

PREHISTORIC SETTLEMENT AND PRODUCTION IN THE NAM RIVER VALLEY,  
SOUTH KOREA

by

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A THESIS SUBMITTED IN PARTIAL FUFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

(Department of Anthropology & Sociology)

We accept this thesis as conforming  
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

November 1999

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## ABSTRACT

This study uses settlement, mortuary and house structure data from southeast Korea to examine the nature of society, production, economic centralization, and change in the Nam River area during the period 850 to 450 B.C. Actions of emerging leaders are thought to be a main factor behind the emergence of hierarchical settlement systems and economic centralization. To test whether there was group-based society and centrally located production in the study area, house floors, spatial distribution of settlements, stone tool and prestige object production, burials, and prestige objects are examined to uncover trends in the settlement system through time. Ditch-enclosures are expected to protect production and elite houses in the central part of the study area. Nam River society displays correlates matching group-based society such as a trend towards production in large houses, lack of centrally located production, and small-scale megalithic burials. Centralization of settlement, stone tool and jade production, burials, large houses with production and prestige artifacts, and ditch-enclosures did not occur. In Phase II (600 to 450 B.C.) social transformation towards greater elite involvement in production is shown by the development of multi-functional production zones in Ogbang and Sanch'öng, restriction of stone tool production based on structure size, a large increase of stone cist burials with prestige artifacts, jade production in relatively small "workshops", and the construction of ditches for protection. Ditch-enclosures are associated with the protection of elite houses rather than production areas. It is concluded that the Nam River settlement system reflects group-based models with weak elites, but incipient individualizing modes were beginning in the organization of multi functional production areas, defense, and increased use of prestige artifacts in burials.

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## ABBREVIATIONS

<i>CMY</i>	<i>Ch'angwŏn Munhwajeyŏnguso</i> (Ch'angwŏn Cultural Assets Research Bureau)
<i>DATP</i>	<i>Dong-A Taehaggyo Pagmulgwan</i> (Dong-A University Museum)
<i>DETP</i>	<i>Dong-Eui Taehaggyo Pagmulgwan</i> (Dong-Eui University Museum)
<i>HTP</i>	<i>Hanyang Taehaggyo Pagmulgwan</i> (Hanyang University Museum)
<i>KCP</i>	<i>Kungnip Chinju Pagmulgwan</i> (Chinju National Museum)
<i>KKY</i>	<i>(Sa) Kyŏngnam Kogohak Yŏnguso</i> [Kyŏngnam Archaeology Research Institute, Inc.]
<i>KPW</i>	<i>Kugsa Pyŏnch'an Wiwŏnhoe</i> (National History Compilation Committee)
<i>KNTP</i>	<i>Kyŏngnam Taehaggyo Pagmulgwan</i> (Kyŏngnam University Museum)
<i>KN</i>	<i>Kyŏngsang Namdo</i> (South Kyŏngsang Province)
<i>KNNYPC</i>	<i>Kyŏngsang Namdo Namgangyujŏk Palguljosadan</i> (South Kyŏngsang Province Nam River Site Excavation Investigation Foundation)
<i>KTP</i>	<i>Kyŏngsang Taehaggyo Pagmulgwan</i> (Kyŏngsang University Museum)
<i>MY</i>	<i>Munhwaje Yŏnguso</i> (Cultural Assets Research Bureau)
<i>PKSP</i>	<i>Pusangwangyŏgshirip Pagmulgwan</i> (Greater Pusan City Museum)
<i>STKMY</i>	<i>Shilla Taehaggyo Kayamunhwajeyŏnguso</i> (Shilla University Kaya Cultural Assets Research Institute)
<i>STP</i>	<i>Sŏnmun Taehaggyo Palguldan</i> (Sŏnmun University Excavation Team)
<i>TPCP</i>	<i>Taejŏn Pogŏn Chŏnmundaehak Pagmulgwan</i> (Taejŏn Professional Health College Museum)

## NOTES ON KOREAN WORDS AND TRANSLATION

Where Korean terms and words in this thesis are used they have been romanized from the Korean using the McCune - Reischauer system as adapted by the *Korea Journal*. Apostrophes are only used with aspirated vowels. Established Korean words (i.e.: Seoul, Nakdong, etc.) or personal names (i.e.: Dr. Rhee, Song-nai, Dr. Lee, Sung-joo) are romanized according to accepted convention for the reader's convenience. Korean personal names mentioned here are written surname first according to Korean convention.

## ACKNOWLEDGEMENTS

I wish to express great thanks and gratitude to Professor Richard Pearson, who provided an excellent study environment and always gave support and encouragement during my entire time at UBC and in Korea. Studying under Professor Pearson has opened many opportunities in East Asian archaeology and life in general. Professor Michael Blake was instrumental in assistance with the writing of this thesis and Donald Baker at UBC helped me read Korean materials. Thanks also to Professor R.G. Matson and all UBC archaeology people. Professor Charles Watrall's influence in my undergraduate days gave the initial spark of interest in 1990. Professors Sarah Nelson and Pai Hyung-Il in the USA were helpful during this process. Institutions such as the Korea Foundation in Seoul and the Centre for Korean Research at UBC provided special funding and educational support needed to complete this thesis.

Since 1995 Korean Professors Choi Mong-lyong (Seoul Nat'l U.), Sim Bong Keun (Dong-A U.), and Kang Bong-won (Kyung Hee U.) provided me with critical excavation and study opportunities. Professor Kang's patience, good ear, and openness helped very much. Drs. Lee Sang-kil (Kyöngnam U Museum), Lee Sung-joo (Ch'angwön Nat'l U. Museum), Lee Dong-ju and Chöng Ũi-do (Dong-A University Museum) have always provided excellent archaeological discussion, data, and technical instruction in the field. Dr. Lee Sang-kil also contributed the idea for this thesis.

Students in Korea such as Kim Gyong-taek-sshi, Lee Hyön-sök-sshi, Soichi Tanaka-sshi, Kim Yeon-ju, Lim Young-sik, Cho In-tae, Cho Chu-hyön, Oh Süng-yön, Lee Hyang-chul, Ko Minjung, Cho Hyön-jöng, and many more have given so much selfless support, teaching, and friendship, sometimes during difficult times, that I am forever in their debt. The same is true of Canadian classmates Lee Gyoung-Ah, Li Min, Julie Park, Naoko Matsumoto, Anthony Vanags, Warren Hill, Li Guo, Eric McClay, Patricia Omerod, and Ethan Watrall. The Han family of Pusan and the Cho's in Seoul provided room, board, and good food. Finally I wish to acknowledge the primary importance of my parents, Professor David and Judy Bale and the great sacrifices they have made for all of their children. Love and intellectual stimulation from them are the main reason I could complete this thesis, which is dedicated to my Grandparents.

## INTRODUCTION

This thesis is a study of settlement patterns, production, site function, and the character of society in ancient Southeast or *Yōngnam* Korea. For most of the second half of the 20<sup>th</sup> century, Mumun Pottery Period (ca. 2000/1500 – 300 B.C.) research was based primarily on data derived from excavations of megalithic and stone cist burials. Until recently the explanatory framework of the so-called “Bronze Age” was rooted in mortuary archaeology (Kang 1995:113-14) in which data were studied mostly to discern typology, patterns of chronological geographical distributions, and cultural affiliations (Nelson 1995). Kang commented that emphasis of megalithic site excavations inhibits a systematic understanding of the whole period (Kang 1995:113-14). My study attempts to direct attention to settlements and the activities which took place in and around them.

Intense economic development and construction in *Yōngnam* (Fig. 1) during the 1990s led to excavations of many Mumun Period settlement sites, and a new chance to investigate the lifeways of that time using anthropological theories and methods. Archaeological data now exist to reconstruct Mumun Period settlement systems and show processes of economic change. The purpose of such a study would be to introduce a Western scientific, holistic, and comprehensive picture of Mumun Period settlement patterns in *Yōngnam* to complement what was not possible with mortuary studies alone.

Settlements dated between 850 – 450 B.C. were excavated near the confluences of the Nam, Tōkch’ōn and Kyōngho Rivers in South Kyōngsang Province from 1997 to 1999. The excavation areas yielded semi-subterranean structures, and sometimes contained areas related to production of jade objects and stone tools, prestige goods, dryland agricultural fields, charred rice and grain remains, burials, platform structures, other large-sized dwellings, ditch-enclosure and palisade features, small pits, and piled stone features (Ha 1998, Kim Y.M. 1998, Lee D.J. 1998, Pak and Kim 1998). The 21 excavation areas varied in preservation, size, and features, and few were very large in area. It appears there were some contiguous settlement “neighbourhoods” near the centre of the study area and other smaller surrounding settlements.

## ***The Problem***

Kim Y.M. suggested that one of the largest ditch-enclosed sites with many structures and dry field remains on the Nam River functioned as a central settlement in the local area (1998:68). However many archaeologists characterize Mumun Period society as intermediate (group-based, or between egalitarian and stratified societies, Hayden 1995:16) based on mortuary data (Barnes 1993:164-67, Kang 1990, 1995, Kim S.O. 1996). Kim Y.M.'s (1998:68) use of the central place model (Hodder and Orton 1976:60) to explain local Mumun Period settlement patterns, implying that the Nam River area functioned under a hierarchical settlement system, has not yet been recognized by scholars of the period in southern Korea. Production is a main factor behind the emergence of hierarchical settlement systems (Blanton *et al.* 1996, Feinman 1995, Wason 1994). Production includes making stone tools and prestige artifacts to gain local supporters and power. The main research focus of this thesis is to examine the evidence of a transformation from group-based to hierarchical society and show how that transition took place in Mumun Phases I and II. For example, how was the site settlement system and economy characterized in relation to production of stone tools and prestige goods, and how is that connected with the emergence of leaders in the economy?

In a study of megalithic burials in southeast Korea, Kang showed that his sample displayed no strong statistical evidence of ranked society in the analyses of artifacts, construction-energy expenditure, and regional distributions (1990). A similar scenario was also proposed by Pearson for the southwest because megalith building did not require ranking or permanent elites to enable construction (1978:88-9). In a study of a southwestern settlement site dated 500 to 300 B.C., Kim S.O. (1996) created five subphases from results of multi-dimensional scaling of pottery data and tracked socio-political change on an intrasite scale by analyzing changes in the spatial patterns of houses at Taegong-ni. He found that until Phase IV social differentiation at Taegong-ni was not significant (Kim S.O. 1996:223, 318). However my initial data analysis of excavated settlements indicated that the Upper Nam River settlement system may show hierarchy in economic centralization and that society was in a period of emerging inequality.

Archaeologists have identified criteria from the archaeological record (i.e.: evidence of specialized production activity) which shows that emerging leaders followed specific strategies to acquire

status and wealth (i.e.: production and distribution of prestige goods to create support), and reflect general characteristics of past societies such as the development of hierarchy (Blanton *et al.* 1996, Feinman 1995, Renfrew 1974). I describe these criteria and theories below and use them with the data to focus on characterizing the settlement system of the Nam area over time in terms of production, elites, and structures.

### ***The Study Area and Environment***

Archaeologists are aware that interpretations predominantly using ecological adaptation have been problematic and naïve because human actions are also important in culture change (Feinman 1995:265-6). However a brief outline of the ecology of the study area is appropriate here. The study area is located on a tributary of the Nakdong River in the Nakdong Basin, which is 58% steep low mountain terrain surrounded on the north and east by the eroded Sobaek Mountains. A group of small circumscribed and sometimes narrow alluvial basins linked by streams and surrounded by hills defines the terrain of the study area. The distance from the northernmost site (Zone 1) to the southernmost site (Zone 21) is about 11 km in a straight line and 30 km by streams. Most settlement sites in the area were located on the valley floor about 50 m above sea level.

The northernmost part of the study area is a small floodplain with two smaller streams and alluvial deposition on the north side of a bend of the Kyōngho River, 12 km upstream from the confluences with the Nam River. The area is hilly and surrounded by low peaks. The alluvial floodplain containing sites in the middle of the study area (Taep'yōng-ni and north – see Fig. 1) begins just south of where the Nam River flows through narrows lined with hills and cuts west into an open alluvial floodplain created by stream meandering. This floodplain is somewhat divided in the middle by a narrowing in the valley at Sanch'ōng (north) and Taep'yōng-ni (south), and surrounding hills are steep. Hills almost enclose the southern part of this floodplain just north of the Sangch'on River Crossing. South of the crossing the river bends south and cuts deep and straight into the Chinyang Lake. This area (Sangch'on-ni) is a narrow valley with steep hills.

A section of the Tōkch'ōn River valley south of Chinyang Lake is also part of the study area. This district is west of the Tōkch'ōn – Nam River confluence, and the floodplain there is wider on both

sides of the valley due to river meandering. The eastern Tökch'ön valley is hummocky, swampy and cut by a small north-south stream. Slightly upstream is an alluvial floodplain much like Taep'yöng-ni with steep surrounding hills.

The study area lies between two modern vegetation zones. South of the study area is a zone of evergreen broadleaf forest which includes oak, various bamboo, and laurel (Pearson 1974:Fig. 1), while north of the study area the vegetation consists mainly of mixed mesophytic species (Pearson 1974:93).

Soils are determined by the nature of the underlying bedrock, climate, vegetation, topography (Kang 1995:49), and alluvial re-deposition at various stream bends. Soil in Korea is acidic, and so ancient skeletal material does not preserve well. Sudden heavy rain and ground surface exposure to heat contribute to weathering, soil acidification, and erosion of shallow humic layers (Kang 1995:49).

The climate in the region consists of four seasons. Of the two most important seasons, winters are dry, windy, and cold, while summers are humid and hot with monsoon rains. The region is prone to drought.

## **D A T A**

### ***The Nam River Dam Project***

This research is based on data from excavations that resulted from the construction of the second Nam River Dam to facilitate a larger supply of water for agriculture use and offset frequent droughts. The reservoir was expected to cover low lying parts of floodplains and its construction necessitated heritage impact assessments. During Chinyang Dam construction in the same area surveys and excavations were carried out in the seventies (KN 1992, MY 1994).

The project began in 1992 with intensive grid surveys and led up to excavations of 400 ha of land from 1996 to 1999 by more than fifteen different institutions including universities, government agencies, and the private sector. Institutions were assigned to excavation areas which only partly represented true sites. The excavation methodology was to follow up test holes by establishing long trenches. Once basic stratigraphy was agreed upon backhoes stripped off overlying soil down to the most recent cultural level, and sites were usually excavated out to their areal limits.

The Nam River area is considered to be one study area because the district is small, linked by rivers, and has basic similarities in chronology, artifacts, house forms and other features. The area encompasses 21 zones with Mumun Period components, including Zone 1, several kilometres north near the confluences of the Kyōngho and Nam Rivers, which was excavated in 1996 due to highway construction (KNTP 1996). In this thesis I refer to zones or groups of zones by their individual names (i.e. Ogbang Zone 1 or Ogbang) or following Korean archaeologists, I designate Zones 1 and 2 as Sanch'ōng, Zones 3 to 12 as Taep'yōng-ni, and Zones 13 to 18 as Sangch'on-ni (see Fig. 1).

### ***Previous Research***

The ancient Nam River area was discussed in articles including Ahn's survey of Yōngnam (1982), Lim's dwelling study (1985), and Sim's "Bronze Age" synthesis (1990). The Chinyang site report was a summary of burial and dwelling excavations in the 1970s (MY 1994). Kang used megalith data from the study area (1990).

After the 1997 field season, site progress reports were published (DATP 1997a, 1997b, TPCP 1997a) and summarized in the *Yōngnam Kogohak* journal. A 1998 conference summarized excavations at nine sites (*Yōngnam Kogohaghoe* 1998) and was the most comprehensive to date in terms of data and projects discussed. Nam River data were used in articles on ditch-enclosed sites (Lee S.J. 1998), Mumun Period ceremony (Lee S.K. 1998a), and a site report (Ahn 1998). Other progress reports (see Fig. 1) are the most recent data available for this study.

### ***Selection of Data***

A complete data set for the region was not possible to obtain because of differences in interim report tabulation formats. Some data were unavailable, such as tabulated artifacts from Zone 2. However other information for Zone 2 was available, i.e. site location, structure numbers, and dimensions. Very little data was published for Zones 13 and 16.

Data classes reported by excavators and available to this study were suitable for the study of settlement patterns. Site location, number of dwellings and burials, as well as presence-absence of ditch enclosure features represent data on a regional systems scale and are suitable for study of prestate societies (Feinman and Neitzel 1984:73-7). Burial and dwelling type, size, dimensions, number of

prestige artifacts, and site function represent intrasite data which are comparable on a wider scale. Dry fields, stone tool or jade production, and ditch enclosures are evidence of the character of settlement and elite production strategies. Large megaliths, associated megalithic burial embellishments (grinding many pock-marks into large and small megalithic capstones), and miniature pottery vessels are evidence of ceremonial activities and group-based societies.

Radiocarbon dates are unavailable for this study. In Korea dating is often accomplished by using Mumun pottery and house shape changes, as well as burial and artifact typologies (Kim, C.G. 1996, *KPW* 1997, Lee 1996, Pak and Kim 1998). All features in the study area were dated according to this scheme and grouped into Yöngnam Mumun Period Phase I (850 – 600 B.C.) or Phase II (600 – 450 B.C.) in consultation with another archaeologist (Lee 1999) (Fig. 2).

I have dated burials and structures using feature and artifact typologies of Korean scholars (*KPW* 1997, Lee 1996, Pak and Kim 1998). Orange-brown coloured pottery with decorations such as neck slanted-line, lip-scalloping, and rim-perforation are grouped into Phase I. These decorative attributes are found on pottery with deep and shallow bowls, and doubled-rimmed forms. In Phase II the predominant orange-brown pottery has few decorative attributes except a clay stripe along the rim. Pottery forms do not include many deep bowls but there are many small forms such as wide-mouth jars and several kinds of shallow bowls. Small reddish-orange burnished jars with short constricted necks called *Hongdo* are found in burials and structures in both phases. *Hongdo* pottery is usually smaller in size and less common in Phase I. In Phase II *Hongdo* vessels have slanted constricting necks, are larger in size, and many are found in stone cists.

Following Korean scholars, I have also dated rectangular and square structures to the beginning of the Mumun Period (ca. 1500 – 600 B.C.) (Lee 1996). Square, oval, and circular structures are dated to the middle Mumun to Early Iron Age (600 – 300 B.C.) (Kim, C.G. 1996, *KPW* 1997, Lee 1996). I acknowledge that house shape is important in the analysis of structures, but I am not able to consider structure shape as a variable for analysis in this thesis due to space limitations. Instead I focus on the variables of production and size in the intrasite analysis of structures.

