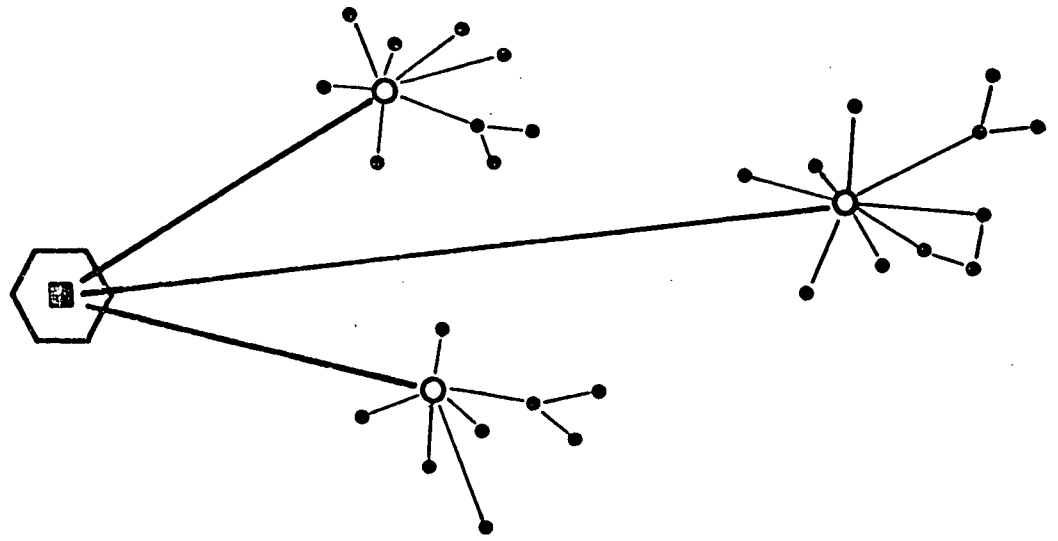

FIGURE 6.2 : Model of the dendritic market network. (Hirth 1978:38)

was outlined in Chapter IV. Where internal exchange networks exist the spatial distribution of resources is an additional factor, and in the presence of an organizational hierarchy the location of nodes will also be related to areas most important for coordinating and controlling the movement of goods and information between dispersed communities. The actual settlement pattern manifested in a specific region is thus a result of compromise between all of these (sometimes conflicting) demands (Conrad 1978).

The presence of strong external trading relationships introduces another complicating factor which must be reconciled with the above internal requirements. If we view the internal factors as providing a basic pattern, then the "pull" of external trade can be seen as acting to distort the internal network, strengthening the status of centres which are preferentially located with respect to external trade routes.

From this general model I have derived two specific expectations regarding the spatial patterning of elite centres in the Lingnan Geometric network which should be fulfilled if indeed the external trade network is exerting a conditioning effect on local hierarchies. These are:

(1) high status centres within Lingnan should tend to be clustered with respect to the major communication routes between Lingnan and its most demanding neighbour.

(2) as the spatial location of the most demanding external system changes, the relative importance of different routes should change accordingly.

A final step that is necessary before mapping the distribution of elite centres is to define the main communication routes between Lingnan and the North. As I have outlined above, natural communication routes in the prehistoric periods followed the rivers and seacoast because of topographic and environmental constraints. On Figure 6.3 the main river routes connecting Lingnan with the Xiang River valley of Hunan (and therefore to the centre of Chu) are shown in orange; those which connect to the Gan River drainage of Jiangxi are indicated in green. Coastal routes might be expected to terminate/originate at any point along the coastline, but if communication from coast to interior is counted as a factor, then the deltas of the Han and Pearl Rivers should exert the greatest pull on coastal traffic.

Discussion

Information on the distribution of settlement hierarchies does not yet exist for the Geometric Period, therefore I shall use the distribution of high status burials to indicate the approximate location of nodes in the status network. The first clear evidence of established status differentiation in Lingnan comes from the Kui Period. At present then, these implications can only be properly compared with Kui and Mi Period spatial patterns.

The strongest neighbouring centres during the Geometric Period were located in the central Yangtze, in the areas of Lakes Tungting and Poyang. Early in the Shang period the closest centre was Wucheng, located south of Lake Poyang in the Gan River valley of Jiangxi. By late Western Zhou a number of rival States was established in the central and lower Yangtze; these states were extending their influence southwards into central Hunan and along the Zhejiang coast (Chang 1977:410-420; 1980:297-306; 311-316; Figures 84 & 88). During the Kui and Mi Periods the centre of power in the Yangtze shifted towards the Hunan-Hubei region as Chu successively conquered its neighbours (Chang 1972:5-7). We should therefore expect that during the late Chevron 3 Period the main inputs into Lingnan should be directed through the Gan River valley of Jiangxi, while inland routes to Chu (i.e. the Xiang River connections) should grow in importance from at least the middle of the Kui Period, and predominate by the Mi Period. The location of elite status burials should thus be biased towards the predominant routes in each Period.

Judging from the distribution of Kui and Mi Period elite burials shown on Map 6.1 the spatial patterning of status centres in those periods does conform to the stated expectations: The majority are clustered along the routes leading towards Chu. It is interesting also that the highest status burials in each of the Kui and Mi Periods (Niaodanshan and Songshan respectively) are located in the vicinity of the Sanshui area of the Pearl River Delta which, in terms of internal factors is the central point for coordinating the flow of goods and information from all parts of Lingnan (Figure 6.3).

The data from the late Shang and Western Zhou (Chevron 3 Period) in Lingnan are too thin at present to draw any firm conclusions regarding the spatial aspects of hierarchization at that time. What little evidence exists (i.e. from the Shuikou and Raoping sites) points to the Northeast corner of Guangdong as the earliest centre for social status differentiation, specialized production and northern technological influence (Guangdong Provincial Museum 1979:330; 1983). The influence of northern contacts is thus certainly visible in this area of Guangdong. However, the absence of similar remains in the rest of the Province may not indicate that the northeast was the only area displaying external influence at this time. No sites of this period have been excavated in Northern and Western Regions (although many are known from surface reconnaissance). On the basis of the model one would expect the Northern Region to display evidence of similar external contacts with the Jiangxi Shang Period sites, but for the moment this question, and

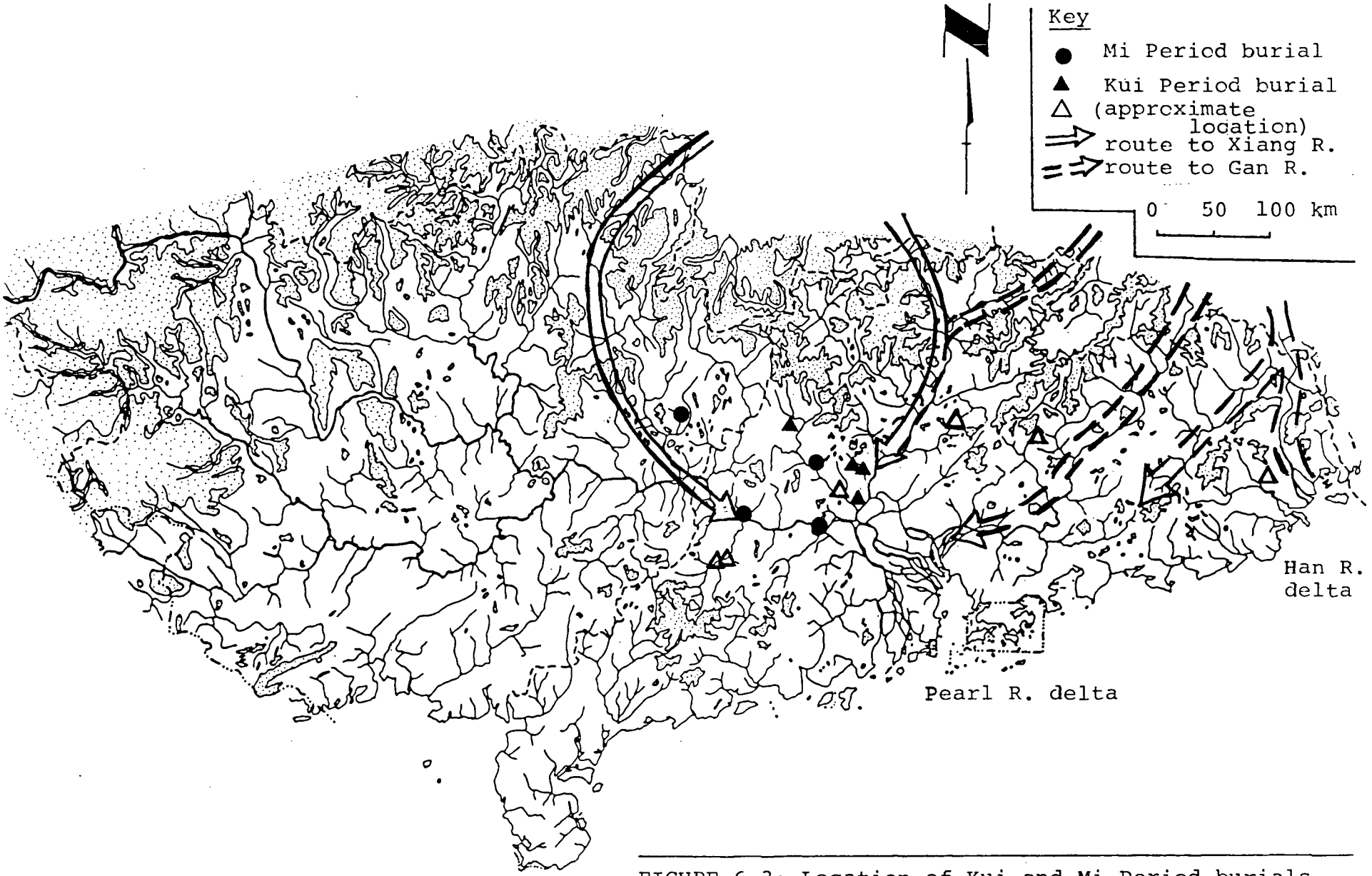

FIGURE 6.3: Location of Kui and Mi Period burials with respect to external communication routes

therefore the second expectation outlined above will have to remain unresolved.

D. CONCLUSIONS

That the input of the northern States into the Lingnan region was through the medium of exchange is indicated by historical evidence from the States themselves. That this trade was not always completely peaceful is attested to both by historical references as well as by the presence of well-used military equipment in Lingnan graves. The main point in this chapter was to explore the hypothesis that the interchange between the North and Lingnan, which was most probably through the medium of exchange, did have an important effect on the developing sociopolitical hierarchies of Lingnan groups.

This hypothesis is supported by at least 2 lines of evidence:[19]

(1) externally produced and styled goods seem to be consistently associated with the highest levels of the Lingnan elite,

(2) the spatial location of the elite centres within Lingnan during the late Geometric was apparently influenced by the location of the strongest trading partner in the Hunan area. The presence of the external state-level system thus appears to have exerted an influence on the internal status hierarchies within Lingnan, and the observable patterns therefore cannot be

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[19] lack of appropriate data render it impossible to construct adequate deductive tests of this hypothesis at present.

adequately accounted for by local factors alone.