Burials have been dated according to the convention which states that megaliths are slightly earlier than stone cists (Kang 1990:42, *KPW* 1992:160-171, Rhee and Choi 1992:75). Megalithic burials that were common in the study area during Phase I (850 – 600 B.C.) were the southern type, which is defined by a shallow pit lined with river cobbles or cut stones, topped with a pile of cobbles and a capstone boulder (Rhee and Choi 1992:68, Kang 1990:33-5, Nelson 1993:147). Megaliths in Phase II (600 – 450 B.C.) were a late variant of the southern type which has a deeply placed burial cist made with cut stone and topped with a capstone just above the surface (Ha 1998:16, Kang 1990:35-43, *KPW* 1997:166-71). Early stone cist burials in the study area were usually characterized by the use of a small number of interlocking cut stones, while later stone cists had rounded river stones (Ha 1998:16, Kang 1990:35-43, *KPW* 1997:166-71).

Some Koreanists are cautious about dating burials in the Mumun Period because there are few supporting radiocarbon dates, and many megaliths were robbed throughout history or destroyed by natural and cultural post-deposition processes (Kang 1990:23-9, Nelson 1993:147). Radiocarbon dates from structures at Taeya-ri and Ulsan Kōmdal-li in Yōngnam support Korean dating methods because they show similarities between stone tool assemblages in megaliths and radiocarbon-dated structures (*DETP* 1989:122-23). However until more radiocarbon dating is done on Korean burials, the existing chronology is debatable. Keeping these points in mind, when I dated features in the Nam River I observed consistency between burial types, structures, artifacts, and Korean dating methods.

### **THEORETICAL PERSPECTIVE**

The theoretical perspective of this research addresses the character of the settlement system of the Nam River area and how it changed over a part of the Mumun Pottery Period (2000/1500 – 300 B.C.). The question of interest is how the site settlement system was characterized during 850 to 450 B.C. by production and actions of emerging leaders. For example, were stone tool production and prestige production centralized in Ogbang in Phases I and II? In this thesis, establishing the presence of prestige artifacts or emerging leaders is not as important as demonstrating a transformation in society "...and the justification of the social contexts in which it happens and the ways that these contexts are reproduced..." in time (Feinman 1995:257-8). The general theoretical model used here was based on the "dual

processual” framework (Blanton *et al.* 1996) of corporate and network (or group- and individual-based) political economic modes for intermediate societies (Feinman 1995, Renfrew 1974). I think some of the psychological constructs and capitalist notions in this literature are implicit and over simplistic, but I use this perspective partly because of the world perspective of the theory which was synthesized from cross-cultural ethnographic studies.

Interpretation of the character of political activity as reflected in a settlement system relies on anthropological cross-cultural theory that enables an understanding of power dynamics and community development through the actions of emerging leaders. Power was partly dependent on individualizing or group-based modes that emerging elite may have followed to certain degrees to increase production, benefit their supporters and the community (Blanton *et al.* 1996, Feinman 1995, Renfrew 1974, Spencer 1993). While not mutually exclusive concepts, the individualizing or home finance mode was based on material wealth, while the group or home production mode was corporate and based on knowledge and magic (Blanton *et al.* 1996:6, Renfrew 1974).

In individual-based societies, extra-factional external relations were relatively more important. Leaders developed external ties to obtain exotic wealth items which were used to gain prestige and the allegiance of supporters (Blanton *et al.* 1996:4-5, Feinman 1995:264-66). Individualizing societies showed differences in wealth between people (Feinman 1995:264). Long-distance trade is sometimes associated with individualizing models (Earle 1997:73, Feinman 1995:266).

In group-based modes intra-settlement factions and internal community relations may have been more important (Kim S.O. 1996). Leaders often sought to gain the support of family and local non-family groups by using personal attributes and eminence to gather corporate labour forces for the production of goods needed for exchange, feasting, and control of land (Blanton *et al.* 1996:5-7, Feinman 1995:264-66). Differences in access to and displays of wealth were de-emphasized, communal activity and ritual life were important, public works were sometimes constructed, and power may have been unstable because the existence of multiple leaders per community was possible (Feinman 1995:264-66, Renfrew 1974:74-79,83).

Danish Late Neolithic Thy megalithic society serves as an example of a group-based society. Structure and burial artifact distributions rarely indicated an emphasis on material wealth, and in most cases the intrasite difference of numbers of artifacts in houses and burials did not indicate extreme wealth differences between individuals (Earle 1997:130). The artifacts within settlements usually only showed difference as to function and all artifact classes were relatively homogenous.

Group-based societies were often oriented toward collective ceremony and ritual (Blanton *et al* 1996:6) and were sometimes connected to the presence of burial forms such as megaliths. Large Thy megalithic burials may have required some kind of organization of group labour to build (Earle 1997:24). Thy culture later displayed more evidence of individualizing archaeological correlates.

Regardless of the character of society (group-based or individualizing) past settlement systems display formations reflective of past behaviour. For example sites may have existed in a hierarchical relationship, defined as any sufficient differentiation among settlements that indicated the dominance of one or more settlements (Wason 1994:128) where “centres...performed all of the functions of lower order centres plus a group of central functions that differentiated them from the lower order” (Hodder and Orton 1976:60). Kinds and quantities of production debris as well as the presence of public architecture such as workshops or storehouses indicate the intensity of site production, function, and degree of community or regional centralization (Flannery and Marcus 1983:55).

Site function is related to the centralization of activities in settlements as emerging leaders operated to serve themselves and larger group needs through coordination of production of food and certain goods. The nature of production was directly related to elite power strategies which affected the nature of the settlement system. In order to meet the needs of supporters and increase prestige, emerging leaders engaged in production of prestige and non-prestige objects for external exchange, reinvestment in infrastructure, or feasting (Hayden 1995:24). Production specialists may have been found at larger settlements attached to emerging leaders, who needed their skills to produce prestige or ritual objects necessary for maintaining the support of their followers (Feinman 1995:265, Blanton *et al* 1996:4-5), which make centralization of activities such as production at certain sites a feature in the development of settlement systems (Flannery and Marcus 1983, Wason 1994:128-131).

The long term economic success of settlements or communities is correlated with emerging leaders in large settlements who were better at procuring local and regional resources, protecting community members, keeping labour specialists, exchanging with the outside, coordinating labour projects, feasting, etc (Hayden 1995:15). Leaders used various strategies to keep and expand power, and used it to persuade superfamilial groups to produce more food, prestige objects, public works, landscapes, and ceremonies (DeMarrais *et al* 1996:17-19). The successful actions of these emerging leaders transform polities along a number of trajectories over time. Success in leadership means that a settlement may have eventually become a place of economic activity and a central place in a group of settlements. Economic success also may have meant a few cases of accumulation of wealth in some settlements. The presence of prestige objects implies the use of the power of symbolism by emerging leaders or elites to communicate a variety of messages, and gain power and prestige through ceremonies and death (Johnson and Earle 1987), as well as membership in an elite group (Wason 1994:103-7). Power can be seen in the unequal presence of prestige objects concentrated in a small number of structures or burials (Wason 1994:103-85).

Settlements with successful big men may have grown to be bigger than other surrounding communities and became different from each other in function and appearance (Flannery and Marcus 1983, Wason 1994:129). An interregional group of competing big men between communities may have formed in the settlement system, and though no single leader or elite emerged some were stronger than others (Johnson and Earle 1987:171).

Concerns related to the quantity and quality of local subsistence resources were significant in prehistoric decision making and character of settlement systems. People did not voluntarily live in unproductive or dangerous places. In circumscribed environments, control of more land for the production of greater agricultural surpluses was necessary for the emerging elite to support their own self interests and their supporter's needs (Feinman 1995:265-6). The leaders of a community whose crops failed or land was unproductive may have turned to raiding as a solution to provide for supporters (Hayden 1995:28-42). Because of competition from other communities, the success of a community lay in being able to take advantage of the land and its resources, so the best possible landscapes were sought out for production and protection and are defended against competitors (Keely 1996, Min 1996). The

presence of ditch-enclosed settlements suggests there was competition and conflict over land for agricultural production (Earle 1997:129) or at least a *perceived threat* of violence (Keely 1996:55-6), and such ditches could only be built under the supervision of emerging leaders to protect production-based settlements or elite houses from frequent raids (Keely 1996:56, Min 1996:88). Evidence of dwelling destruction by burning is also another indication of possible conflict.

### ***Preliminary Patterns and Interpretations***

The Nam River settlement system in Phase I and II matches corporate or group-based modes, with weak elites and no great evidence for social change or transformation. For example megalithic burial forms were practiced, prestige artifacts were evenly distributed, long-distance trade goods were lacking, and shallow ditches were present. Centralization of the economy is apparent in one area, called Taep'yōng-ni (especially Ogbang), in terms of prestige artifacts, ditches, and stone tool and jade production. However it is argued that this centralization process was slow and uneven through time. Ditches in Taep'yōng-ni and other areas appear to have been shallow and may have been built voluntarily under the supervision of emerging leaders because of perceived threats to elites or settlement production. These preliminary interpretations are further developed below.

I suggest that Nam River society was a group-based society, and various studies on the Mumun Period have already alluded to this (i.e.: Kang 1990, 1995:104-20, Pearson 1978:88, Rhee 1984, Rhee & Choi 1992). Several potential indicators of group-based, elite-organized production may have been present in the Nam River settlement system archaeological record. Group-based societies often relied on the production of agricultural surpluses which emerging leaders used to accommodate the supporter's needs (Blanton *et al* 1996:6). Seven of eighteen sites had evidence of Mumun Period agricultural fields and some such as Zone 4 were quite large at approximately 6000 m<sup>2</sup> (KNNYPC 1998). The lack of many artifactually rich elite dwellings or burials and the presence of inadequate defensive ditches may show that elite power was not well developed.

Numerous megaliths in the Korean Peninsula were constructed on an increased scale through the Mumun Period and indicate communal burials and group-based modes (Rhee and Choi 1992:74-5). Some were quite large but rarely contained prestigious goods. They may have been the central burial feature in a

small group with surrounding stone cists or other megalithic burials, and a few megalithic capstones had hundreds of cup-marks made by grinding. It is expected that megaliths in the Nam River follow the patterns listed above. Zones 1 and 10 had miniature pottery and pedestalled vessels which are said to be related to Mumun Period ceremonial life (*KNTP* 1996, Lee S.K. 1998a). The Zone 1 miniature pottery with basal perforations was found in multitudes along with jade objects in long pit features, and similar features have been suggested at Area 1 of Zone 18, Zone 7, and others (Lee S.K. 1998a:247-67). The long pit features that contained burnt, basally-perforated pottery and jade are interpreted as ceremonial areas (Lee S.K. 1998a:247-67).

Several centrally located excavation zones (Zones 6 – 12 or “Ogbang” - see Fig. 1) show evidence of economic dominance compared with the rest of the zones in the number of structures in production of stone tools, jade artifacts, ditch enclosure features, and presence of large agricultural fields (Kim Y.M. 1998). No other part of the study area has all of the attributes listed above. For example Zone 6 was a jade object and stone tool-making area with dry fields, structures, and production biproducts (*STP* 1998). In both Phases I and II Zone 6 ranked second in terms of total number of structures. From similarity of artifact forms it is postulated that jade objects from burials and dwellings throughout the Nam River area were from Zone 6 and Zone 1, and there is a jade mining area about 30 km southwest in Hadong (*KNNYPC* 1998).

It is assumed that even though not all sites had evidence of agricultural fields, the presence of digging tools, reaping tools, grain storage pits, and platform storehouses mean that this activity occurred near all the sites during Phases I and II. I propose that the emerging leaders in Ogbang may have gained control of the lands around their settlements and had success in agricultural production early in Phase I because of a few artifactually rich dwellings that contained prestige goods. As mentioned above, the Nam River settlement system may have been a megalithic building society in some ways like the Danish Late Neolithic Thy (Earle 1997:130). Both societies had artifact distributions found in structures and burials which did not indicate an emphasis on material wealth.

I propose that the settlement system in the study area consisted of one or two economically dominant and multifunctional settlements and surrounding secondary sites spread out along the Nam

River. Regular or uniform spatial distribution of archaeological sites is often interpreted as competition between sites for uniformly distributed resources, while clustered distributions indicate some important site or localization of strategic resources (Hodder and Orton 1976:32, 54-5). Zones that made up Taep'yōng-ni and Sangch'on-ni may have actually been parts of individual neighbourhoods of larger settlements, multifunctional production zones, and other small outlying sites.

A few large structures at some sites show considerable evidence of stone tool production and may have been community production structures rather than individual dwellings. Almost half of the Nam River excavation areas show evidence of some kind of production, usually of stone tools. Pottery production did not usually emphasize special vessels, with the exception of miniature pottery vessels found at Zones 1 and 10 which may have been used in ceremonies (KNTP 1996, Lee S.K. 1998a).

Production of stone tools and jade objects may have been important activities during both phases, although jade production seemed to increase marginally during Phase II. Very large structures at Zones 16, 19 and 10 also indicate that they may have been community structures or that many families may have lived together, but with the exception of Structure G-1 (55 m<sup>2</sup> – with stone tool production) at Zone 10, evidence of production is absent.

Ditch enclosures that surround four of the excavation zones imply that group efforts were required for construction and maintenance (Earle 1997:129, Mudar 1999:6). In Zone 12 the ditches and a few groups of palisade remains seemed to be located close to structures with prestige artifacts and stone tool production, which raises the possibility of the necessity for defenses of elites and the economy (Keely 1996:52, Spencer 1994:36). However, it is clear from preliminary reports that almost all enclosures (except possibly Zone 12 – KKY 1999) in the study area were not sufficiently massive to repel determined attack (Kim D.W. 1998:59, Kim Y. M. 1998:75-6, Lee D.J. 1998:10). Ditch-enclosure and palisade features in some of the centrally located zones in the study area and the presence of weapons in dwellings and burials may indicate the presence of conflict. It is proposed that ditch-enclosures were built in Phase II as society transformed and became more complex. For example, as part of the process of increasing production and farming, competition increased in the area and the threat of raiding appeared, although the ditches were not able to deter attackers and palisade remains were few. This along with

sparse evidence of burnt dwelling remains may have meant that the *threat* of violence was more important than actual conflict. Increasing violence might be seen as a societal trend that intensified in the Late Mumun Period and protohistoric Iron Age because of the presence of the four metre deep ring ditch at the nearby Ch'angwŏn Namsan site as well as the ditches, palisades and watchtowers at Yangsan P'yŏngsan-ni (Lee S.J. 1998).

## ANALYSES

### I. SETTLEMENT PATTERNS – *Introduction and Expectations*

In Tables 1 and 2 I show details of settlement in raw numbers, and in Figure 1 I present the distribution of excavation zones during both phases. In Tables 2 to 5 I explore relationships between variables of macro-settlement such as production and the presence of prestige artifacts, and in Table 6 I level the differences in raw frequencies between excavation zones by presenting settlement relationships relative to the number of structures in each zone. In the text I refer to site names in the leftmost columns marked “Excavation Zone No.” in Figures 1 and 2 (i.e.: Ogbang Zone 2).

Intermediate societies (neither egalitarian nor stratified, Hayden 1995) in processes of economic centralization may display archaeological correlates such as large concentrations of production close to distributions of prestige artifacts and areas with many structures (Feinman 1995:265, Hodder and Orton 1976:60, Wason 1994:128-131). Production is defined as the making of utilitarian and polished ground stone tools, and jade ornaments. Prestige production (i.e. jade, polished ground stone tools) is for building support groups, “elite” identities, and is probably restricted in scope and area, but not overly so in a group-based society model (Brumfiel 1994:10).

The presence of emerging leaders may be demonstrated by the unequal presence of prestige artifacts in structures (Wason 1994:103-85) and the presence of ditch-enclosure features that require leadership and organization to build (Brumfiel 1994:11, Earle 1997:71-2, Mudar 1999:6, Spencer 1994). Prestige artifacts are unequally distributed in structures or burials and are defined here as objects which were used by emerging leaders to build alliances and social prestige (Earle 1997:129-30). However elites in group-based societies are expected to have less power because of competition from other leaders (Feinman 1995:264-66, Renfrew 1974:74-79,83), which is reflected archaeologically by even

distributions and fewer overall numbers of prestige artifacts through time (Earle 1997:130) as well as absence of infrastructure or improvement projects requiring elite organization (i.e. ditch-enclosure features).

If the ditch-enclosures in the Nam River area served a defensive purpose, they should have been large enough to repel intruders (Min 1996:75-6, Mudar 1999, Wason 1994:135). An example of a large scale ditched site is the first century A.D. component of the Yayoi Period Yoshinogari site in Japan, which has ditches with a maximum width of about 6.5 m and a depth of more than 3 m (Min 1996:75). Ditches should also be located close to structures with jade production and prestige artifacts (Spencer 1994:36).

### *Phase I - Results*

In Table 1 I show that the majority of all structures tended to cluster into one group according to expectations. Of the 106 structures in Phase I, the largest concentration (60%) was in Taep'yŏng-ni. In this area 63% of structures were found in southern excavation zones (Zones 6-10, 12, or Ogbang) near the Nam River and a semi-permanent river crossing into Sangch'on-ni (Fig. 1). Twenty-two percent of the structures were in Sangch'on-ni, while other zones (2, 19, 21) had fewer structures (n=19 or 18%). In Figure 6 I show that most Sangch'on-ni structures (78%) were concentrated at Zone 18, which is in the southern part of the area (see Fig. 1). Therefore the biggest concentration of structures was in the southern parts of Taep'yŏng-ni and Sangch'on-ni, which are four kilometres apart, and smaller groups of structures were spread to the north of each major concentration of houses.

Zones 2, 19, and 21 contained fewer structures and these outlying settlements, more than four kilometres north and south from the centre of Ogbang, were not as intensively investigated as Taep'yŏng-ni by the Nam River Project teams. The area directly below Zone 21, the only settlement located on a hill slope, was flooded more than ten years ago. The submerged area may have contained more structures and the current data may not represent the whole settlement.