VII. CONCLUSIONS

The two general goals of this research have been to fill in the vacuum that exists in Western-language studies of the late Prehistoric period in South China, and to begin the process of building and refining an explicit framework for the study of social developments during this period.

The first stage of this study involved compilation of the relevant literature on the subject area published over the past 30 years. On the basis of these sources I made a brief assessment of the archaeological work on prehistoric sites that has been carried out in Guangdong and Guangxi, and of the nature and detail of information that has been published in Chinese sources. The sources clearly indicate that a great deal of archaeological reconnaissance work has been undertaken in Lingnan, particularly in Guangdong Province. Although the published information currently available outside of China is not sufficiently detailed to make spatial studies possible there are indications in some of the most recently-published reports that regional site patterning studies are beginning to be an important focus of archaeological research (Guangdong Provincial Museum 1983b, 1984). The excavation work that has been carried out has been designed within an explicitly historical framework. It has therefore contributed greatly to filling in details of the chronology on both the regional and local scales, however, excavation work is still in its early stages in Lingnan and only a few sites have been excavated at all. Consequently there are

a number of regions and a number of chronological periods whose main features are still unclear. Fortunately the general ceramic sequence is well understood, and the chronological relationships between excavated sites is clearly defined.

One important chronological feature which has only become clear from the most recently published radiocarbon dates is the great time-depth of the Horizon. As late as 1977 Chang wrote that the Geometric Horizon began at approximately 1500 B.C. (1977:414). Geometric cultures have since been dated to 3000+ B.C. in Jiangxi, and from circa 3000 B.C. in northern Guangdong. Despite this greater depth I have chosen to retain the term "Horizon" in order to emphasize the close relationships between the Geometric ceramics in Lingnan and those in other regions of South China.

The bulk of this study (Chapters V and VI) was taken up with my second general goal of investigating the development of social complexity in Lingnan during the Geometric Period. The basic issue I have addressed is the debate over the role of external versus internal stimuli in the developments observed during this period. I have argued on a general level that one cannot study processual change completely on the internal scale because by their nature cultural systems are open to both internal and external stimuli for change. Therefore, if one is interested in studying the development of social complexity it is neccesary to use a framework that can comprehend both internal and external factors. The framework I have used here to study the developmental patterns within the Lingnan Geometric

periods was drawn from studies of the development of complex societies in Europe during the Late Neolithic to early Metal Ages, because there are many structural similarities between this situation and that of Lingnan during the Geometric as I outlined at the beginning of Chapter V.

Evidence for the development of sociopolitical and economic hierarchies drawn from published sources was analyzed in light of the general developmental schemes of Fried and Service, as outlined by Flannery (1972). Analysis of the social and political components relied primarily on mortuary data - on the presence and degree of differentiation between contemporaneous burials in the amount of wealth and energy expenditure on grave preparation, and on symbolic and stylistic manifestations which seem to indicate status differences between individuals and groups. Both general technological developments and organizational features were considered under the manufacturing component. The sources of information used here were the technological features of the artifacts themselves, and the sites where they were manufactured. Analysis of exchange systems similarly relied on artifact data to infer the existence of internal exchange in ceramics and metals, and interregional exchange in elite bronzes.

In general, there is strong evidence of the development of ranked chiefdom-level societies by the Kui period. Some degree of craft specialization is apparent for fine ceramics and metals, and indications are that there may have been fairly wide circulation of both of these products. Interregional exchange

is more clearly evidenced by the presence of externally manufactured bronzes in Lingnan Geometric graves, while historical sources indicate that special raw materials such as pearls and ivory, which were of high value to elite groups in the north, were being exchanged out of Lingnan in return.

In Chapter VI I explored the specific issue of external input into Lingnan more thoroughly with two questions in mind:
(1) what form did this input take?
(2) what impact (if any) did it have on the development of hierarchical organization in Lingnan?

With reference to the first question, there is no evidence of direct input from neighbouring regions in the form of conquest or colonization during the Geometric Horizon itself. There is, on the other hand reason to believe that trade in elite goods and raw materials linked Lingnan Geometric groups with the Chinese States to the north. I have thus argued that interaction between the two areas was indirect and was through the medium of exchange. The hypothesis that this input from the neighbouring northern States did influence local hierarchical development was tested by two lines of evidence. First, the nature of imported goods and their distribution within Lingnan were investigated. Imports were found to be the highest quality elite goods found in Lingnan graves; furthermore, they were distributed in only the highest status contexts. This therefore indicates there was a close involvement of the highest levels of the Lingnan elite in external trade. Secondly the spatial location of high status graves with respect to interregional

communication routes was examined in order to determine whether the location of central nodes within the Lingnan geometric network was influenced by the presence of trading links with the northern States.

The spatial patterning of elite burials during the Bronze and early Iron Ages was found to conform to the expected patterning under the hypothesis that external factors were exerting a direct influence. Thus I concluded from this investigation that not only was external trade integrally linked with elite social and economic status within the Geometric network, but also that it exerted a conditioning effect on the location of greatest hierarchical development during the late Geometric. In view of these interrelationships between external States and the Lingnan Geometric cultures it is clear that a Local Evolution Model which does not allow for the impact of external factors is inadequate to explain the development of social complexity within Lingnan during the Geometric Period. However, this does not imply that "external dominance" models are any more defensible. As I have argued throughout this study, the most appropriate framework for investigating these problems is one which can incorporate both sources of variability.