Expectations about centralized production seem to be confirmed by the raw distributions in Table 1, in which I show 100% of jade and 81% of all stone tool production in structures were concentrated in the Taep'yŏng-ni area. Stone tool production evidence are flakes, debitage, and incomplete tools found in

houses such as Structure 3 at Zone 12 (Kim Y.M. 1998:65). Jade production evidence is identified by jade raw material, ornament blanks in various states of completion, as well as complete ornaments with tubular or button shapes found in houses such as Structures 3, 5, and 6 at Zone 1 (*KNTP* 1996). Jade production was located only in Zone 6, where two structures with proposed prestige artifacts were also excavated. Two structures in Zones 4 and 12 Taep'yöng-ni had stone tool production and prestige artifacts and 53% of all Phase I stone tool production in the study area was in the north part of Taep'yöng-ni at Zone 4 (Fig. 1).

Phase I proposed prestige artifacts such as jade ornaments, polished ground stone daggers (imitations of bronze daggers), and polished ground stone discoidal artifacts were rare. However theoretical expectations that greater centralizing economic tendencies occurred seem to be met because in raw numbers 62% of all prestige artifacts were from structures in Taep'yöng-ni. In raw numbers 23% of structures with prestige artifacts were from Sangch'on-ni, and the remaining 15% were found in Zones 19 and 21. Prestige artifacts from structures in Taep'yöng-ni were evenly distributed through most zones in the area, and the existence of elites is suggested by comparison of the number of structures with prestige artifacts to the total number of dwellings. Most structures with prestige objects were located in Taep'yöng-ni, but there were a few structures with prestige artifacts in many excavation zones during Phase I. The single Nam River ditch-enclosure in Phase I is expected in group-based societies in which large numbers of such infrastructure projects are not expected.

In Table 1 I show that one ditch-enclosure feature was found in a small structure cluster at Zone 14. This shallow ditch was 30 m in length, and artifacts from the earliest part of the Mumun Period were recovered near the top of the ditch fill (Lee D.J. 1998:2). Zone 14 had two structures with prestige artifacts and was located 500 m across the Nam River from a structure cluster at the southern end of Taep'yöng-ni that had five dwellings with stone tool production (Ogbang Zones - also see Fig. 1). Although it was located relatively close to structures with stone tool production this feature does not meet expectations about defensive ditches because of its small size (Choi 1998, Min 1996, Mudar 1999).

## *Phase II – Results*

I present data from 227 structures in Table 2 and show that 60% of structures were concentrated in Taep'yōng-ni, and growth in number of structures occurred in Ogbang (Fig. 1). Sangch'on-ni had more dwellings in Phase II, but the area's proportional number of structures shrank from 22% in Phase I to 16% of structures in Phase II. In Table 2 I show that structures in Sangch'on-ni were mostly distributed in Zone 18. Spatial patterns of groups of structures were similar to Phase I, although the southern parts of Taep'yōng-ni and Sangch'on-ni had a more dense distribution of structures.

Structures more than doubled in number during Phase II (see Table 3) and the fivefold increase in structures at Zone 19 was the largest, followed by Ogbang where number of structures increased by 2.7 times. The increase in structures in Sangch'on-ni was low compared with increases in other areas.

In Table 2 the raw number of structures with stone tool and jade production was found mostly in Ogbang. Contrary to expectations that spatially restricted jade production would be found, 25% of this evidence was found in Zone 1, and Zone 21 also contained stone tool production. Jade production in other regions was absent.

In Table 4 I show that stone tool and jade production increased in the Nam River from phase to phase, but jade production remained more restricted in area and scope. Increases in structures with both kinds of production in Sanch'ōng were the largest through time, but this result may be due to some factors such as lack of production data in Phase I. Stone tool production also increased in Zone 21 and Ogbang, although the entire area of Taep'yōng-ni experienced only a 0.2 fold and 0.5 fold increase in structures with stone tool and jade production, respectively. Stone tool production in raw numbers of structures in Sangch'on and Ŏ-ŭn decreased through time, and although there was greater production consolidation inside Taep'yōng-ni, in Table 4 I illustrate that further evidence of centralization in stone tool and jade production is scanty from Phase I to Phase II.

In Table 2 I show that Ogbang structures contained the most proposed prestige objects in raw numbers, but they were distributed in small numbers over the whole study area. However it is significant that prestige artifacts from Taep'yōng-ni (n=11) comprised the majority of all prestige artifacts, because it may indicate that some centralization of artifact distribution (Brumfiel 1994:10). Few differences in

structures with prestige artifacts can be seen between zones because Sangch'on and the Ö-ün Zones each had two prestige objects, while Zones 19 and 21 each contained one prestige artifact.

My expectations about finding relatively few prestige artifacts in the Nam River area during each phase are confirmed by the small increase in the number of prestige objects (0.1 fold) observed in Table 5. Some greater consolidation of prestige artifacts in one place is demonstrated by a two-fold increase in Ogbang, but the Taep'yöng-ni subtotal increase was quite small. These patterns are important for my model which proposes centralization and use of prestige artifacts to be less important in Nam River group-based society because I show that there were few prestige artifacts in both phases, and overall centralization in the Nam River was absent.

In Table 6 I present stone tool production, jade production, and prestige artifacts relative to the number of structures in each sub-area so that change can be examined on a standardized scale. The ratios shown indicate the numbers of structures with each activity to the total number of houses. The main trend shows that production and prestige artifacts decreased in most zones from Phase I to Phase II. Contrary to expectations of finding increased production in Ogbang, Sanch'öng had larger than average increases in stone tool (from 0:12 to 5:30) and jade production (from 0:12 to 2:30), but results are complicated by the fact that Phase I production data from this area are absent and the number of Phase II structures involved in production were few. Although the raw numbers show that Ogbang had centralized production, this is actually unlikely because Table 6 shows that a high rate of stone tool production in Zones 19 and 21. Ogbang had a larger than average percentage of stone tool production per structure and it increased slightly in Phase II, but there was an unexpected decline in jade production and structures with prestige artifacts. It is expected that production in group-based societies would be dispersed and take place in many households, and stone tool production does tend to be dispersed. However Table 6 shows that jade production is more concentrated than stone tool production and that there is an unexpected trend toward a smaller percentage of structures with stone tool production.

In raw numbers Taep'yöng-ni had the most prestige artifacts in both phases, but Table 6 shows that pattern is actually not so clear because the percentage of structures with prestige artifacts is similar through both phases at most areas. This pattern suggests that prestige artifacts were distributed somewhat

evenly in the Nam River area. Also Zones 19 and 21 had a large percentage of structures with prestige artifacts, which does not suggest centralization.

Two of the four ditch-enclosed settlements in Phase II were in Taep'yŏng-ni, where Zone 12 had 8 curved ditches between 10 and 150 m long, and not more than three metres wide or 1.6 m deep. They were v- or u- shaped in cross section and contained artifacts from Phase II (Kim Y.M. 1998, KKY 1999). Ditches in Zone 12 had two palisades and several entryways. The curved double ditch at Zone 7 was 60 m long and shared similar dimensional features with Zone 12 ditches. Details about the ditches at Zones 16 and 20 in Sangch'on-ni were unavailable, and only a small part of each feature survived.

Phase II ditch enclosures match expectations in some cases, but not others. For example in Table 2 I show that Taep'yŏng-ni ditches were located close to structures with stone tool-making, but did not surround any jade production areas. The absence of detailed data on other ditch enclosures makes it difficult to say that they were related to production. The Zone 12 ditches were close to the largest concentration of structures with prestige artifacts, but Table 2 shows that no other ditches had this relationship. It appears there may have been a relationship between ditch-enclosures, prestige objects, and stone tool production at Zone 12 because the remains of one ditch surrounded much of Ogbang, and other ditches surrounded structures with prestige objects and large structures. It is expected that the size of the study area ditches should have been like those at Yoshinogari in the Japanese Yayoi Period (i.e.: depth was 3 m and width was 6.5 m in the 1<sup>st</sup> century A.D.; Min 1996:75) in order to function defensively, but the Nam River ditches were about half the scale of Yoshinogari. Because of the uneven post-depositional preservation and generally small size of ditches, it appears unlikely that the ditches would have repelled determined intruders (Choi 1998:23, Min 1996, Mudar 1999).

### *Summary of Settlement Patterns Analysis*

When raw numbers of structures are considered, overall settlement trends during Phase I and II reflect an increase in structures and jade production, but only a small increase in stone tool production and structures with prestige artifacts. However when production and prestige artifacts are considered relative to the number of structures, most areas had less stone tool production, jade production, and prestige artifacts in houses. A few areas such as Zone 19 had increasing stone tool production, Ö-ün had

increasing jade production, and Sanch'öng had increasing stone tool and jade production. Absence of production data from Sanch'öng may present a false picture of settlement pattern changes there over time.

In both phases the biggest concentration of structures was in Taep'yöng-ni (I-60%, II-60%) and Sangch'on-ni (I-22%, II-16%). Ogbang and Zone 19 had a large jump in structures, but Sangch'on-ni grew at a slower rate (0.6 X). The spatial patterns of structure groups from 850 to 450 B.C. showed that the southern ends of Ogbang and Sangch'on-ni had the greatest density of structures. Other "neighbourhoods" of structures were spread along the river to the north of the main structure groups in Taep'yöng-ni and Sangch'on-ni.

In raw numbers, most stone tool-making seemed to be centred in Taep'yöng-ni, but Zones 19 and 21 also had a high rate of structures with stone tool production. Phase I stone tool production was mostly based in Ö-ün and Zone 21, but contrary to expectations in Phase II such production occurred in structures at Ogbang, Sanch'öng and at Zone 21, and stone tool and production took place in a smaller percentage of structures over time. Most jade production was centred in Ogbang, although in Phase II evidence was found in Sanch'öng and Ö-ün. Centralization is not confirmed because jade production in the Nam River did not increase, and sites outside of Ogbang (Sanch'öng, Ö-ün) had such production.

Few jade artifacts and polished ground stone tools were found in structures, and the trend is that the number of houses with prestige artifacts decreased in Phase II. According to the raw numbers Ogbang had the highest distributions of prestige artifacts and was the only area which had increases in prestige artifacts in structures, but Table 6 shows that prestige artifacts were distributed somewhat equally by Phase II.

The poor preservation and small-scale dimensions of the single Phase I ditch and several Phase II ditches in Sangch'on-ni prevent detailed discussion of possible relationships with production or defense. However the Phase I ditch was located near two structures with prestige artifacts. As expected in a society with centralizing tendencies, half of Phase II ditch-enclosure features were found at Ogbang in Taep'yöng-ni but appeared to be too small for a defensive purpose when compared to Yoshinogari. Phase II ditch-enclosures did not surround jade production areas, but some ditches in Ogbang were near structures with stone tool production and prestige artifacts.

## II. BURIAL ANALYSIS – *Introduction and Expectations*

I summarize and explore burial data in Tables 7 to 11 and Figures 3 and 4. In societies with centralizing tendencies it is expected that burials will be found in greater numbers, scale, and elaboration through time in relation to places which functioned as economic centres (Wason 1994:101-2). If there were elites who could convince others to build a memorial burial after death, it should follow that certain burials require greater elaboration than others (O'Shea 1984:36) and are associated with economic centres where elites reside. It is expected that linear, continuous spatial distributions of megaliths as in the southwestern peninsula indicate a low level of centralization and economic power (Pearson 1978:88). Differences in size of burials should not be that great in group-based societies (Kang 1990, Renfrew 1974:74, Wason 1994:90-1).

Family members in group-based societies are often buried in a single tomb or in a small cluster (Wason 1994:89-92). A small burial group here is defined as usually one or two megaliths with a small number of surrounding stone cist burials which is built over a number of generations (*DATP* 1997a, 1997c, 1998, Ha 1998, *KKY* 1998). These small burial groups are more likely to have greater distributions in economic centres, but in group-based societies they may have been ubiquitous throughout the region. Group-based societies also did not often place a high emphasis on the consumption of mortuary prestige artifacts in burials, so it is expected that prestige artifact frequency would be low. Such low frequencies may also result from the fact that since megaliths are prominent points on the land, they have been targets for robbery throughout history (Nelson 1993:147) and were damaged or destroyed by natural and cultural post-deposition processes (Kang 1990:29, O'Shea 1984:23-6) at a greater rate than settlement remains.

### *Phase I - Results*

In Table 7 I present burials in Phase I by area and excavation zone, and according to the raw numbers the majority of burials (55%) were in Taep'yōng-ni (especially Ogbang): both stone cists (54 %) and megalithic burials (55%). Sangch'on-ni also contained a large proportion of megaliths (41%), but few stone cist burials. Spatial patterns of the burials are largely unknown due to survey methods (*MY* 1994),

although it appears the majority of burials in Ogbang and Ö-ün were clustered less than one kilometre apart at Zones 11 and 5.

In Figure 3 I show the distribution megalithic burials ( $n=30$ ) by capstone size in volume ( $m^3$ ). The majority of capstones were between  $0.5 m^3$  and  $2.5 m^3$  in size, and most were smaller than the Phase I mean capstone size. A  $4.6 m^3$  capstone from Zone 11 (Ogbang) was the largest in Phase I and was two times larger than any other dolmen in the area. A red burnished pottery vessel was recovered from the burial (MY 1994). It is expected that the largest megalithic burial would be found in Taep'yöng-ni and that the range of size of all megaliths in Phase I would not be great. I use standard deviation and mean capstone size to compare size ranges of megaliths and found that the size difference between the two groups that are formed by the bi-modal distribution of megaliths was not that great.

The presence of small burial groups indicated by Table 7 demonstrates important group-based societal tendencies because they imply group-based mortuary treatment was practiced and/or they were for family burial (Wason 1993:90). It is expected that most small burial groups would be ubiquitously distributed in the Nam River area, and in Table 7 I demonstrate that small burial groups were few and split evenly between the Ogbang Taep'yöng-ni area and Zone 21.

The number of burials with prestige artifacts was very low in Phase I, which is expected in a group-based society that de-emphasizes expression of prestige through artifacts, but it is well known that many burials were robbed of their contents (Kang 1990:23-4, Nelson 1993:147). It is expected that burials in Taep'yöng-ni would have prestige artifacts, but in Table 7 I show that Zone 21 was the only place with prestige artifacts in burials. The artifact is a polished ground stone dagger from a stone cist which was part of a small burial group centred around a megalith (Ha 1998:18).

### ***Phase II - Results***

In Table 8 I present data from Phase II burials, which were mostly stone cists. In raw numbers, half of all burials were found in Taep'yöng-ni and most were located in Ogbang. This area also contained the majority of megaliths and almost half of the stone cist burials, but Sangch'on-ni had 40% of the stone cists, which were concentrated in Zone 18. Sangch'on-ni and Sanch'öng contained no megaliths, which may result from post-depositional formation processes such as flooding. Zones 19, 20, and 21 contained

smaller numbers of burials which probably reflects the smaller scope of archaeological survey done there (*KNNYPC* 1998). The location of burials changed slightly to Ogbang Zone 10 and Ö-ün Zone 3 in Phase II. Burials at Sangch'on-ni Zone 18 were situated in a single line pattern 30 m wide, parallel to the Nam River, and intermixed with structures (Pak and Kim 1998). This spatial pattern meets expectations that indicate a low level of centralization or economic power (Pearson 1978) but no other evidence of this pattern exists at other sites.

In Figure 4 I show the bimodal distribution of seven megalithic burials by capstone size in volume ( $m^3$ ). Six megaliths ranged from  $0.1 m^3$  to  $2.0 m^3$ , the largest was  $3.1 m^3$ , and as expected that largest megalith was from Ogbang. Six artifacts including stone tools were recovered (*MY* 1994). The  $3.1 m^3$  megalith was three times larger than the mean of capstone size, but the actual scale of the burial was small compared to British Late Neolithic megaliths (Burgess 1980:163-77, Fraser 1983:348) and so expectations that the differences between size of burials would be small are confirmed.

The presence of small burial groups indicated by Table 8 demonstrates group-based mortuary treatment and/or family burials, both important in group-based models of society (Wason 1993:90). It is expected that most small burial groups would be distributed across the Nam River area, and in Table 8 I demonstrate that small burial groups were few and were roughly split between the Taep'yöng-ni, Sangch'on-ni, Zones 20 and 21. Ö-ün and Ogbang had small burial groups, and Sangch'on-ni examples were found in Zone 18.

The frequency of burials with prestige artifacts was low in Phase II, but from Table 8 a more equitable pattern of prestige artifacts in burials can be seen because in Phase II the distribution of burial prestige artifacts was split mostly between Taep'yöng-ni (29%), Sangch'on-ni (19%), and Zone 20 (33%). This kind of pattern is expected in group-based societies where no one group has more than another, and the low number of artifacts is also expected in a group-based society that de-emphasizes expression of prestige through artifacts. However an alternative explanation is that many burials were robbed (Kang 1990:23-4, Nelson 1993:147). Zone 20 prestige artifacts were jade from all seven of the stone cists (*DATP* 1998) and Taep'yöng-ni examples included jade and polished ground stone daggers (*MY* 1994).

I show changes in raw frequencies of the percentage of burial types in Table 9, and despite expectations that Taep'yöng-ni would have an increasing proportion of both burial types through time, only megaliths increased. Ogbang had only marginal increases of burial types in Phase II. Zones 20 and 21 both had the highest increases in burial types, although it appears that Zone 21 actually lost much of the proportion of stone cist burials in Phase II. The number of stone cists at Sangch'on-ni jumped five fold, but the number of megaliths appears to have decreased.

In Table 10 I present mortuary patterns relative to the number of structures in each zone in order to level the differences in raw burial type frequencies between excavation zones. I do this in order to look for differences that are not based on the size of the community alone. In societies with centralizing tendencies, it is expected that Taep'yöng-ni would have had the most megaliths and stone cists, but Taep'yöng-ni had relatively average numbers of megaliths and fewer than average numbers of stone cists. Sangch'on-ni was predominant in the number of megaliths in Phase I and the number of stone cists in Phase II, and Zones 19 to 21 together had higher than average numbers of megaliths and stone cists. While large burials were located in Taep'yöng-ni, Sangch'on-ni and Zones 19 to 21 became important because they had a large number of stone cists. This distinction between locations of large burials and other burials is not expected in group-based societies.

In Table 11 I show changes in numbers of small burial groups and burials with prestige artifacts as a percentage of all burials. In Taep'yöng-ni the proportion of total small burial groups shrank 1.3 times despite expectations of a marginal increase. The greatest increases in small burial groups was in Sangch'on-ni and Zone 20 where such evidence was absent in Phase I. Decreases were seen at Zone 21 because the proportion of small cluster burials shrank from 50% in Phase I.