This study represents only an initial step towards exploring the development of complex societies in Lingnan during the late Prehistoric period. There are many issues and avenues for further research which I have of neccesity touched upon only briefly. All are worthy of far more intensive investigation

than I have been able to provide here. The published report of the cemetery site at Yinshanling, for example, contains a great deal of data which might be used to study social subgroupings and other aspects of status through analysis of the symbolic aspects of grave assemblages, spatial analyses of the graves and so forth. The preliminary tabulations I have relied upon to indicate distinctions of wealth and status could also be expanded upon and strengthened.

As far as mortuary analyses in general are concerned it is to be hoped that detailed information from cemetery sites of the earlier Geometric periods might soon become available, as there are many questions about the transition from egalitarian to ranked societies at the end of the Late Neolithic which might thus be clarified. In particular there is the intriguing issue of the Shixia Culture, and the apparent initiation and sudden disappearence of status differentiation at the very beginning of the Geometric period in this northern region of Guangdong.

There is much work to be done on the definition of style zones in lithic artifacts, and their relationship to the changing patterns of ceramic (fineware) style horizons between the pre-geometric and Geometric periods.

The stylistic divisions and external affinities of the bronzes are another issue I have only mentioned in passing, but it is one which may have a great import for understanding the interaction between Lingnan Geometric groups and the Bronze Age cultures of the South and Southwest. Certain features such as the yue and "boot-shaped" axes have obvious affinities to the

south and southwest (Guangdong Provincial Museum 1979:329-330), and indicate that interchange between these areas also were frequent. The nature of this interchange, and the reasons why it does not seem to have been linked with status differentiation as was the northern trade are important matters for further study.

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APPENDIX A - GEOMETRIC SITES IN GUANGDONG PROVINCE

KEY:

Site:
Haifeng sites - bracketed names are those used by Maglioni (1975)

Detail

basic - site is listed as containing Geometric ceramics; no further information on ceramics is available

general - information on Geometric surface patterns and ceramic wares is given; other artifact types indicated. No quantities or proportional information given

individual - quantities and/or proportional information on all classes of artifacts is provided

mixed - some classes of artifacts are detailed individually, others are described in basic or general detail only

References

numbers refer to Bibliography in Table 2.1

Area/County	Site	Fieldwork	Detail	References
East Coast				
Chao'an	Meilinhu	surface reconnaissance	individual	9, 86
	Songlinfeng	"	basic	81
	Zhuganshan	"	general	9,17
Chaoyang	Chiniushan	test excavation	mixed	25
	Fenjikengshan	"	individual	8
	Hulushan	surface reconnaissance	"	8
	Jiudouweishan	test excavation	"	8
	Jiuling	"	basic	25
	Niutouping	"	"	25
	Xiangshan	"	"	25
	Zoushuilingshan	surface reconnaissance	individual	25
	Zuoxuangongshan	excavation	mixed	25
Dabu	Caowolong	surface reconnaissance	general	51
	Damending	"	"	51
	Dongzigang	"	"	51
	Gaodongling	"	"	51
	Gongyingding	"	"	51
	Guantouling	"	"	51
	Heshangding	"	"	51
	Keshuwan	"	"	51
	Liantanghuanshan	"	"	25

Area/County	Site	Fieldwork	Detail	References
(Dabu)	Makengkou	surface reconnaissance	general	51
	Pengpozhai	"	"	51
	Qidoushan	"	"	51
	Shanxialong	"	"	51
	Shanziping	"	"	51
	Tongtianlazhu	"	"	51
	Weibeidong	"	"	51
	Wubeishan	"	"	51
	Wuhushan	"	"	51
	Xianlixiaoxue	"	"	51
	Yaobeigang	"	"	51
	Yingdinghu	"	"	51
	Yuandongshan	"	"	51
	Zhaiziji	"	"	51
Fengshun	Tangkeng	"	"	69
Haifeng	Baolou (POL)	"	"	57
	Baziyuan (PAT)	excavation[1]	"	57
	Dongkengbei (TAN)	surface reconnaissance	basic	57
	Dongkengnan (TAS)	test excavation[1]	general	57
	Dongkengzhong (TAM)	surface reconnaissance	basic	57
	Guogangshan (KUE)	"	"	57
	Hudong (OUT)	"	"	57
	Jingwei (KEB)	"	general	57

Area/County	Site	Fieldwork	Detail	References
(Haifeng)	Nantingbei (NAN)	surface reconnaissance	basic	57
	Nantingnan (NAS)	"	"	57
	Niudu (GUT;TOU)	"	"	57
	Pushangdun (POU)	"	"	57
	Qiaozitou (KIW)	"	"	57
	Sanjiaowei (SAK)	"	general	57
	Shakengnan (SOS)	"	"	57
	Shakengzhong (SOM)	"	"	57
	Shigongliao (SIK)	"	basic	57
	Shigu (KOU)	"	"	57
	Shijiaotong (ZIT)	"	"	57
	Shizidi (SAI)	"	general	57
	Xinjing (SIN)	"	"	57
	Zhenxiang (ZEN)	"	basic	57
	Zhulingjiao (TEK)	"	"	57
Jieyang	Chongguanyan	"	"	69
	Huangqishan	"	general	69
	Hutouling	"	"	69
	Miaoshan	"	basic	25
	Moukuangshan	"	general	17
	Xinxihe	"	"	49
Puning	Hongshan	"	basic	69
	Kuyangfu	"	"	69