Burials with prestige artifacts increased in Phase II everywhere except Zone 21, where the only prestige artifacts from Phase I were found. In Table 11 I demonstrate that the greatest increases in burial with prestige artifacts was at Zone 20, followed by Taep'yöng-ni and Sangch'on-ni. Taep'yöng-ni is expected to have had the greatest increases, but expectations are not met even though negative evidence shows that no burial prestige artifacts were found in Zone 20 and Sangch'on-ni in Phase I.

### *Summary of Burial Patterns Analysis*

Megaliths made up a large part of the Phase I burials, and the largest one was from Phase I. The number of burials in the Nam River area doubled and stone cists dominated in Phase II. Small burial group evidence doubled and was widespread in Phase II, suggesting family burials and group-based modes. Stone cist burials in Phase II rarely contained prestige artifacts, confirming expectations because they were generally low and increased only slightly through the study period. How the burials were distributed across the land remains largely unknown, although large megaliths were in Ogbang, Sangch'on-ni was a centre of stone cists, few large concentrations of burials existed, and others had linear distributions along the river.

It is expected that Ogbang would have the greatest frequency of burials compared to the other zones, but that was not the case. Although Ogbang contained the most Phase II megaliths, Sangch'on-ni had the majority in Phase I and Zone 21 had increases in Phase II. Zone 21 and Ogbang dominated the stone cist frequencies in Phase I and then tailed off while Sangch'on-ni became a stone cist burial centre in Phase II.

While there was a difference in megalithic capstone size within and between Phase I and II, the size difference became smaller in Phase II as overall megalithic burial size decreased. The largest megaliths in each phase were in Ogbang and contained no prestige artifacts.

Ogbang was a consistent centre of small burial groups in the study area, but by Phase II other areas such as Sangch'on-ni also came to have many of them. As with the distribution of Ogbang megaliths, evidence of small burial groups decreased in Phase II. Zone 21 clusters also decreased, but small burial groups at Ö-ün and Sangch'on increased.

Zone 21 contained the only burials with prestige artifacts in both phases, but Zone 20 had the most prestige artifacts in burials during Phase II, followed by Ogbang and Sangch'on-ni. The expectation that few prestige artifacts would be found is confirmed, but the high frequency of burials with prestige artifacts outside Ogbang is unexpected in a society with centralizing tendencies.

### III. INTRA-SITE ANALYSIS – *Introduction and Expectations*

The methods I use here involved the creation of Figures 5 – 10 which display every structure in the Nam River by phases, areas and excavation zones. A limited number of the structures analyzed in the Settlement Patterns section have floor measurements, and so those structures have been sampled and are displayed by shape and size on a scale from 0 to 200 m<sup>2</sup> or more. The northernmost areas or zones are at the top of the figures. Figures display the mean of structure size (m<sup>2</sup>) in each phase, which is represented by a vertical dotted line extending from measurement scale to scale. In each figure a similar vertical dotted line extending from scale to scale represents the mean size of structures with stone tool-making, jade production, and prestige artifacts. The mean of structure size in each zone is also shown under the area or zone name. Both kinds of means are used to assess departures from the mean and compare archaeological phenomena using houses bigger ("large structures") and smaller ("small structures") than the mean of structure size. Two hundred forty-seven semi-subterranean structures from Phase I were sampled and analyzed by size, production, and prestige artifacts. I use Tables 12 -16 to explore intrasite trends in both phases. Figures 5 – 10 show the shape of structures, but due to space limitations I do not consider structure shape in this thesis.

The main theoretical points I use focus on the household, which is often the most important economic unit in intermediate societies (Ames 1995:95, Wason 1994:140). In societies where economic success is dependent on cooperative labour (i.e.: early agriculture) it may be better for individuals to band together in one household to maximize economic production potential. Structure size is more likely to be correlated with differences in function over time. Large structures are related to multi-family-use (Kim C.G. 1996) and small structures are related to smaller families, production, and other functions (Wason 1994:140). Large differences in structure size may indicate different status, and if a settlement has a few energy intensive structures inequality can be inferred (Wason 1994:138). However it is argued that in group-based society models many cases of large size variations and energy intensive structures are not expected.

Agricultural production is not considered in this thesis, but proposed prestige artifacts are seen as part of a reinvestment of surplus into production of goods for alliance building in communities within a

agricultural economy (Earle 1997:71). If they are prestige objects, polished ground stone artifacts should show evidence of being produced close to or in structures which were larger than the mean structure size and finished prestige objects should be found in large structures. Subsistence-based stone tool-making should occur mainly in houses smaller than the mean structure size for each phase. In centralized economies the greatest distributions of prestige artifacts should be found in important economic places (Wason 1994:128-30). Finished prestige artifacts should be found in structures larger than the mean size, but artifacts may be more widely distributed across structure sizes in group-based societies.

### ***General Intrasite Patterns - Results***

In Figure 5 I introduce general intrasite patterns in Phase I. The diagram shows six areas from north to south spread out along a line representing the structure size range in an area or zone. Although preliminary interpretations highlight Ogbang as a potential economic centre, structures at Zone 2 had the largest mean size and the greatest distribution of houses greater than the overall mean size. Contrary to expectations, Ö-ün had the widest size distribution of structures. Ö-ün and Ogbang structures were relatively small but also contained the two largest Phase I structures of 157 m<sup>2</sup> and 308 m<sup>2</sup>, respectively. Sangch'on-ni had a tighter size distribution than Ogbang and Sanch'öng areas, but the mean size for the area was higher than Ogbang or Ö-ün. The lack of concentrated excavations at Zones 19 and 21 may account for the small number of structures there. The large differences in size of structures between the sub-areas outlined above are not expected.

I display Phase II intrasite patterns and stone tool production data in Figure 6, presented from north to south. All areas and zones had smaller size ranges (2.0 m<sup>2</sup> to less than 60 m<sup>2</sup>) than Phase I and the greatest concentration was at Ogbang. Structures were rarely larger than 30 m<sup>2</sup>.

Zone 2 had the largest mean size in Phase II but Ogbang had the greatest number of sizes larger than the Phase II mean. The presence of a 1500 m<sup>2</sup> rectangular pit feature gave Sangch'on-ni the greatest size distribution range, but most structures were smaller than the overall mean size like Ö-ün. Only Sangch'on-ni had structures with wide ranging sizes, which meets expectations for group-based models where most of the settlements are expected to consist of houses of similar size. Zones 19 and 21 had smaller size distributions, but their mean sizes were roughly the same as the Phase II mean size.

### ***Stone Tool Production - Results***

Figure 5 also shows how stone tool production was related to size on an intrasite level. I indicate the mean size of structures with stone tool production ( $23 \text{ m}^2$ ) in Phase I with a dotted line extending from measurement scale to measure scale, and show that most stone tool production (indicated by arrows below the structures) was in structures smaller than the mean size ( $36 \text{ m}^2$ ). The heaviest concentration of structures with stone tool production was found at Ö-ün (9), followed by Ogbang (3), Zone 21 (2) and Sangch'on-ni (1). These results show that Taep'yöng-ni as a whole contained the most Phase I stone tool production. All evidence at Ö-ün was found in structures less than  $20 \text{ m}^2$ , and only dwellings less than  $20 \text{ m}^2$  had production at Sangch'on-ni and Zone 21. Ogbang and Ö-ün had similar production circumstances except that one large structure at Ogbang measuring  $71 \text{ m}^2$  also had stone tool production. Contrary to expectations this structure had no prestige artifacts (Kim D.W. 1998). It seems that at Ö-ün stone tool production in Phase I took place primarily in small structures less than  $20 \text{ m}^2$  without prestige artifacts, and production of polished ground stone prestige artifacts is absent.

In Figure 6 I show that most stone tool production in Phase II occurred in structures at Ogbang, which fits expectations about centralization of production. In Figure 6 I indicate the mean size of structures with stone tool production in Phase II ( $23 \text{ m}^2$ ) and show that those 11 structures were larger than the Phase II mean of size ( $18 \text{ m}^2$ ), and one structure also contained a jade artifact (KKY 1999:4). This production also occurred outside of Ogbang on a smaller scale, and half of the structures with stone tool production in Zone 19 and 75% of structures with production in Zone 21 were larger than the Phase II mean of size and individual sub-area means. A  $26 \text{ m}^2$  structure at Zone 21 contained a jade artifact (Ha 1998) and is the only evidence that suggests elites may have participated in stone tool production. However most production in Phase II was in structures greater than the Phase II mean of size. It is interesting to note that the mean size of structures with stone tool production in both phases was  $23 \text{ m}^2$  but the mean of structure size decreased (Phase I= $36 \text{ m}^2$ , Phase II= $18 \text{ m}^2$ ).

Contrary to expectations that there would be more structures larger than the mean size at Ogbang with stone tool production, in Table 12 I show that this production decreased in both phases. However this pattern does not represent a de-centralization of stone tool production from Phase I to II. Although

increases in Zones 19 and 21 are apparent, there were few structures actually involved in stone tool production there.

### ***Jade Production – Results***

In Figure 7 I show that the single incidence of structures with jade artifact production in Phase I was at Ogbang and is indicated by an arrow below an Ogbang structure of 15 m<sup>2</sup>. While expectations that jade production occurred at a central location are met, the structure was smaller than the Phase I and Ogbang means structure sizes. Because of the presence of jade debitage from various stages of ornament production, a finished jade artifact found in the structure resulted from production activity (STP 1998) and was not evidence of elite consumption.

I present structures with jade production during Phase II in Figure 8, which are indicated by two arrows under Ogbang structures. Figure 8 also indicates the mean size of structures with jade production in Phase II (23 m<sup>2</sup>, the same as structures with stone tool production), which show that the two 22 m<sup>2</sup> and 24 m<sup>2</sup> structures with jade production were larger than the Phase II and Ogbang means of size, but were smaller than many of the large houses. The absence of many structures with jade production confirms expectations that elite consumption of prestige artifacts was a process of building community and extra-local support groups that was restricted in scope, and that prestige production in group-based societies was less emphasized because social differences between people were indistinct. Although these data showed jade production centred in Ogbang, Sanch'ōng also had this production (pg. 17), and direct evidence of elite involvement in jade production is absent.

In Table 13 I outline the changes in jade production in structures larger than the mean size at Ogbang. Such production increased threefold from Phase I to Phase II but the actual number of large structures involved was small, and the settlement patterns analysis shows that an increase in production actually did not occur in Ogbang. Data from Sanch'ōng are absent.

### ***Prestige Artifacts – Results***

In Figure 9 I present details of structures with proposed prestige artifacts in Phase I, which are indicated by arrows below structures along with the artifact name. I also indicate the mean size of structures with prestige artifacts in Phase I (92 m<sup>2</sup>), and show that a variety of prestige artifact classes was

present in structures with a wide size distribution at all sub-areas except Zone 2. Ogbang contained the most prestige artifacts in structures larger than the mean of size, but Sangch'on-ni contained dwellings with the greatest variety of prestige artifact classes.

Ö-ün had three structures with prestige artifacts that were smaller than the Phase I mean size and equal to or less than the mean size of Ö-ün structures. These structures had jade artifacts, while a 54 m<sup>2</sup> house contained a polished ground stone dagger. Half of the Ogbang structures with prestige artifacts (jade) were smaller than the mean of size and equal to or less than the mean of Ogbang structure size. It was not expected that of the larger half of structures with prestige artifacts, only a 60 m<sup>2</sup> and a 338 m<sup>2</sup> structure had jade and miniature pottery.

Two Sangch'on-ni structures that were smaller than the mean size had a polished ground stone dagger and jade ornament, while an 88 m<sup>2</sup> structure contained jade and a polished ground stone discoidal tool. As at Sangch'on-ni, the largest structure at Zones 19 and 21 had a prestige artifact, but the Zone 21 house was smaller than the mean size.

In Phase I both large and small structures had prestige artifacts and centralization was not apparent. The comparatively wide distribution is not consistent with expectations about group-based communities placing lesser emphasis on using prestige artifacts. However at Zones 19 and 21 prestige objects were found in the largest structure.

In Figure 10 I present a variety of prestige artifact classes (indicated by arrows below structures) which occurred in houses at all sub-areas except Zone 2 from Phase II. I also indicate the mean size of structures with prestige artifacts in Phase II (25 m<sup>2</sup>) with a dotted line extending from measurement scale to scale. A large number of structures with prestige artifacts were in Ogbang. For example at Ogbang there were three structures that contained jade, miniature pottery, and a polished ground stone dagger, and these houses were smaller than the mean of size and Ogbang mean. Almost all structures with prestige artifacts at Ogbang were larger than the mean of size and the Ogbang mean. The largest was a 37 m<sup>2</sup> house with jade, while the next two largest structures at Ogbang were 28 m<sup>2</sup> and 26 m<sup>2</sup> with miniature pottery and jade, respectively. One other structure contained jade. Ö-ün had a 21 m<sup>2</sup> structure bigger than the Phase II mean of size with a polished ground stone dagger. Sangch'on-ni had two structures with

prestige artifacts but they were smaller than the Phase II and Sangch'on-ni means. The largest structure at Zone 19 (25 m<sup>2</sup>) contained a polished ground stone dagger, and at Zone 21 a structure larger than the mean of size had a jade artifact (Pak and Kim 1998, *TPCP* 1997a, 1997b).

Centralizing economic tendencies are suggested by the clustered distribution of prestige artifacts at Ogbang and Ö-ün in Phase II, but the wide size distribution of such houses at Ogbang which were bigger and smaller than the Phase II mean size does not indicate centralization within Ogbang. The expectation that prestige artifacts would be found in the biggest structures is not met.

In Table 14 I show changes in the proportions of structures with proposed prestige artifacts that were larger than the mean size in each phase. As a place of central economic importance, Ogbang is expected to have shown an increase in large houses with prestige artifacts, but they decreased proportionally and Zone 21 showed the greatest positive changes in Phase II. However the proportional change in the numbers of large structures with prestige artifacts at Zone 21 is qualified because large houses with prestige artifacts were absent in Phase I and not large in Phase II. It is expected that group-based societies were less concerned with elite displays using prestige artifacts and large houses, and this is generally found in Table 14 because all sub-areas except Zone 21 had decreases in large structures with prestige artifacts.

The presence of large houses with stone tool production and prestige artifacts may indicate the involvement of elites with production. In Table 15 I show proportional changes in structures larger than the mean size with stone tool production and prestige artifacts. This evidence was absent in Phase I, but Zone 21 and Ogbang had one or two cases of this phenomenon in Phase II. Ogbang is expected to have a greater proportional number in Phase II, but Table 15 shows that Zone 21 contained the highest percentage of large structures with stone tool production and prestige artifacts relative to the number of large structures in each area. This meets expectations in a group-based society where a great amount of centralization of production in large structures is not expected.

In Table 16 I summarize structure size and production. The main trend is that most production and prestige artifacts were in structures smaller than the mean size in Phase I and in structures larger than the mean size in Phase II. One exception is Zone 19, which had small and large structures with stone tool

production and only large houses with prestige artifacts. The expectations that in group-based societies wealth (prestige artifacts) and production would be concentrated in large houses and not small attached workshops is met for stone tool production and prestige artifacts. However the exact nature of structures with jade production and size in both phases may be different, because jade production took place in small Ogbang houses in Phase I and structures only slightly larger than average Phase II. As well, since hearths and household artifacts were absent in structures with jade production and stone tool production is also present in Sanch'ōng houses, perhaps they functioned as workshops.

### *Summary of Intrasite Analysis*

In Phase I most sub-areas had a wide size distribution of structures, and contrary to expectations Sanch'ōng had the greatest proportion of structures larger than the mean size (39%), but artifact data was unavailable. Most structures became less than 30 m<sup>2</sup> in Phase II, and compared to Phase I, the Phase II size range became smaller at all areas except Sangch'on-ni. In both phases Sangch'on-ni and Ogbang had the widest size distributions.

Stone tool production took place in structures that were smaller than the Phase I mean of size at Ō-ün and production was found in large houses at Ogbang during Phase II. Ogbang was also notable for having a large structure with stone tool-making in both phases, which suggests the presence of multi-family groups. Taep'yōng-ni had a major concentration of stone tool production over time, but contrary to expectations about greater centralization of production, stone tool-making in large structures at Ogbang decreased slightly in Phase II. Stone tool production in large houses increased somewhat in Zones 19 and 21 and there was at least one structure with production that was larger the Phase II mean size. The presence of large structures with stone tool-making outside of Ogbang show that production centralization in the Nam River was absent.

Structure size data indicate that jade production took place in a small number of clustered houses centred in Ogbang that may have been workshops, and the size of structures with jade production increased slightly over time. However in Phase II production was not centred in Ogbang because 30% of jade production was also found in two structures large than the mean size in Sanch'ōng Zone 1, and evidence also came from Ō-ün. This evidence is indicative of a group-based society and elite control of

such production seems doubtful because the trend is that jade production is concentrated in but not dominated by Ogbang in Phase II.

Prestige objects were found in structures at all sub-areas except at Sanch'ong Zone 2. In Phase I almost all sub-areas had smaller than average structures with prestige artifacts, but in Phase II most houses with prestige artifacts were larger than the average size. Most large structures contained prestige artifacts in Phase I, but that was not the case in Phase II.

According to expectations Ogbang contained the most large and other sized structures with prestige artifacts in both phases, but Sangch'on-ni and Ö-ün also had structures with prestige artifacts. From the data in Figure 9, I calculate that in Phase I 62% of all structures with prestige artifacts were located in dwellings smaller than the mean size, and Ö-ün had the majority (38%). Forty-three percent of large structures were greater than 100 m<sup>2</sup>, and of those 25% had prestige artifacts and production was absent.

Contrary to expectations the number of large structures with prestige artifacts were fewer everywhere in Phase II except Zone 21. Two percent of the large structures were bigger than 60 m<sup>2</sup>. One case (one percent of all structures) had stone tool production evidence, no prestige artifacts, and was located in Ogbang. If there was a centralized settlement pattern, it is thought that only Ogbang would have both kinds of production in large houses, but this is confirmed only in Phase II, and Zone 21 also had such structures. Fifty-four percent of all prestige artifacts were found in structures between 20 m<sup>2</sup> and 30 m<sup>2</sup> in size. Except one case, all of the prestige artifacts in that size range were jade in Phase II. These trends are indicative of possible restriction on which size of house had which kinds of prestige artifacts.