Area/County	Site	Fieldwork	Detail	References
(Puning)	Tieshan	surface reconnaissance	basic	69
Raoping	Dingdapushan/ Tazijinshan	excavation	basic	49,29
East River				
Boluo	Guhechuangdi	?	basic	49
	Hulushan	surface reconnaissance	"	25
	Huangchaodun	"	"	25
	Sugangling	"	"	25
Heyuan	Daoshishan	"	general	80
	Duimenling	test excavation	"	80
	Liantangpaishan	"	basic	25
	Longzushan	"	general	80
	Shenlingxia	"	"	80
	Shiziling	surface reconnaissance	"	80
	Weizishan	"	"	80
	Yuandunling	?	basic	81
Huiyang	---	surface reconnaissance	"	49,81
	Jinzubu	"	"	81
Longchuan	Dajiangcun	"	individual	81
	Kengzili	excavation	basic	25, 29

Area/County	Site	Fieldwork	Detail	References
Mei Xian	Ailing	surface reconnaissance	general	51
	Baokeng	"	"	51
	Jixia	"	"	51
	Chang'ercun Yuanling	"	"	51
	Chengjiangji	"	"	51
	Dahuyang	"	"	51
	Guanyicun	"	"	51
	Jingtounao	"	"	51
	Liaowubei	"	"	51
	Longsheba	"	"	51
	Luowucun	"	"	51
	Luowuling	"	"	51
	Mabawei	"	"	51
	Shali	"	"	51
	Shangkeng	"	"	51
	Shuangbaying	"	"	51
	Songguangping	"	"	51
	Songlin	"	"	51
	Taishanding	"	"	25
	Xiongwu	"	"	51
	Xuankeng	"	"	51
	Xuankeng xiaoxue bei	"	"	51
	Yuanling	"	"	51

Area/ County	Site	Fieldwork	Detail	References
Pingyuan	Danganzhai	?	basic	31
	Shuikou	excavation	individual	31
Wuhua	---	surface reconnaissance	basic	57
	Dongshanshangling	"	"	25, 81
	Zijinshan	?	"	81
Xingning	Jiadi'aoshan	surface reconnaissance	"	25, 81
	Shachuannao	"	"	25, 81
	Shijizishan	"	"	25, 81
	Shuikou	"	general	70
	Wuhoushan	"	basic	25
	Yaotouling	"	"	25
Zengcheng	Jinlansi	excavation	general	64, 79
	Tianmashan	?	"	49
	Xigualing	excavation	individual	15
Zijin	Zaiguangding	test excavation	"	27
Northern				
Conghua	Huagutai	surface reconnaissance	general	80
	Weizinao	"	"	58
	Zhuguling	"	"	58
Fogang	--- (Bronze Age burial)	excavation?	basic	49

Area/County	Site	Fieldwork	Detail	References
(Fogang)	Lunbianling[2]	?	basic	49
Lianping	Aizhaishan	surface reconnaissance	general	80
	Daweishan	"	"	80
	Foge'aoshan	"	"	80
	Jinkengshan	"	"	80
	Keniaoshan	"	"	80
	Linggangdingshan	"	"	80
	Longzhuwoshan	"	"	80
	Madonghuanshan	"	"	80
	Nichenglingshan	"	"	80
	Pengshan	?	"	49
	Shichunkengshan	"	"	80
	Shixialing	"	"	80
	Yuanlingshan	"	"	80
Qingyuan	Dagangshan	"	basic	23
	Dashan	test excavation	general	23, 61
	Dashi (yueshan) gang	"	"	23, 61
	Gaowangshanjiao	surface reconnaissance	"	61
	Huanggoujushan	test excavation	basic	61
	Liangdongdingshan	surface reconnaissance	"	61
	Lihedishan	test excavation	general	61
	Matougang #1	excavation[1]	individual	11
	Matougang #2	excavation	"	12

Area/County	Site	Fieldwork	Detail	References
(Qingyuan)	Niumiandishan	test excavation	basic	61
	Niutoushan	surface reconnaissance	"	61
	Siguishan	test excavation	"	61
	Wanggangling shanjiao	surface reconnaissance	"	61
	Xishan	test excavation	general	23, 61
Qujiang	Huang'etangshan	"	"	23
	Lingshangang	surface reconnaissance	basic	90
	Matiping	excavation	individual	14
	Nianyuzhuan	"	"	14
	Pushaoshan	"	basic	90
	Shixia	"	mixed	36, 71, 89, 90
	Shitoushan	surface reconnaissance	basic	90
	Shuigeling	?	"	49
Shaoguan Shi	Zoumagang	excavation	individual	14
Shixing	Baishipingshan	"	"	15, 65
	Chengpicun	"	basic	90
	Xincun	"	"	90
Wengyuan	Jiangtoushan	surface reconnaissance	"	23, 49, 63
	Jihanbei	"	"	81
	Xianfoyan	excavation	"	23, 24

Area/County	Site	Fieldwork	Detail	References
Xinfeng	Qianggang, Matou	?	basic	49
Central				
Bao'an	Bangdishan	surface reconnaissance	individual	62
	Ejingshan	"	basic	21
	Gaoliaoshan	test excavation	individual	62
	Huangqilinshan	surface reconnaissance	basic	62
	Huangzaobuyushan	test excavation	individual	62
	Jianggongdiaoyushan	surface reconnaissance	basic	62
	Jinkangshan	"	individual	62
	Nanxiashan	"	"	62
	Sanjiaoshan	test excavation	"	62
	Simeishan	"	"	21, 62
Dongguan	Shangmaicun	surface reconnaissance	basic	49
Doumen (see Zhuhai)				
Enping	Chahangcun	"	"	21
Foshan Shi	Dadun	"	"	83
	Hedang	excavation	mixed	48, 83
	Shangmaicun	surface reconnaissance	basic	83
	Shencun	"	"	83
	Shiziqiao	"	"	83