## DISCUSSION & CONCLUSIONS

Results of analysis consistently show little evidence that overall economic centralization occurred in the whole study area but it is clear that a concentration of functions took place in Ogbang, and production activities also occurred on a smaller scale in Zones 19 and 21. The raw number of structures and burials, large structures and megaliths, stone tool and jade production, and structures and burials with prestige artifacts show that Ogbang functioned as an economic centre with elites because other areas did not have all those features. Group-based behaviour can be inferred in both phases through archaeological

correlates such as production in large structures and burial patterns, but there are also several trends suggestive of individualizing behaviour. These trends are dealt with below by addressing issues of space and proximity, stone tool production, prestige artifact production, structures, burials, and ditch-enclosures. In each section I discuss general trends by phase and provide evidence of centralization, integration, group-based societal modes, and a transformation in Nam River society. The trends are then summarized and a conclusion follows.

### *Spatial Patterns*

In both phases the biggest concentration of structures was in Taep'yǒng-ni and Sangch'on-ni. The density of structures and burials was greatest in Ogbang and Zone 18, which are four kilometres apart, and other smaller neighbourhoods were spread along the Nam River for one kilometre north of Ogbang and Zone 18. In a few zones burials were distributed among settlements and also apart from settlements. Small groups of structures and burials were located near the study area edges, more than four kilometres north and south from the centre of Ogbang. Spatial patterns in Phase II were similar except that the density of structures and burials at Ogbang and Zone 18 increased from phase to phase, and the general trend is that most settlements and burials were in Ogbang and Zone 18.

Spatial patterns during both phases showed that Ogbang was a centre in proportional numbers of structures and had the largest increase in proportional numbers, but other areas also had increases. The only proportional increase in structures from phase to phase was at Ogbang. Also, the increase in proportional numbers at Sangch'on-ni was low and can be interpreted as a part of a centralization of settlement in Ogbang, but centralization of settlement in the Nam River is not apparent in the because of the proportional increases in structures at Sanch'ǒng and Zones 19 to 21. Despite the small scale of Zone 21 compared to Ogbang, the proportional increases in structures and location of the small, isolated settlement cluster on a small hill slope close to Chinyang Lake may indicate that lower settlement features were under the water that flooded the area when the first part of the dam project was built.

The growth in structures at areas farthest from Ogbang (4-7 km) such as at Sanch'ǒng and Zones 19 to 21 showed that centralization in the numbers of structures did not occur, which is expected in group-based societies because centralizing tendencies are not great. However centralization of settlement

inside Ogbang is not suggestive of group-based modes because such developments are not expected in such societies.

### ***Stone Tool Production***

The trends in the data indicate that in Phase I stone tool production was concentrated in Ö-ün Taep'yöng-ni, and most production took place in small structures which lacked prestige production. In Phase II stone tool production was still concentrated in Taep'yöng-ni, but most of it was centred in Ogbang. Structures with stone tool production were slightly larger than the average size. Zone 1 structures had jade production with stone tool production. These trends are further developed below.

In a fashion similar to the settlement trends, evidence of centralization of stone tool production is also weak. Although Ogbang had the most structures with stone tool production over time, production increased in Zones 19 and 21 during Phase II. Ogbang structures with stone tool-making decreased proportionally and so centralization of production in the Nam River was unlikely. However stone tool-making in Sangch'on-ni and Ö-ün Phase I disappeared and was found in Ogbang in Phase II. The short distance between the Ogbang, Ö-ün, and Sangch'on-ni areas may have also played a role in the consolidation of this production from adjacent areas to Ogbang, for example northern Sangch'on-ni and Ö-ün were less than 500 m from the centre of Ogbang. Restriction of production by size is suggested in the study area because 67% of structures with stone tool production in Phase II had a size range of about 20 m<sup>2</sup> to 30 m<sup>2</sup>. In Phase I stone tool production took place in structures of varying size, and so it may not be random that houses across the Nam River with stone tool production were found in a narrow size range in Phase II.

Group-based modes are suggested by the utilitarian nature of most stone tools and the occurrence of production in bigger structures through time that did not have prestige artifacts. Although Phase II houses were restricted in size, there was no other evidence to suggest emerging leaders controlled stone tool production, and there were few structures with prestige artifacts and stone tool production. This is consistent with group-based societies in which emerging leaders were weak and most stone tool production was for subsistence.

### ***Prestige Jade and Stone Tool Production, Structures, Prestige Artifacts***

In Phase I jade production was in four small and clustered structures in Ogbang, and in Phase II most jade production was in a cluster of five larger than average structures in Ogbang. However some of this production was also found in a few larger than average structures in Sanch'öng Zone 1 and indeterminate structures in Ö-ün. The jade production at Ogbang and Sanch'öng was located nearby or in the middle of other production activities such as farming (dry-land fields), a pottery-making (kiln), and grain storage (platform structures). Both structures with jade production in Sanch'öng also had stone tool production and represented one third of structures with jade production.

It is proposed that jade production in the Nam River would fit the group-based production model in which jade ornament manufacture took place in large multiple family households, but such evidence was absent. For example in Phase II two structures with jade production in Ogbang Zone 6 showed no evidence of having been elite or multifamily structures because their size was not large, and subsistence artifacts were not found. The structures with jade production could have functioned exclusively as workshops because they were relatively small, hearths and household artifacts were absent, they were situated beside dry fields and Mumun Period pottery kiln remains, and were called "production structures" by investigators (*STP* 1998). The implication here is that production in attached workshops is a trend suggestive of societies with individualizing modes and greater elite control of production.

Most jade production was centred in Ogbang, but centralization is unlikely because Phase II jade production also was found at Sanch'öng Zone 1 in two structures (*KNTP* 1996). Raw numbers show that jade production in structures doubled in Phase II, but in terms of the number of structures production was the same in both phases because elite displays or use of prestige artifacts was not important in the Nam River group-based society.

The occurrence of different kinds of production along with jade production in Sanch'öng and Ogbang is evidence of a concentration of functions in one place. For example posthole features from platform "grain storehouse" at Zone 1 (*KNTP* 1996:6) existed around and between the structures with jade and stone tool production, and near Zone 6 structures with jade production. This important trend shows that Nam River society was in a transformation process and that emerging leaders had some power

to organize production, because the chance that those combinations of functions occurred in the same locations at random is unlikely. Trends of production concentration are not expected in group-based societies because production is usually less organized, and emerging leaders do not have much power. The distance between Zone 1 and Ogbang is comparatively far (five kilometres), and perhaps because of having slightly different combinations of function those production zones were part of adjacent settlement systems. As I show with the limited size range of stone tool production in structures, the combinations of production at Sanch'öng Zone 1 and Ogbang Zone 6 is a concentration of different functions in two places.

Evidence of group-based societal modes in prestige production is variable. For example it is expected that group-based societies would have little evidence of centralization in jade production, and as with stone tool production, centralization did not exist in the Nam River because two places had jade production. However, in Phase II the existence of production zones in Ogbang Zone 6 and Sanch'öng Zone 1 may mean that emerging leaders tried to locate different kinds of production in the same area. It is unlikely that this observed arrangement of different kinds of production was accidental, because in both cases (Sanch'öng Zone 1, Ogbang Zone 6) jade production in possible workshops was close to other activities such as grain storage, and stone tool or pottery-making. Multi-functional production zones and production in relatively small workshops are not expected in a group-based society where production is often completely household-based without any organized clustering of different activities. This transformation process toward organized and concentrated production is not expected in group-based societies.

In Phase I a minority of structures were larger than average, a large number of structures had prestige artifacts, and stone tool production was rare. Sanch'öng had the largest proportion of large structures but no artifact data was available. Almost one third of the structures larger than the Phase I mean of size were greater than 100 m<sup>2</sup>, and one quarter of those very large houses had prestige artifacts and no production. Ogbang and Zone 19 each had one structure larger than 100 m<sup>2</sup> with prestige artifacts. In Phase I a few structures with prestige artifacts were smaller than the mean size, and Ö-ün had almost half of such structures.

In Phase II structures were generally smaller, half were larger than average, and almost one quarter of those had stone tool production. A few large houses had prestige artifacts, half of the large houses were in Ogbang and contained most prestige artifacts. A few structures were much larger than the average size. One from Ogbang had stone tool production evidence and no prestige artifacts. A few structures with prestige artifacts were smaller than the mean size, and Ogbang had the majority. The trend in both phases is that structures much larger than the average had prestige artifacts.

As I show with centralization of settlement, stone tool, and jade production, centralization of large structures and large structures with (prestige) production at Ogbang is expected but not found. Instead many areas had large structures in both phases and two areas had large structures with production in Phase II. Sanch'ōng had almost half of the large structures in Phase I. In Phase I one large structure at Ogbang contained stone tool-making, but not enough data existed to say large structures were related with production of prestige polished ground stone tools. In Phase II centralization is absent because several large structures with stone tool production were found at Ogbang and also at Zones 19 and 21. It is possible that prestige stone tools were processed in two large structures at Ogbang (House 5 – with jade, Kim Y.M. 1998, House G-1, KKY 1998) and the largest house at Zone 21 (House 3, Ha 1998) because large differences in structure size indicate different status, and if a few energy intensive structures exist inequality is inferred (Wason 1994:138). Those dwellings comprise only a few of the large structures in Phase II, but because two are only slightly larger than average it is argued that this trend is suggestive of group-based society models where multiple cases of large size variation and energy intensive structures with production are not expected. A concentration of prestige artifacts in structures at Ogbang is suggested in Phase II because it had the majority of prestige artifacts, but centralization of *large* structures with prestige artifacts did not occur in Ogbang, similar to the Late Neolithic society of Thy (Earle 1997:130).

In Phase I various prestige artifacts were found in a wide size range of structures, but in Phase II most prestige artifacts were found in a range of structures of 20 m<sup>2</sup> to 37 m<sup>2</sup>. The most common prestige artifacts in structures of the 20 m<sup>2</sup> to 37 m<sup>2</sup> range were jade. Outside that range, structures with prestige artifacts included miniature pottery, jade, and polished stone daggers. When compared to the wide size

range of Phase I, these trends are indicative of possible restriction on which size of structures had which kinds of prestige artifacts.

The absence of centralization of large structures and the trend of large structures with stone tool production and prestige artifacts is suggestive of group-based societies. In Phase I structures that were larger than the mean size occurred at many sites, and multiple structures greater than 100 m<sup>2</sup> occurred at more than one site. There are no data available to explain the large 1500 m<sup>2</sup> structure at Sangch'on-ni Zone 16 from Phase II. It cannot be connected to production and it was so much bigger than any other structure it is suggestive of individualizing modes, but alternatively in group-based societies such a large structure could be interpreted as a communal or public building. The overall wide size distribution of structures with prestige artifacts in Phase I is suggestive of group-based modes where archaeological distinctions between emerging leaders, supporters, and other people were sometimes indistinct. However the limited size range of structures with prestige artifacts in Phase II is not suggestive of group-based societies.

The Korean practice of using typological seriations based on change in structure shapes from one or two type sites (Kim C.G. 1996, Lee 1996, Lim 1985) puts undue emphasis on change for change's sake and ignores anthropological explanations of past human behaviour. Functional difference, house size and shape are related and this relationship is key to understanding activities such as stone tool production. For example small structures frequently contain evidence of many subsistence activities (pottery, adzes, hearths, etc.) and no prestige artifacts, so it is assumed that they represent the living quarters of Mumun people. However three Ŏ-ün stone tool-making structures were quite small and narrow (less than 10 m<sup>2</sup>) (Lee 1997:181-82) and were possibly for production use only.

### ***Burials***

In Phase I megalithic burials were predominant; half were found in Taep'yŏng-ni (especially Ogbang), and almost half of the remaining megaliths were in Sangch'on-ni. The largest megalith was in Ogbang and it was double the size of other Phase I megaliths. Half of the small burial groups were in Ogbang and the other half were in Zone 21, which had a single prestige artifact. Megaliths became smaller and less numerous over time.

In Phase II the total number of burials doubled, stone cist burials were predominant, prestige artifacts were split between three sub-areas, and megaliths were few. Ogbang and Sangch'on-ni each contained about half of the stone cists, and other stone cists (Zones 20, 21) were sometimes part of small burial groups. The largest megalith was in Ogbang and it was three times larger than the next largest megalith, but much smaller than examples from the British Late Neolithic (Burgess 1980:163-77, Fraser 1983:348). Small burial groups doubled in the study area in Phase II and the largest proportion was at Sangch'on-ni. It is expected that Ogbang would be a major burial centre, but Sangch'on-ni is more important because it had the most megaliths in Phase I, the most stone cists in Phase II, and the largest proportion of small burial groups.

Burials with prestige artifacts increased twenty-one fold in the Nam River area in Phase II and the largest proportion was at Zone 20. Is this large increase part of a transformation of a society toward one that places more emphasis on display of wealth and status in burials? Alternatively, is this increase an artificial result of placing stone cist burials in Phase II? Korean archaeologists maintain that most stone cists occur after megaliths (Rhee and Choi 1992:72-6, Kang 1990:26,42) based on typological and artifactual evidence, and I have found consistency in applying this reasoning to the coding and analysis of Nam River burials and other assemblages. More radiocarbon dating is necessary to understand the relationships between archaeological phenomena in the Mumun Period, but until such evidence exists it appears that these results represent a trend towards more emphasis on display of wealth and prestige in burials. However it is important to note that burials with prestige artifacts were found in similar proportions during Phase II at Taep'yŏng-ni, Sangch'on-ni, and Zone 20. Since jade production is mostly found in Ogbang, perhaps prestige artifacts were made there and then given out to other areas.

As I show with stone tool production, jade production, and large structures, evidence of centralization of burials is sparse. The two largest megaliths were located in Ogbang, but in Phase I megaliths made up most of the total burials and in Phase II the largest megalith contained no prestige artifacts. Ogbang had slightly more than half of the stone cists in Phase I when they were not as common, and had the majority of megaliths in Phase II when they became more rare. However a lack of centralization is evident because Ogbang and Sangch'on-ni had about half of the megaliths in Phase I and

half the stone cists in Phase II. In Phase I the only prestige artifact (jade) from a burial was from Zone 21, and in Phase II Zone 20 contained the largest proportion of burials with prestige artifacts. In fact Zones 19 – 21 comprised half of the burials with prestige artifacts in Phase II. It is unknown if large numbers of burials were clustered at locations across the landscape, but evidence from Zone 18 shows linear patterning of burials and an absence of a large scale burial grounds, and do not suggest centralization (Pearson 1978:88).

Analysis results suggest correlations with group-based societal organization such as the building of megaliths and a general increase in the use of small group burials. The small group burials are suggestive of places where extended family were interred over more than one generation, and individual identification was with a larger group (Wason 1993:90). The largest megaliths are small (4.6 m<sup>3</sup>) compared to examples in Late Neolithic Britain (Burgess 1980:163-77, Fraser 1983:348) and may have required group labour to build. Although they indicate some inequality based on size difference, the small scale of even the largest megaliths mean that either elites were not able to convince people to build larger scale burials, or there were shared societal values which downplayed the expression of power through large scale burial investment. In Phase I a single prestige artifact was found in a burial, and in Phase II no area dominated the proportions of overall burials, small group burials, or prestige artifacts in burials. Hundreds of “cup marks” ground into the surface of both large and small megalith capstones (*KNNYPC* 1998) are also suggestive of ceremonialism and group-based modes (Rhee and Choi 1992:74, Lee S.K. 1998a) similar to Thy in Late Neolithic Denmark (Earle 1997:24).

The relationship between burial types in the Korean Peninsula is not well understood (Kang 1990, Nelson 1993) but the co-occurrence of megaliths and stone cists in small burial groups across the southern part of the peninsula is evidence they were sometimes used together. Keeping in mind that burials are dated according to typological schemes which place megaliths before stone cists, the decline in numbers of megaliths with little evidence of social inequality, combined with the trend of increasing stone cist burials with prestige artifacts is one of the clearest indications of a social transformation process in which unequal display of prestige artifacts in burials takes on a greater importance in Nam River society.

Perhaps the trends of decreasing megaliths, increasing stone cists and small burial groups means that stone cists in Phase II were placed around megaliths that were built in Phase I.

### *Ditch Enclosures*

In Phase I the only ditch enclosure was from Zone 14 in Sangch'on-ni. It was not well preserved and it was shallow and narrow. In Phase II half of the four ditch enclosures were in Ogbang and several appeared to surround Zones 10 and 12 on the north and northeast, which was the location of structures with prestige artifacts. Ditches were not more than three metres wide and 1.6 m deep, and were smaller in scale than acknowledged defensive features (Imamura 1996:182-84, Min 1996:75). Palisade evidence was found in Zone 12 beside one of the ditches.

The same pattern of centralization which can be seen in jade production in both phases can also be seen in the pattern of ditch enclosures. For example, jade production was found in a single location and there was only one ditch enclosure in Phase I, but then in Phase II there were jade production areas and ditch enclosures in more than one zone. Half of the total ditches (with palisade remains) were at Ogbang Zone 12 in relation to structures with prestige artifacts, and the other half (two cases) were in Sangch'on-ni and Zone 20. From a bird's-eye-view perspective the Zone 12 ditches were distributed in a pattern similar to ditches at the large-scale Japanese Yayoi Yoshinogari site (Imamura 1996:182-84) and used the Nam River's curve to almost enclose the area, but they did not appear to be massive enough to repel determined raiders (Min 1996:75-6). From 600 to 450 B.C. most other settlements with ditch enclosures in Yöngnam such as Ulsan Kömdal-li, Panggi-ri, and Taegu Paldal-dong were similar in scale to Zone 12 and others (Choi 1998, Lee S.J. 1998, Min 1996). In the nearby Masan Bay area, the hilltop location of the Namsan moated settlement site and the large scale (maximum depth: 4.2 m, width: 10 m) of the ring ditches dated to about 400 B.C. are more suggestive of defense and conflict (Lee S.J. 1998:53,66-70) not long after the period of this study.

Because the labour needed to construct defensive ditches is great, it is unlikely that emerging leaders could have rallied the necessary support only to symbolically distinguish the community from the outside (Choi 1998:11-2,14,23, Min 1996). Direct evidence of conflict in other parts of the study area is absent, but tension inside or between communities existed for emerging leaders to exploit the potential for

danger or need for protection and begin the ring ditch construction. However the leadership in Nam River, as in group-based societies, was not powerful and because of the small scale of the remains it is posited that ditch construction efforts were abandoned after initial attempts. Ditches were located around groups of structures with prestige artifacts, which is evidence that emerging leaders were concerned for their own safety. This is not expected in a group-based modes and represents a transformation in Nam River society towards more potential conflict, similar to the transformation towards the greater importance of prestige artifacts in stone cist burials.