Area/County	Site	Fieldwork	Detail	References
Gaohe	Dahonggang	surface reconnaissance	basic	21
	Luoshagang	"	"	21
Guangzhou Shi	Fei'eling	test excavation	general	58
	Hongshizhugang	"	"	58
	Lingtanggang	"	"	58
	Masongtougang	surface reconnaissance	"	58
	Mingxinggang	test excavation	"	58
	Qingshangang	"	"	58
	Shuilugang	"	"	58
	Xiganghuan	"	"	58
	Xiangang	surface reconnaissance	individual	46
Nanhai	Baishancun, Locality #1	"	basic	33
	Chuanligang	"	"	33
	Dagangtou	"	"	33
	Dakenggang	"	"	33
	Dongshicun (Datong car park)	"	"	33
	Huixingyutang	"	"	33
	Hutougang	"	"	33
	Liangwanggang	"	"	33
	Luogang	test excavation	"	33

Area/ County	Site	Fieldwork	Detail	References
Zhongshan	Wangjiazhuangqian	surface reconnaissance	basic	21
	Yandunjiao	"	"	21
Zhuhai	Huazishicun	"	"	21, 63
	Tanglangjia	"	"	21
West River				
Deqing	Luoyanshan	excavation	individual	34
Gaoyao	Maogang	"	"	37
Guangning	Tonggugang	"	"	30
Huaiji	Lanmashan	"	basic	49
Luoding	Luoding #1	"	"	49
	Luoding #2	"	"	49
Sihui	Fohugang	surface reconnaissance	"	13
	Gaodiyuan #1	excavation	"	49
	Jiangjugang	surface reconnaissance	"	13
	Niaodanshan	excavation	individual	28
	Tianzigang	surface reconnaissance	basic	13
	Zumiaogang	"	"	13
Xinxing	Aishanzi	"	"	13
	Dadushan	"	"	13

Area/ County	Site	Fieldwork	Detail	References
(Xinxing)	Danganshan	surface reconnaissance	basic	13
Zhaoqing Shi	Songshan, Dianhuachang	excavation	individual	35
Southern				
Dianbai	Liantoushan	surface reconnaissance	basic	10
Leizhou	Chiniling	"	general	10
Maoming Shi	Chenglianling	"	basic	10
Xinyi	Songxiangchang	"	individual	78
Yangchun	Gangbei	?	"	49
Yangjiang	Mangling	surface reconnaissance	basic	10

Notes:

[1] uncontrolled excavation

[2] this may be the same site as the one above: sources are unclear

APPENDIX B - GEOMETRIC SITES IN GUANGXI PROVINCE

Key:

(see Appendix 1)

Appendix B (continued)

County	Site	Fieldwork	Detail	References
Beiliu	Dalun	surface reconnaissance	general	43
	Dayuanshan	"	"	43
	Gaoposhan	"	"	43
	Hululing	"	"	43
	Tongshiling	"	"	43
	Toudushan	"	"	43
	Wutangling	"	"	43
Binyang	Luwei	none	individual	41
	Xinbin	"	"	16, 41
Cangwu	Pojieshan	surface reconnaissance	general	43
Cenxi	Dabing	"	"	43
	Pansheling	"	"	43
	Taiping	"	"	43
	Xilan	"	"	43
Dongxing	Bailongtai	"	"	10, 43
	Niutoucun	"	"	43
Fuchuan	Chakouyan (Liyushan)	test excavation	"	42, 43
	Dashan	surface reconnaissance	"	43
	Dongzhuang	"	"	43
	Maozishan	"	"	43

County	Site	Fieldwork	Detail	References
Gongcheng	Jiahui	none	individual	38
	Longtangling	surface reconnaissance	general	43
	Tongle	"	"	43
Guanyang	Aishan	"	"	43
	Daxishan	"	"	43
	Guchanggang	"	"	43
	Jianguling	"	"	43
	Jinjialing	"	"	43
	Kuzhushan	"	"	43
	Lashutang	"	"	43
	Mashanbei	"	"	43
	Sanjiaotang	"	"	43
	Zhongshan*	?	"	41, 43
Guilin Shi	Shiziyan	"	"	43
Heng Xian	Zhenlong*	none	individual	16, 41
Hepu	Bailong	?	basic	43
	Qingshuijiang	surface reconnaissance	general	10, 45
He Xian	Niuyancun	"	"	43
	Sanchuanbei	"	"	43
	Wujia (Guiling)	test excavation?	"	16, 43

County	Site	Fieldwork	Detail	References
(He Xian)	Wuying	surface reconnaissance	general	43
	Wuzhishan (Zhonghua)	"	"	42, 43
	Xiniucun	"	"	43
Lingshan	Longwu	"	basic	81
	Maluling	"	general	10
Lipu	Limu*	?	individual	42
Luchuan	Wushi*	?	"	42
Nanning Shi	Nahong Commune*	none	"	41
Pingle	Yinshanling	excavation	"	40, 43
Pingnan	Shijiaoshan	surface reconnaissance	general	42, 43
Pubei	Gulicun	?	basic	43
Qinzhou	Puling	surface reconnaissance	general	43
	Qingtang	"	basic	81
Quanzhou	Aoyutou	"	general	43
	Jian'ansi	"	"	43
	Longwangmiaoshan	"	"	43
	Lujiacun	test excavation	basic	42
	Xianzitang	surface reconnaissance	general	