The trends uncovered in this thesis are as follows. According to expectations the Nam River society had group-based organization, but some individualizing trends were also present by Phase II (see below). According to expectations of a group-based society, burials are small in scale and prestige artifacts are few, more burials are found in small groups in Phase II, and burials are distributed in a linear pattern along riverbanks rather than being clustered in large cemeteries. Homes of the Nam River people were small structures, and most stone tool production was a subsistence activity usually found in small houses during Phase I and in structures slightly larger than the mean in Phase II. Despite expectations of centralization, most settlements and burials were in Ogbang and Zone 18, and all areas experienced growth in structures. It is expected that stone tool production, jade production, prestige artifacts, large structures, and ditch-enclosure features would be centrally located in Ogbang, but although they were concentrated there, centralization did not occur because Sanch'ōng experienced growth in stone tool production, jade production, and had large structures. Most very large structures had prestige artifacts and no production. When prestige artifacts in structures are compared between zones, centralization of prestige artifacts in Ogbang is absent and artifacts were distributed quite evenly in many zones.

The mean sizes of structures with prestige artifacts and stone tool production were small in Phase I and large in Phase II. Stone tool production was found in structures of a limited size range (20 m<sup>2</sup> to 30 m<sup>2</sup>) by Phase II. These trends are a transformation process towards control of subsistence stone tool production in Ogbang and is not expected in a group-based society. Jade production was small-scale and occurred in relatively small structures which may have functioned exclusively as workshops. Contrary to expectations about group-based societies, jade production was usually found in multi-functional

production zones, which appeared in Phase II and show the transformation process in Nam River society towards organization of different kinds of production and the influence of emerging leaders in the process. Other processes of transformation in the Nam River are a decrease in structure size and increase in the abundance of prestige artifacts in houses, increased use of prestige artifacts in burials, the trend towards burial in stone cist tombs, and the construction of ditches in several areas.

Table 17 summarizes changes in Nam River area across sub-areas and variables of analysis relative to the number of structures. I show that Sanch'ōng had a low number of activities and burials but was the only area which had increases in stone tool-making, jade production, and stone cists. Taep'yōng-ni had more structures with production and more burials, but except for stone cist burial use these activities decreased through time. In Taep'yōng-ni, Ō-ūn had low numbers of activities in structures and it decreased in stone tool production, prestige artifacts and megaliths, but it increased in jade production and stone cists. I interpret this to mean that Ō-ūn, which was adjacent to a concentration of production in Zone 5, was also primarily a production area for Ogbang. In Ogbang all activities (including stone cist-building - also see Table 10) decreased relative to the number of structures, which means that even though Ogbang was bigger than most settlements, the emerging leaders there did not have much economic power. As with Ō-ūn, I interpret that Sangch'on-ni was a burial area for Ogbang because of the lack of production in Sangch'on-ni, the large increase in stone cists there, and the large size of Ogbang. Structures with activities, prestige artifacts, and megaliths decreased, but stone cists increased in Zones 19 to 21. Stone tool production and stone cists increased at Zone 19, but prestige artifacts decreased. Zone 19 was a burial area with increases in megaliths and stone cists, and stone tool production was stable in Zone 21.

Do the trends in Table 17 indicate that Sanch'ōng, Zone 19 or 20 were becoming important places? I think this is not clear because of small numbers of structures with activities and burials at both places and the lack of data at Zone 19.

### *Conclusions*

The preliminary interpretation which proposes that the Nam River settlement system (850 – 450 B.C.) is characteristic of group-based modes with weak elites and little change is not rejected. For example there were strong correlations with group-based modes such as small amounts of prestige

artifacts, and the trend towards large structures with stone tool production and prestige artifacts and large dry fields. Most stone tool production took place in living quarters, was subsistence-based, and possible locations of prestige stone tool production were dispersed. Burial and ceremonial evidence consisted of megalithic burial forms with few prestige artifacts, use of small group burials, small-sized megaliths, and embellishment of megalithic capstones by cup-marking regardless of capstone size. The majority of mortuary prestige artifacts were split between Taep'yōng-ni, Sangch'on-ni, and Zone 20. Ogbang was the largest settlement with the most concentrated production, emerging leaders, and biggest burials, but there is no evidence to show that the reach of the Ogbang economy extended beyond three kilometres in either direction of the Nam River. In fact stone tool production and prestige artifacts decreased in Ogbang and jade production did not increase. As mentioned above, the Nam River society seems to have been a megalithic tomb builders in some ways like the Danish Late Neolithic Thy (Earle 1997:130) because both societies had artifact distributions found in structures and burials which indicate group-based modes rather an emphasis on individual material wealth.

The lack of centralization of settlement in the study area shown by the growth of structures outside Ogbang from Phase I to Phase II is indirect evidence of a group-based society. Also more than one large group of structures or burials existed in both phases. Jade production was centralized in Ogbang in Phase I and remained there in Phase II, but other settlements in Sanch'ōng took up production in Phase II. It is important to note that centralization of prestige artifacts in structures or burials at Ogbang did not occur, but owing to its size Ogbang had the greatest concentration of houses with prestige artifacts.

Despite the evidence suggesting group-based modes in the Nam River, it is important to note that Phase II may have marked the beginning of societal changes toward individualizing society because some analysis results show that there are trends not expected in group-based societies in Phase II Ogbang and elsewhere. These are a limited size range of structures with stone tool production, a large increase in numbers of stone cist burials with prestige artifacts, organization of different kinds of production in the same area, and the location of the largest megaliths in Ogbang. In Phase I a correlation between large structure size and production or prestige artifacts was absent, but in Phase II this relationship became evident. The limited size range of structures with stone tool production and prestige artifacts, and the

placement of ditches almost surrounding Zone 10 and 12 structures with prestige artifacts may indicate that the character of society was changing from group-based to individual modes and that elites were starting to gain influence in some parts of the economy. The significance of the smaller overall structure sizes in Phase II is not well understood, but it could be related to some process of increasing social organization in the Nam River area.

The preliminary interpretation that the settlement system is characterized by a slow and uneven centralization process is rejected because the trends across groups of data consistently show that centralization was absent in settlement, stone tool-making, jade production, burials, large houses with production and prestige artifacts, and placement of ditches. A multi-functional production area appeared in Ogbang during Phase II, but Sanch'ōng also had one of these areas. It appears that the study area may overlap with more than one settlement system (Ogbang and Zones 19 – 21). Zones that made up Taep'yōng-ni and Sangch'on-ni were probably parts of connected neighbourhoods of larger settlements accessible by the Sangch'on River Crossing.

The preliminary interpretation that ditch enclosures are defensive features is not rejected, but it is rejected that ditches were built to protect jade or other prestige production (Keely 1996:55-6) because it seems that ditches were meant to protect emerging leaders because there is a correlation between ditches and structures with prestige artifacts.

The Nam River area settlement system from 850 to 450 B.C. gives some indication that individualizing society slowly started to develop, contrary to other findings (Kang 1990, Kim S.O. 1996:223, Pearson 1978), but the hierarchy observed seems to have been in an incipient period. For example, Ogbang was the biggest settlement with the greatest degree of functions and elites were taking a greater role in production, but the trend is that production activities and prestige artifacts decreased. My findings tend to agree with the interpretations of Rhee and Choi (1992) in that megalithic society may be more individualizing than other previously mentioned authors believed. My conclusions about developments of social complexity in the early Mumun Period Nam River do not contradict Kim S.O.'s results about finding individualizing trends that developed later (ca. 100 B.C. to A.D. 100) in Taegong-ni (1996) because I think that such developments could have occurred at different times in different regions.

Debates about the degree of societal complexity leading up to state formation in the Korean Peninsula have a place, but these issues may be eclipsed now by the large amount of settlement data available to study archaeological questions concerned with the specific processes of the formation of complex society. It is hoped further studies of greater depth will allow us to test our hypotheses about the processes taking place at the beginning of social inequality in the Korean Peninsula and East Asia.

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**Table 1 - Details of Phase I Nam River Area Settlement System**

Excavation Zone No.	Area/ Excavation Zone Name	Zone Type*	Structures	Structures with Stone Tool Production	Structures with Jade Production	Structures with Prestige Artifacts
2	SANCHŎNG AREA Sanch'ŏng Sonam-ni	s	12 (11%)	-	-	0 (0%)
3	TAEP'YŎNG-NI AREA Ŏ-ŭn 2 Zone	s	9	-	-	2
4	Ŏ-ŭn 1 Zone	s	13	8	-	2
6	Ogbang 5 Zone	s	14	x	4	1
7	Ogbang 4 Zone	s	8	1	-	0
8	Ogbang 2 Zone	s	3	-	-	0
9	Ogbang 3 Zone	s	2	-	-	0
10	Chinyang Taep'yŏng-ni	s	1	-	-	1
12	Ogbang 1 Zone	s	14	3	-	2
SUBTOTALS			64 (60%)	13 (81%)	4 (100%)	8 (62%)
13	SANGCHON-NI AREA Sangch'on-ni Dolmen 1	s	-	-	-	0
14	Sangch'on-ni Sŏnsa	des	3	-	-	2
15	Sangch'on-ni Dolmen 2	s	2	-	-	1
18	Sangch'on-ni Dolmens 9-13	s	18	1	-	0
SUBTOTALS			23 (22%)	1 (6%)	0 (0%)	3 (23%)
19	Ponch'on-ni	s	3	-	-	1
21	Kwigok-dong Taech'on	s	4	2	-	1
SUBTOTALS			7 (7%)	2 (13%)	0 (0%)	2 (15%)
TOTALS			106 (100%)	16 (100%)	4 (100%)	13 (100%)

**KEY**

\* - s - settlement; des - ditch-enclosed settlement  
x - presence; "-" - absence

**Table 2. - Details of Phase II Nam River Area Settlement Patterns**

Excavation Zone No.	Area/ Excavation Zone Name	Zone Type*	Structures	Structures with Stone Tool Production	Structures with Jade Production	Structures with Prestige Artifacts
<b>SANCH'ONG AREA</b>						
1	Sanch'ong Muggong-ni	s	7	5	2	0
2	Sanch'ong Sonam-ni	s	23	-	-	0
SUBTOTALS			30 (13%)	5 (19%)	2 (25%)	0 (0%)
<b>TAEPYONG-NI AREA</b>						
3	Ö-ün 2 Zone	s	22	-	x	2
6	Ogbang 5 Zone	s	24	x	5	2
7	Ogbang 4 Zone	des	20	2	-	0
8	Ogbang 2 Zone	s	17	-	-	0
9	Ogbang 3 Zone	s	7	-	-	0
10	Chinyang Taep'yong-ni	s	3	-	-	2
12	Ogbang 1 Zone	des	44	12	-	5
SUBTOTALS			137 (60%)	15 (58%)	6 (75%)	11 (74%)
<b>SANGCHON-NI AREA</b>						
13	Sangch'on-ni Dolmen 1	s	-	-	-	0
15	Sangch'on-ni Dolmen 2	s	13	-	-	0
16	Sangch'on-ni Konguk	des	1	-	-	0
18	Sangch'on-ni Dolmens 9-13	s	22	-	-	2
SUBTOTALS			36 (16%)	0 (0%)	0 (0%)	2 (13%)
19	Ponch'on-ni	s	15	2	-	1
20	Naech'on-ni B	des	1	-	-	0
21	Kwigok-dong Taech'on	s	8	4	-	1
SUBTOTALS			24 (11%)	6 (23%)	0 (0%)	2 (13%)
<b>TOTALS</b>			<b>227 (100%)</b>	<b>26 (100%)</b>	<b>8 (100%)</b>	<b>15 (100%)</b>

**KEY**

\* - s - settlement; des - ditch-enclosed settlement  
x - presence; "-" - absence

**Table 3 - Summary of Changes in Number of Structures in Phases I and II - Sub Areas**

Area or Excavation Zone	Phase I	Phase II	Increase /Decrease
SANCH'ÖNG AREA	12	30	+ 2.5 X
TAEPY'ÖNG-NI AREA			
Ö-ün Zones	22	22	0
Ogbang Zones	42	115	+ 2.7 X
SUBTOTALS	64	137	+ 2 X
SANGCH'ON-NI AREA	23	36	+ 0.6 X
19. Ponch'on-ni	3	15	+ 5 X
20. Naech'on-ni	0	1	+ 1 X <sup>++</sup>
21. Kwigok-dong Taech'on	4	8	+ 2 X
SUBTOTALS	7	24	+ 3.4 X
TOTALS	106	227	+ 2 X

++ - calculations involving 0 are arbitrary estimates.

**Table 4 - Summary of Changes in Number of Structures with Stone Tool and Jade Production in Phases I and II - Sub Areas**

STONE TOOLS	Phase I	Phase II	Increase /Decrease
SANCH'ÖNG AREA	0	5	+ 5 X <sup>++</sup>
TAEPY'ÖNG-NI AREA			
Ö-ün Zones	9	0	- 9 X
Ogbang Zones	5	15	+ 3 X
SUBTOTALS	14	15	+ 0.7 X
SANGCH'ON-NI AREA	1	0	- 1 X
21. Kwigok-dong Taech'on	2	4	+ 2 X
SUBTOTALS	3	4	+ 1 X
TOTALS	17	24	+ 0.4 X
JADE PRODUCTION			
SANCH'ÖNG AREA	0	2	+ 2 X <sup>++</sup>
TAEPY'ÖNG-NI AREA			
Ö-ün Zones	0	1	+ 1 X <sup>++</sup>
Ogbang Zones	4	5	+ 0.3 X
SUBTOTALS	4	6	+ 0.5 X
TOTALS	4	8	+ 2 X

++ - calculations involving 0 are arbitrary estimates.

**Table 5 - Summary of Changes in Number of Structures with Prestige Artifacts in Phases I and II - Sub Areas**

Area or Excavation Zone	Phase I	Phase II	Increase /Decrease
TAEPY'ÖNG-NI AREA			
Ö-ün Zones	4	2	- 2 X
Ogbang Zones	4	9	+ 2 X
SUBTOTALS	8	11	+ 0.4 X
SANGCH'ON-NI AREA			
19. Ponch'on-ni	1	1	0
21. Kwigok-dong Taech'on	1	1	0
SUBTOTALS	2	2	- 1 X
TOTALS	13	15	+ 0.1 X

**Table 6 - Ratios of Structures in Each Phase with Stone Tool-making, Jade Production, and Prestige Artifacts to Total Number of Structures - Sub-areas**

Area or Excavation Zone	Stone Tool Production		Jade Production		Prestige Artifacts	
	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II
SANCH'ÖNG AREA	0:12	5:30	0:12	2:30	0:12 -	2:30
TAEPY'ÖNG-NI AREA						
Ö-ün Zones	8:22	0:22	0:22	1:22	4:22	2:22
Ogbang Zones	5:42	15:115	4:42	5:115	4:42	9:115
SUBTOTALS	13:64	15:137	4:64	6:137	8:64	11:137
SANGCH'ON-NI AREA						
19. Ponch'on-ni	0:3	2:15	0:3 -	0:15	1:3	1:15
21. Kwigok-dong Taech'on	2:4 -	4:8	0:4 -	0:8	1:4	1:8
SUBTOTALS	2:7	6:24	0:7 -	0:24	2:7	2:24
TOTALS <sup>+++</sup>	16:106	26:227	4:106 -	8:227	13:106	17:227

ratio indicated = number of structures with production or prestige artifacts : total number of structures.

+++ - totals include the structure at Zone 20 (n=1), but production data is absent

- indicates positive or negative trend through Phases I and II.

**Table 7 - Phase I Burial Frequencies**

No.	Area/ Excavation Zone Name	Megalithic Burials	Stone Cist Burials	Total Burials	Small Burial Groups	Burials with Prestige Artifacts
<b>TAEPYÖNG-NI AREA</b>						
3	Ö-ün 2 Zone	2	0	2	0	0
4	Ö-ün 1 Zone	0	3	3	0	0
5	Ö-ün Village Dolmens	9	0	9	0	0
11	Ogbang Village Dolmens	18	4	22	1	0
12	Ogbang 1 Zone	2	0	2	1	0
SUBTOTALS		31 (55 %)	7 (54 %)	38 (55 %)	2 (50 %)	0 (0 %)
<b>SANGCH'ON-NI AREA</b>						
13	Sangch'on-ni Dolmen 1	1	0	1	0	0
14	Sangch'on-ni Sönsa	0	1	1	0	0
15	Sangch'on-ni Dolmen 2	3	0	3	0	0
17	Sangch'on-ni 3-8 Dolmens	6	0	6	0	0
18	Sangch'on-ni 9-13 Dolmens	13	0	13	0	0
SUBTOTALS		23 (41 %)	1 (8 %)	24 (35 %)	0 (0 %)	0 (0 %)
21	Kwigok-dong Taech'on	2 (3%)	5 (38%)	7(10%)	2(50%)	1 (100 %)
<b>TOTALS</b>		<b>56 (100 %)</b>	<b>13 (100 %)</b>	<b>69(100 %)</b>	<b>4 (100 %)</b>	<b>1 (100 %)</b>

**Table 8 - Phase II Burial Frequencies**

No.	Area/ Excavation Zone Name	Megalithic Burials	Stone Cist Burials	Total Burials	Small Burial Groups	Burials with Prestige Artifacts
	<b>SANCH'ŎNG AREA</b>					
2	Sanch'ŏng Sonam-ni	0	1	1	0	0
	<b>TAEP'YŎNG-NI AREA</b>					
3	Ŏ-ŭn 2 Zone	0	7	7	0	0
5	Ŏ-ŭn Village Dolmens	1	2	3	1	1
6	Ogbang 5 Zone	0	6	6	0	0
7	Ogbang 4 Zone	0	4	4	0	0
8	Ogbang 2 Zone	0	22	22	0	0
11	Ogbang Village Dolmens	6	7	13	2	3
12	Ogbang 1 Zone	0	11	11	0	2
<b>SUBTOTALS</b>		7 (78 %)	59 (48 %)	66 (50 %)	3 (38 %)	6 (29 %)
	<b>SANGCH'ON-NI AREA</b>					
15	Sangch'on-ni Dolmen 2	0	3	3	0	1
18	Sangch'on-ni 9-13 Dolmens	0	46	46	3	3
<b>SUBTOTALS</b>		0 (0 %)	49 (40 %)	49 (37 %)	3(38 %)	4 (19 %)
19	Ponch'on-ni	0	3	3	0	2
20	Naech'on-ni B	1	7	8	1	7 (33 %)
21	Kwigok-dong Taech'on	1	5	6	1	2
<b>SUBTOTALS</b>		2 (22%)	15 (12%)	17 (13%)	2 (25%)	11 (52%)
<b>TOTAL</b>		9 (100%)	124 (100%)	133(100%)	8 (100%)	21 (100%)

**Table 9 - Summary of Changes in Percentages of Burial Type Frequencies - by Sub-areas**

Areas or Excavation Zones	Megaliths		Increase /Decrease	Stone Cists		Increase /Decrease
	Phase I	Phase II		Phase I	Phase II	
SANCH'ONG AREA	0%	0%	0	0%	1%	+ 1 X <sup>++</sup>
TAEP'YONG-NI AREA						
Ö-ün Zones	20%	11%	- 0.6 X	23%	8%	- 3 X
Ogbang Zones	36%	67%	+ 0.9 X	31%	40%	+ 0.3 X
SUBTOTALS	56%	78%	+ 0.4 X	54%	48%	- 0.9 X
SANGCH'ON-NI AREA						
19. Ponch'on-ni	0%	0%	0	0%	2%	+ 2 X <sup>++</sup>
20. Naech'on-ni B	0%	11%	+ 11 X <sup>++</sup>	0%	5%	+ 5 X <sup>++</sup>
21. Kwigok Taech'on	3%	11%	+ 4 X	38%	4%	- 10 X
SUBTOTALS	44%	22%	- 2 X	46%	11%	- 4 X
TOTALS	100%	100%	- 6 X	100%	100%	+ 9 X

++ - calculations involving 0 are arbitrary estimates.