County	Site	Fieldwork	Detail	References
Rong Xian	Dashenling	surface reconnaissance	general	43
Tiandong	Guogailing*	?	basic	42
Wuming	Mianling*	none	general	41
	Yiling	surface reconnaissance	"	43
Wuzhou Shi	Tangyuan	"	"	16, 43
Xincheng	Datang*	none	individual	16, 41
Xing'an	Gaotang	surface reconnaissance	general	43
	Wangchengling	"	"	43
	Yijia	"	"	43
Zhaoping	Shizishan	"	"	43
Zhongshan	Baotashan	"	"	43
	Yidongtianyan	"	"	43

* isolated find of pre-Qin bronze artifact

APPENDIX C - BRONZE AND EARLY IRON AGE SITES AND FINDS IN GUANGDONG AND GUANGXI

KEY:

W.Zhou = Western Zhou

S&A = Spring and Autumn

WS = Warring States

(1) = Chevron 3

(2) = Kui Period

(3) = Mi Period

pst = polished stone tools

POL; KEB; SOM = site names used by Maglioni (1975)

Area County	Site	Context	Relative date	Artifacts: Metal	Ceramics	Lithics	Ref.
East Coast							
Chao'an	Paoxuezishan	?	S&A (2)	1 arrowhead	?	?	81
	Songlinfeng	site	?	1 axe	geometric pottery	pst	81
Haifeng	Baoluo (POL)	site	S&A-WS (2)	2 casting moulds: bell; spearhead	HG - Kui Period	jade frags.	57
	Jingwei (KEB)	site	W.Zhou-S&A (1)	1 axe 1 axe casting mould	SG & HG, pre-Kui	pst & ornaments	57
	Shakengzhong (SOM)	site	S&A-WS (2)	weapon fragments	HG-Kui Period	bracelet	57
Jieyang	Xinxihe	?	?	1 axe		axe, adze, ge & gui (ceremonial tablet)	49
Raoping	Dingdapushan & Tazijinshan	burial-24	late Shang (1)	1 ge	geometric and other ceramics	tools and ornaments	49
East River							
Boluo	Guhechuangdi	isolate?	?	2 bells			49
Heyuan	Yuandunling	site?	?	1 axe	geometric pottery	pst	81
Huiyang		isolate	mid S&A or earlier	1 ding			49;81
	Jinzubu	site?	?	1 axe	geometric pottery	pst	81
Longchuan	Dajiangcun	?	WS (3)	1 spear butt 1 spear	1 SG guan		81
Wuhua	?	?	S&A-WS (2)	1 "engraving knife"	HG-Kui Period	?	57
	Dongshan-shanglin	burial?	?	? HG: 4 vessels	1 axe 1 adze		81
	Zijinshan	?	?	1 spear	?	?	81

Area County	Site	Context	Relative date	Artifacts: Metal	Ceramics	Lithics	Ref.
Zengcheng	Jinlansi	site	WS	1 arrowhead	HG-Mi Period	?	64;79; 49
	Tianmashan	?	?	2 bells	?	?	49
	Xigualing	site	WS	1 "engraving knife"	HG-Mi Period	1 whetstone; hammerstones	15
Northern Region							
Fogang		burial(s)	S&A-WS (2-3)	?	?	?	49
Lianping	Pengshan	?	WS (3)	1 bell 1 tiger-knob chun yu	?	?	49
Qingyuan	Matougang #1	burial	S&A-WS (2)	(25 pieces) 3 food vessels 2 wine vessels 6 musical instruments 8 weapons 6 miscellaneous & ritual objects	6 vessels including 2 kui- impressed guan jars	2 whetstones	11
	Matougang #2	burial	S&A-WS (2)	(39 pieces) 1 wine vessel 7 bells 2 tools 29 weapons	1 Kui Period guan	2 bang (sticks) whetstones	12
Qujiang	Shixia	site	S&A-WS (2)	(16 pieces) weapons & tools	HG-Kui Period	small amounts (unidentified)	79;90
	Shuigeling	site	S&A-WS (2)	1 axe	HG- Kui Period	?	49
Shixing	Baishipingshan	site	WS (3)	1 iron axe 1 iron-tipped hoe	HG- Mi Period	hammerstones	65;15
Wengyuan	Jiangtoushan	site	S&A-WS (2)	1 axe	HG- Kui Period	very few pst	23;49
	Jihanbei	site?	?	1 axe	geometric pottery	pst	81

Area / County	Site	Context	Relative date	Artifacts: Metal	Ceramics	Lithics	Ref.
Xinfeng	Qianggang, Matou	?	?	1 awl 1 spear 1 yue axe	?	?	49
Central Region							
Guangzhou Shi	Fei'eling	site?	?	1 axe	geometric pottery	pst	81
	Xiangang	unclear	S&A-WS (2-3)	(5 pieces) 3 weapons 1 pair ornaments	HG- Kui Period	pst	46
West River							
Deqing	Luoyanshan	burial	WS (3)	(15 pieces) 8 tools 5 weapons 1 ding tripod 1 bell	1 mi-impressed hu jar	2 whetstones 1 pebble with drilled hole	34
Guangning	Tonggugang	burials -22	WS (3)	(295 pieces) 7 vessels 97 weapons 189 tools 2 unidentified artifacts	39 vessels: 20 glazed bowls & cups 3 mi-impressed jars	23 whetstones	30
Huaiji	Lanmashan	burial	S&A-WS (2)	(incomplete list) 1 human-head staff (originally 4)	1 guan, Kui Period	?	49
Luoding	Luoding #1	burial	S&A-WS (2)	(incomplete list) 2 vessels 2 musical instruments 5 ritual & ornamental objects 42 weapons	1 guan, Kui Period	?	49
	Luoding #2	burial	S&A-WS (2)	(types and quantities not reported)	1 guan, Kui Period	?	49
Sihui	Gaodiyuan	burial	WS (2-3)	(incomplete list) 2 human head staffs (originally 4)	?	?	49