**Table 10 - Ratio of Burial Types in Each Phase to Total Number of Structures - Sub-areas**

Area or Excavation Zone	Megaliths		Stone Cists	
	Phase I	Phase II	Phase I	Phase II
SANCH'ONG AREA	0:12	- 0:30	0:12	1:30
TAEPY'ONG-NI AREA				
Ö-ün Zones	11:22	↓ 1:22	3:22	↑ 9:22
Ogbang Zones	20:42	↓ 6:115	4:42	↑ 50:115
SUBTOTALS	31:64	↓ 7:137	7:64	↑ 59:137
SANGCH'ON-NI AREA				
19. Ponch'on-ni	0:3	- 0:15	0:3	↑ 3:15
20. Naech'on-ni	0:0	↑ 1:1	0:0	↑ 7:1
21. Kwigok-dong Taech'on	2:4	↓ 1:8	5:4	↓ 5:8
SUBTOTALS	2:7	↓ 2:24	5:7	↓ 15:24
TOTALS	56:106	↓ 9:227	13:106	↑ 124:227

ratio indicated = number of megaliths or stone cists : total number of structures.

↑↓ - indicates positive or negative trend through Phases I and II.

**Table 11 - Summary of Changes in Percentages of Small Burial Groups and Prestige Artifacts - Sub-areas**

Areas or Excavation Zones	Small Burial Groups		Increase /Decrease	Prestige Artifacts		Increase /Decrease
	Phase I	Phase II		Phase I	Phase II	
<b>TAEP'YÖNG-NI AREA</b>						
O-un Zones	0 %	13 %	+ 13 X <sup>++</sup>	0 %	5 %	+ 5 X <sup>++</sup>
Ogbang Zones	50 %	25 %	- 2 X	0 %	24 %	+ 24 X <sup>++</sup>
<hr/>						
SUBTOTALS	50 %	38 %	- 1.3 X	0 %	29 %	+ 29 X <sup>++</sup>
<hr/>						
<b>SANGCH'ON-NI AREA</b>						
19. Ponch'on-ni	0 %	0 %	0	0 %	9 %	+ 9 X <sup>++</sup>
20. Naech'on-ni B	0 %	12 %	+ 12 X <sup>++</sup>	0 %	33 %	+ 33 X <sup>++</sup>
21. Kwigok Taech'on	50 %	12 %	- 4 X	100 %	10 %	- 10 X
<hr/>						
TOTALS	100 %	100 %	+ 2 X	100 %	100 %	+ 21 X

++ - calculations involving 0 are arbitrary estimates.

**Table 12 - Summary of Changes in Percentages of Large Structures with Evidence of Stone Tool Production - Sub-areas**

Areas or Excavation Zones	Phase I	Phase II	Increase /Decrease
<b>TAEP'YÖNG-NI AREA</b>			
O-un Zones	0 (N= 0/2)	0 (N= 0/5)	0 X
Ogbang Zones	25 % (N= 1/2)	23 % (N= 11/47)	- 1 X
<hr/>			
SUBTOTALS	17 % (N= 1/6)	21 % (N= 11/52)	+ 0.1 X
<hr/>			
<b>SANGCH'ON-NI AREA</b>			
19. Ponch'on-ni	0 (N= 0/3)	14 % (N= 1/7)	+ 14 X <sup>++</sup>
21. Kwigok-dong Taech'on	0 (N= 0/0)	50 % (N= 3/6)	+ 50 X <sup>++</sup>
<hr/>			
SUBTOTALS	0 (N= 0/3)	70 % (N= 4/11)	+ 70 X <sup>++</sup>
<hr/>			
TOTALS <sup>1</sup>	5 % (N= 1/18)	18 % (N= 15/82)	+ 4 X

++ - calculations involving 0 are arbitrary estimates.

<sup>1</sup> - the total N includes all large structures in each phase. I have included only those cases of large structures with stone tool production. Sanch'ong data are absent.

**Table 13 - Changes in Percentages of All Large Structures with Evidence of Jade Production**

	Phase I	Phase II	Increase /Decrease
Total Structures with Jade Production Evidence (Ogbang) <sup>2</sup>	0 (N= 18)	2 % (N= 2/82)	+ 2 X <sup>++</sup>

<sup>2</sup> - the total N includes all large structures in each phase. I have included only those cases of large structures with jade production. Sanch'ong data are absent.

++ - calculations involving 0 are arbitrary estimates.

**Table 14 - Changes in Percentages of Large Structures with Prestige Artifacts - Sub-areas**

Area or Excavation Zone	Phase I	Phase II	Increase /Decrease
<b>TAEP'YONG-NI AREA</b>			
Ö-tün Zones	50 % (n= ½)	20 % (n= 1/5)	- 3 X
Ogbang Zones	50 % (n= 2/4)	9 % (n= 4/47)	- 6 X
<hr/>			
SUBTOTALS	50 % (n= 3/6)	10 % (n= 5/52)	- 6 X
<hr/>			
<b>SANGCH'ON-NI AREA</b>			
	50 % (n= ½)	0 (n= 0/10)	- 50 X <sup>++</sup>
19. Ponch'on-ni	33 % (n= 1/3)	14 % (n= 1/7)	- 2 X
21. Kwigok-dong Taech'on	0 (n= 0/0)	17 % (n= 1/6)	+ 17 X <sup>++</sup>
<hr/>			
SUBTOTALS	33 % (n= 1/3)	15 % (n= 2/13)	- 2 X
<hr/>			
TOTALS <sup>3</sup>	28 % (n= 5/18)	9 % (n= 7/74)	- 3 X

<sup>3</sup> - the total N includes all large structures in each phase. I have included only those cases of large structures with prestige artifacts. Sanch'ong data are absent.

++ - calculations involving 0 are arbitrary estimates.

**Table 15 - Changes in Percentages of All Large Structures with Evidence of Stone Production and Prestige Artifacts - Sub Areas**

Area or Excavation Zone	Phase I	Phase II	Increase /Decrease
Ogbang Zones	0 (n= 0/4)	4 % (n= 2/47)	+ 4 X <sup>++</sup>
21. Kwigok-dong Taech'on	0 (n= 0/0)	17 % (n= 1/6)	+ 17 X <sup>++</sup>
<hr/>			
TOTALS <sup>4</sup>	0 (n= 0/18)	3 % (n= 2/74)	+ 3 X <sup>++</sup>

++ - calculations involving 0 are arbitrary estimates.

<sup>4</sup> - the total N includes all large structures in each phase. I have included only those cases of large structures with stone tool production and prestige artifacts. Sanch'ong data are absent.

**Table 16 - Trends of Structure Size in Each Phase According to Stone Tool-making, Jade Production, and Prestige Artifacts - Sub-areas**

Area or Excavation Zone	Stone Tool Production*		Jade Production*		Prestige Artifacts*	
	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II
SANCH'ONG AREA	-	NO -	-	DATA -	-AVAILABLE-	
TAEPY'ONG-NI AREA						
Ö-ün Zones	S	-	-	-	S	↕ L
Ogbang Zones	S	↕ L	S	↕ L	S	↕ L
SUBTOTALS	S	↕ L	-	-	S	↕ L
SANGCH'ON-NI AREA	S	-	-	-	S	↕ L
19. Ponch'on-ni	-	-	S+L	-	-	-
21. Kwigok-dong Taech'on	S	↕ L	-	-	-	-
SUBTOTALS	S	↕ L	-	-	S+L	↕ L
TOTALS	S	↕ L	S	↕ L	S	↕ L

**KEY**

↕ ↕ - indicates positive or negative trend through Phases I and II.

S - indicates structures smaller than the mean size in each phase.

L - indicates structures larger than the mean size in each phase.

S+L - indicates an equal proportion of structures smaller and larger than the mean size in each phase.

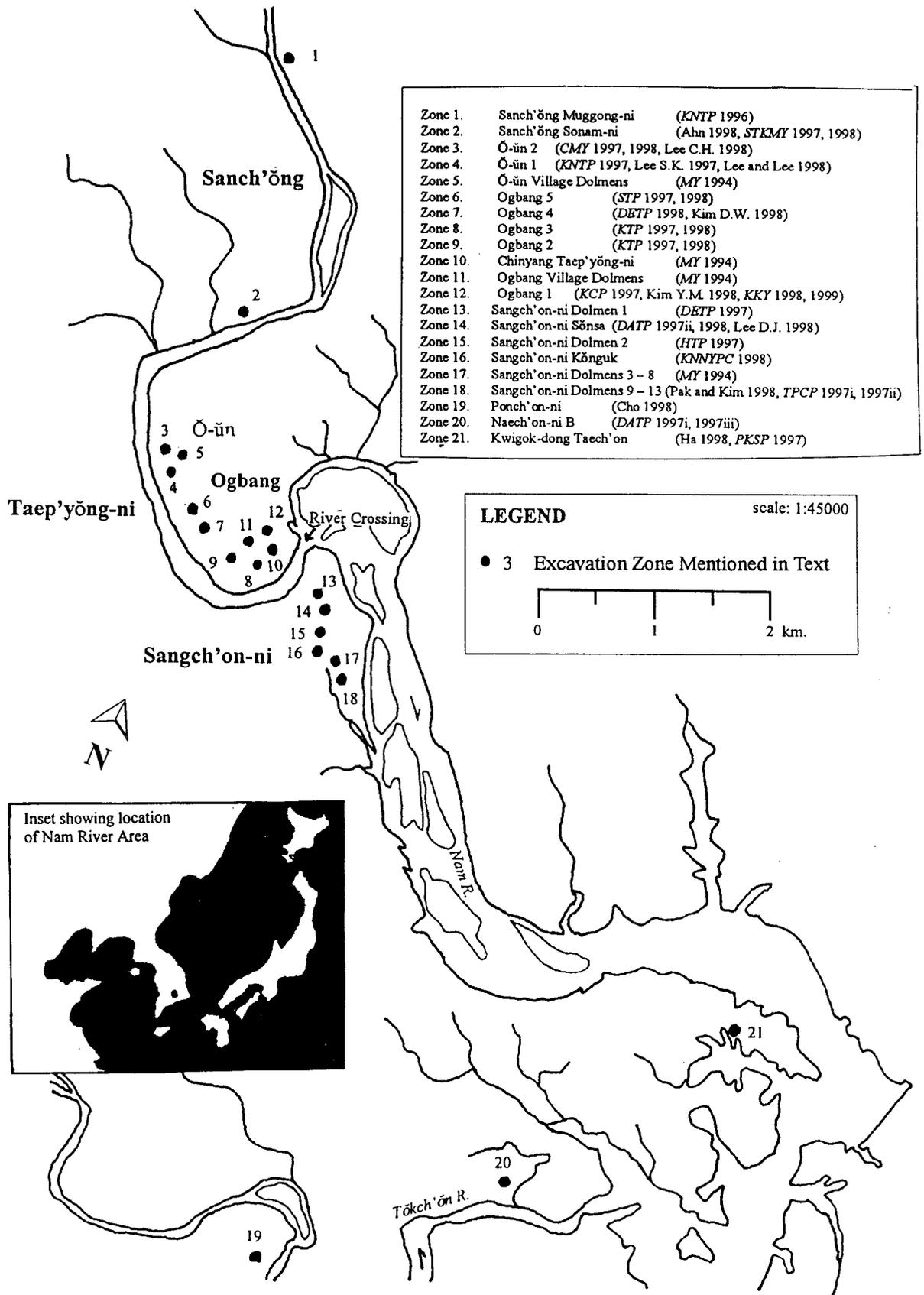
\* - structure sizes indicate the largest percentages in each category.

**Table 17 - Trends of Structures in Each Phase with Stone Tool-making, Jade Production, Prestige Artifacts, and Megaliths, and Stone Cists According to the Number of Structures - Sub-areas**

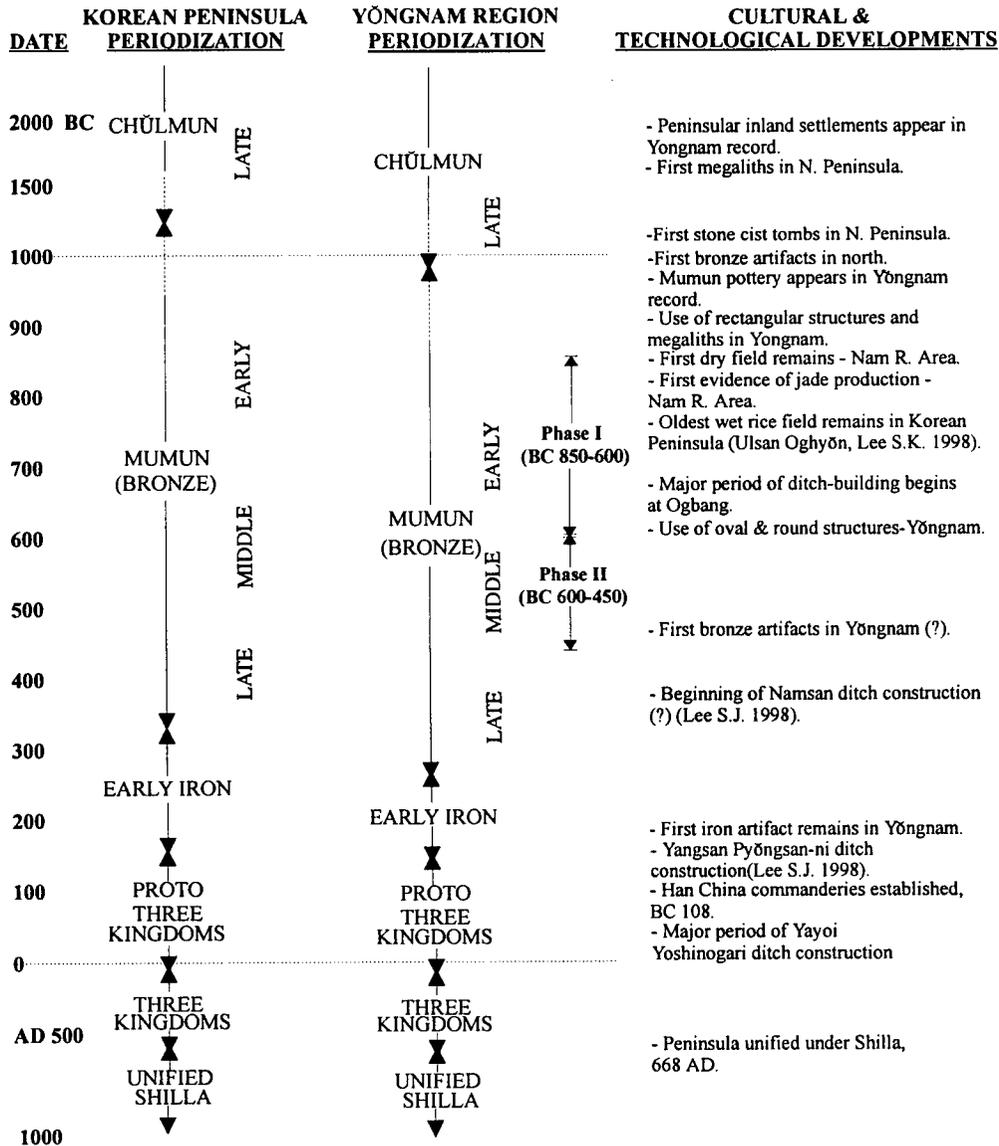
Area or Excavation Zone	% Stone Tool Production		% Jade Production		% Prestige Artifacts		% Megaliths		% Stone Cists	
	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II	Phase I	Phase II
SANCH'ONG AREA	(n=0)	(n=5)	(n=0)	(n=2)	-	-	-	-	(n=0)	(n=1)
TAEPY'ONG-NI AREA Ö-ün Zones	(n=8)	(n=0)	(n=0)	(n=1)	(n=4)	(n=2)	(n=11)	(n=1)	(n=3)	(n=9)
Ogbang Zones	(n=5)	(n=15)	(n=4)	(n=5)	(n=4)	(n=9)	(n=20)	(n=6)	(n=4)	(n=50)
SUBTOTALS	(n=13)	(n=15)	(n=4)	(n=6)	(n=8)	(n=11)	(n=31)	(n=7)	(n=7)	(n=59)
SANGCH'ON-NI AREA	(n=1)	(n=0)	-	-	(n=3)	(n=2)	(n=23)	(n=0)	(n=1)	(n=49)
19. Pongch'on-ni	(n=0)	(n=2)	(n=1)	(n=1)	(n=1)	(n=1)	-	-	(n=0)	(n=3)
20. Nacch'on-ni	-	-	-	-	-	-	(n=0)	(n=1)	(n=0)	(n=7)
21. Kwigok-dong Tacch'on	(n=2)	(n=4)	-	-	(n=1)	(n=1)	(n=2)	(n=1)	(n=5)	(n=5)
SUBTOTALS	(n=2)	(n=6)	-	-	(n=2)	(n=2)	(n=2)	(n=2)	(n=5)	(n=15)
TOTALS	(n=16)	(n=26)	(n=4)	(n=8)	(n=13)	(n=15)	(n=56)	(n=9)	(n=13)	(n=124)

 - indicates positive or negative trend through Phases I and II.