Area County	Site	Context	Relative date	Artifacts: Metal	Ceramics	Lithics	Ref.
	Niaodanshan	burial	S&A-WS (2)	(59 pieces) 4 vessels 1 musical instrument 41 weapons 9 tools 4 human-head staffs	1 impressed *guan* jar	3 whetstones	28
Zhaoqing Shi	Songshan, Dianhuachang	burial	WS (3)	(108 items) 14 food vessels & 6 musical instruments 23 weapons 40 tools 24 miscellaneous & ritual objects 2 gold handles 1 gold fragment	18 vessels: 9 jars & vases 1 bowl 8 *he* boxes 3 beads	2 jade rings with gold handles 1 jade belt hook 3 jade pieces 1 jade baton 1 glazed bead 1 whetstone	35
Southern							
Xinyi	Songxiangchang	isolate	W.Zhou (1)	1 *he* wine vessel			78
Yangchun	Gangbei	isolate	WS (3)	1 axe 1 ingot			49

Area County	Site	Context	Relative date	Artifacts: Metal	Ceramics	Lithics	Ref.
Beiliu	Tongshiling	?	Pre-Qin	(smelting remains)	?	?	43
Binyang	Luwei	isolate?	S&A (2)	1 bell			41
	Xinbin	burial?	S&A (2)	1 bell 1 sword 1 unidentified fragment			16.41
Gongcheng	Jiahui	burial	S&A-WS (2)	(33 pieces) 8 vessels 2 musical instruments 12 weapons 7 tools 4 miscellaneous & ritual objects	?	?	38
Guanyang	Aishan	site?	WS (3)	weapons (unidentified)	Mi Period ceramics	?	43
	Guchenggang	burial	WS (2-3)	?	Kui Period ceramics	?	43
	Zhongshan	site?	W.Zhou? (1)	1 bell	Geometric ceramics, no kui or mi patterns	many pst	16,41, 43
Heng Xian	Zhenlong	isolate	W.Zhou? (1)	1 bell			16, 41
He Xian	Wuzhishan (Zhonghua)	site?	S&A-WS (2)	"small amounts", unidentified	Kui Period ceramics	pst	42, 43
Lipu	Limu	isolate?	W.Zhou? (1)	1 weng jar			42
Lingshan	Longwu	site?	?	1 axe	Geometric pottery	pst	81
Luchuan	Wushi	isolate?	W.Zhou? (1)	1 weng jar			42
Nanning Shi	Nahong commune	isolate?	S&A (2)	1 bell	?	?	41

Area County	Site	Context	Relative date	Artifacts: Metal[1]	Ceramics	Lithics	Ref.
Pingle	Yinshanling	burials -110	WS (3)	(bronze: 377 pieces) 39 vessels 283 weapons 46 tools 1 bell 8 miscellaeous & ritual objects (bronze & iron 11 pieces) 2 vessels 9 weapons (iron, 181 pieces) 1 vessel 3 weapons 177 tools	(360 pieces) 30 jars/vases 15 *ding* tripods 89 *he* boxes 190 cups 36 spindle whorls	(115 pieces) 40 jade rings 2 turquoise beads 71 whetstones (from grave fill) 1 *ge* dagger-axe 1 ornament	40
Pingnan	Shijiaoshan	?	?	(1 casting mould)	impressed & incised sherds	pst	42, 43
Qinzhou	Qingtang	?	?	1 spear 1 sword			81
Tiandong	Guogailing	?	WS?	(no information)			42
Wuming	Mianling	isolate	late Shang - W.Zhou (1)	1 *you* wine vessel 1 spear			16, 41
Wuzhou Shi	Tangyuan	isolate	WS (3)	1 *ding* tripod	Mi Period ceramics		16
Xincheng	Datang	isolate	W.Zhou (1)	1 bell			16, 41
Xing'an		?	Late Shang (1)	1 *you* wine vessel			16, 41

[1] all are bronze unless otherwise indicated

APPENDIX D - GLOSSARY OF CHINESE TERMS USED

ban'er guan	搬耳罐	guan jar with "turned" handle
bang	棒	stick, baton
bei	杯	cup
bi	璧	flat disc
bo	鉢	bowl
bu	瓿	jar
chun yu	錞于	bell
cong	琮	tube-shaped stone ritual object
ding	鼎	cooking vessel with 3 or 4 legs
dou	豆	stemmed cup or bowl
duo	鐸	bell
fou	缶	jar
fu	釜	cauldron, cooking pot
ge	戈	dagger - axe
guan	罐	jar
gui	圭	oblong stone plaque with pointed end
he	盒	"box", small lidded jar
hu	壺	spouted vessel, kettle
hui	回	(shape of a geometric motif)
jue	玦	slotted ring
kui	夔	"one-footed dragon" : geometric motif
lei	罍	urn
mi	米	(shape of a geometric motif)
pan	盘	dish

APPENDIX D (continued)

pen	盆	shallow bowl, basin
wan	碗	bowl
weng	瓮	jar
yue	钺	battle-axe
zun	尊	jar