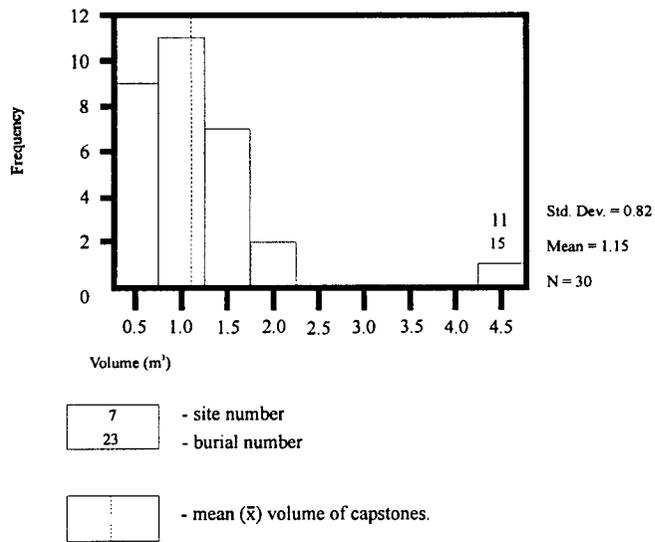
**Figure 1 – Map of Nam River Area and Excavation Zones Mentioned in the Text**



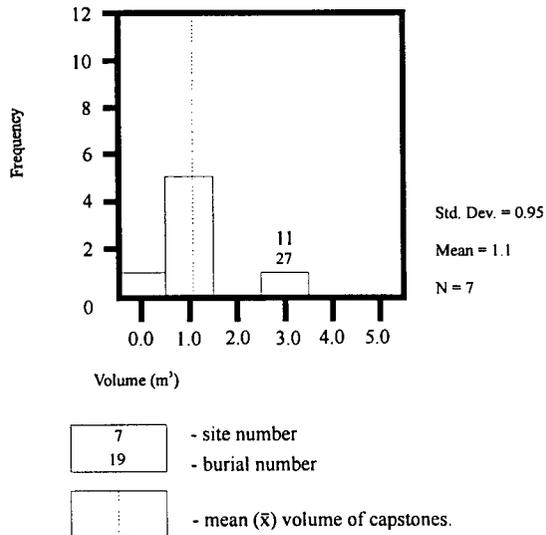
**Figure 2 – Chronology and Cultural Developments in the Korean Peninsula and Yŏngnam Region**



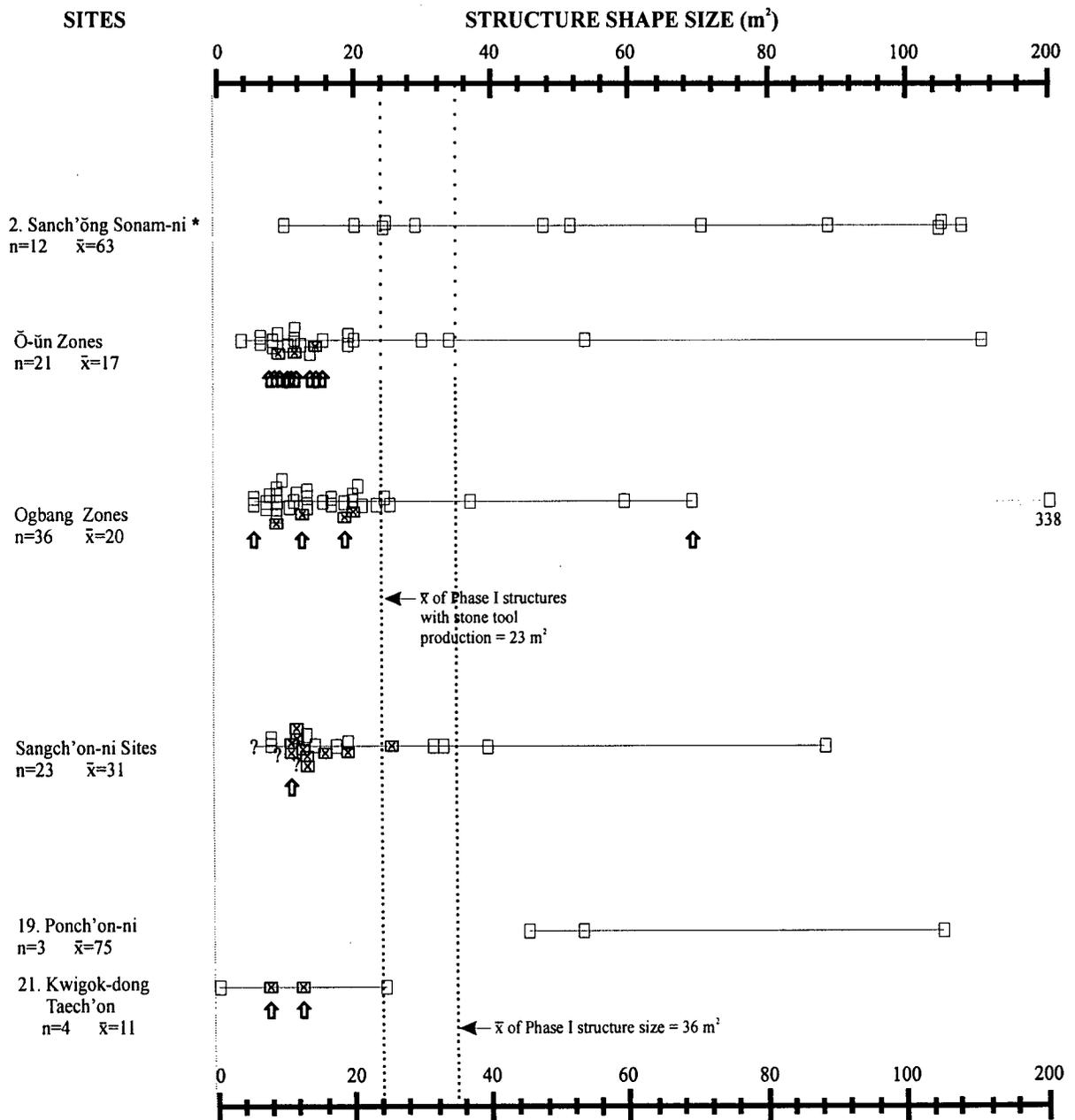
**Figure 3 - Phase I Megalithic Capstone Sizes in Volume (m<sup>3</sup>)**



**Figure 4 - Phase II Megalithic Capstone Sizes in Volume (m<sup>3</sup>)**



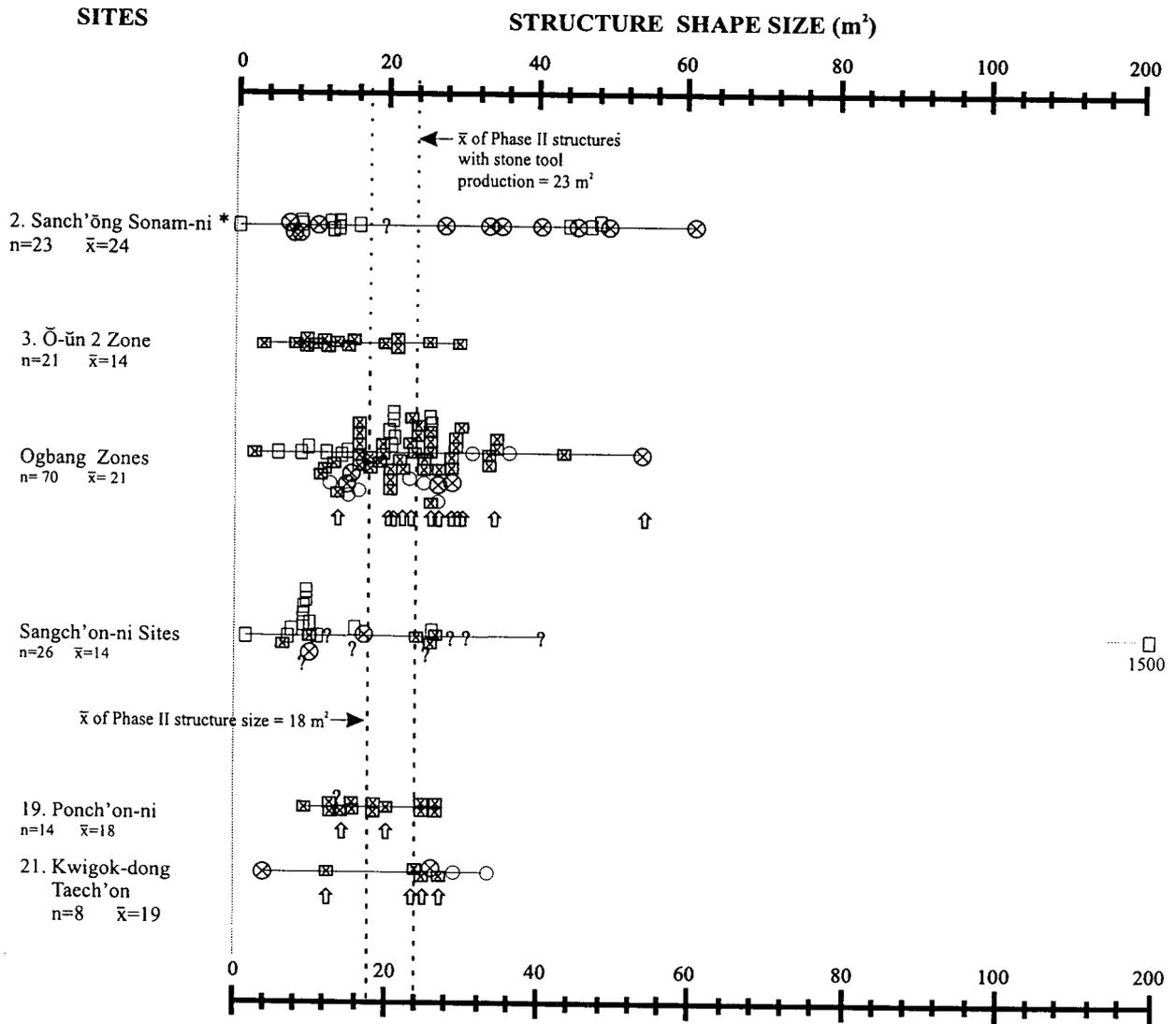
**Figure 5 - Phase I Structure Size (m<sup>2</sup>), Shapes, and Evidence of Stone Tool Production - Sub-areas**



**KEY**

- ↑ - structure with stone tool production closest to the arrow.
- - rectangular shape.
- ⊠ - square shape.
- ? - indeterminate shape.
- \* - Sonam-ni stone tool production data absent.
- ⊞ - indicates presence of more than one structure of the same size.

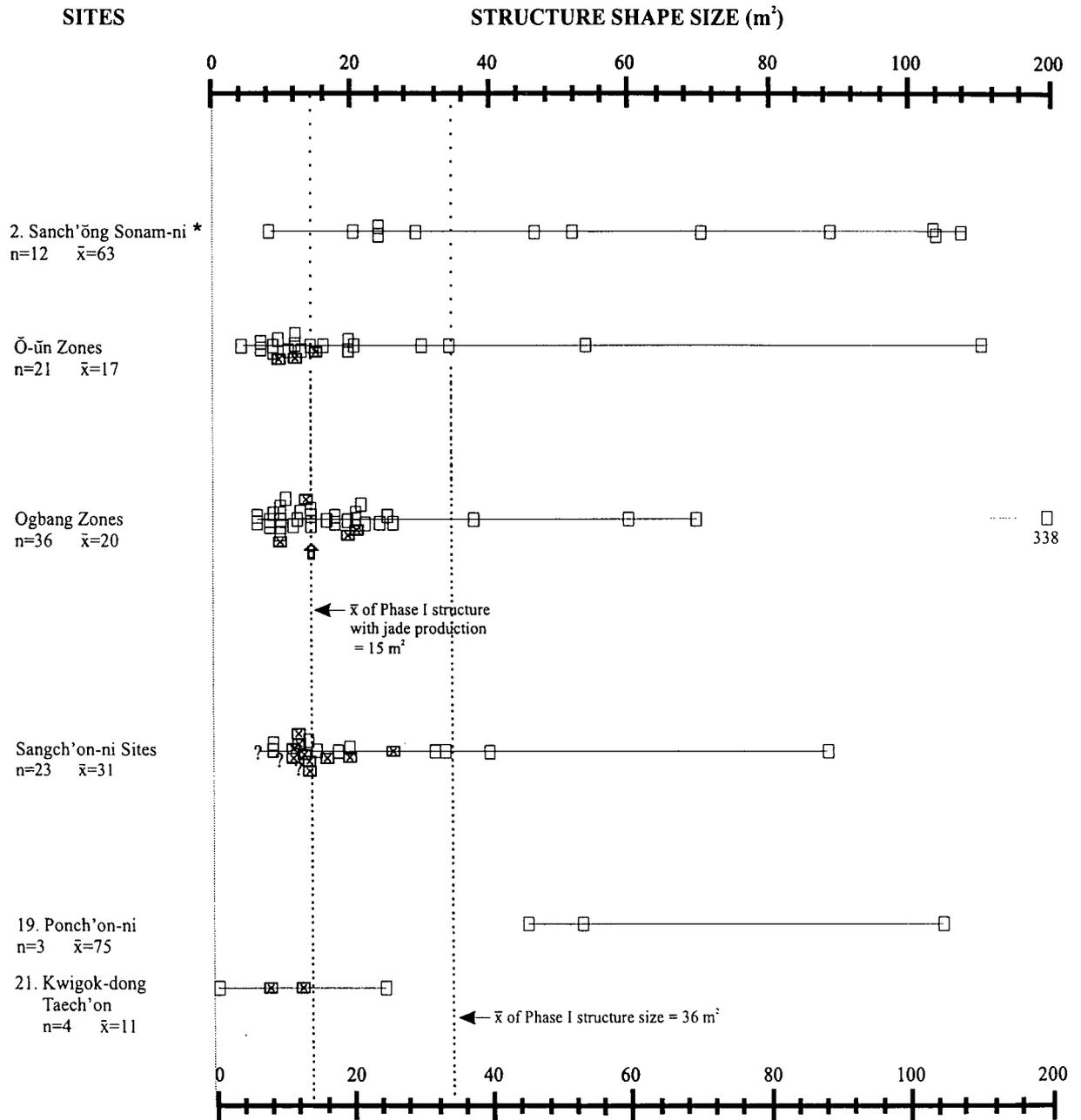
**Figure 6 - Phase II Structure Size (m<sup>2</sup>), Shapes and Evidence of Stone Tool Production - Sub-areas**



**KEY**

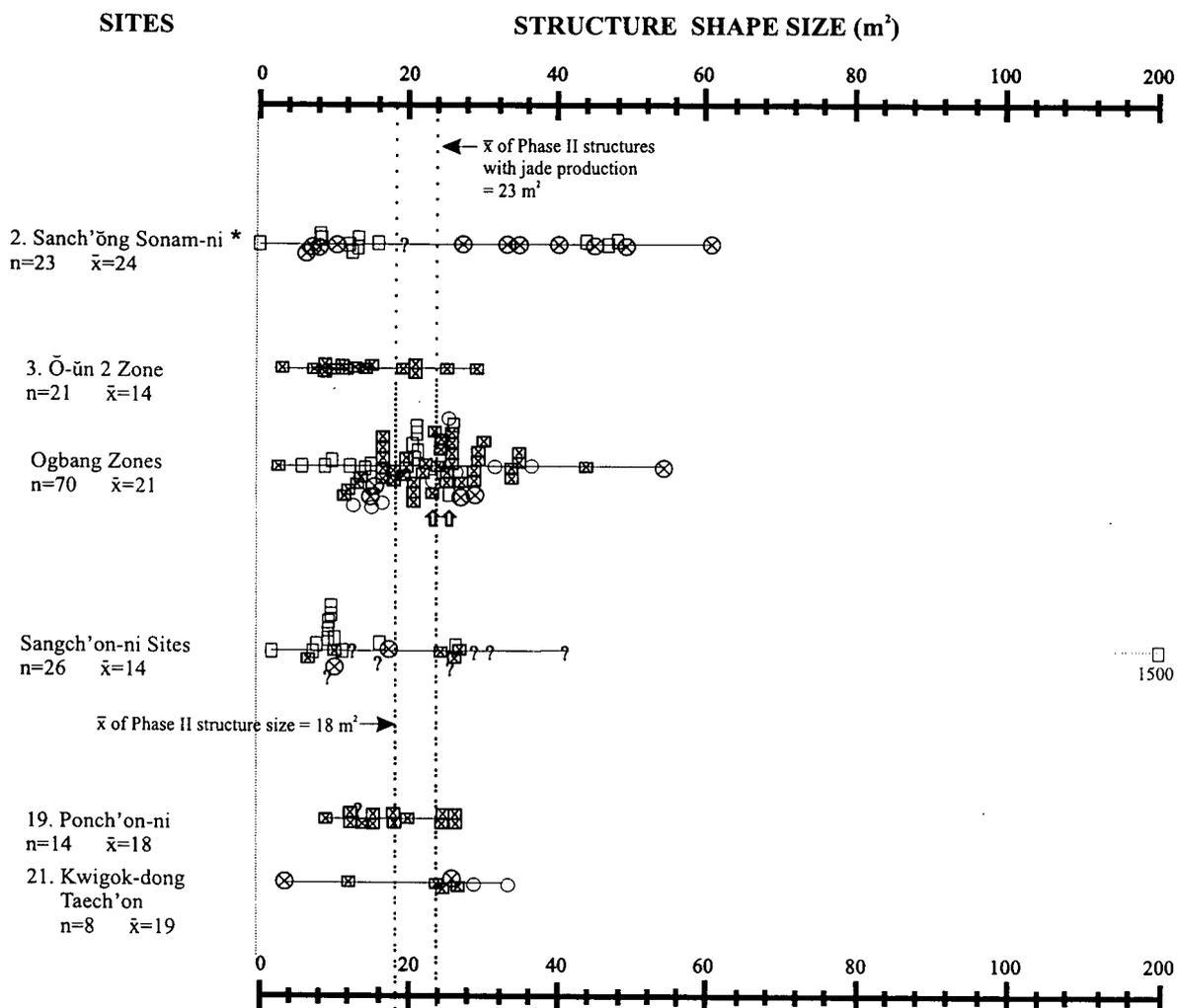
- ↑ - structures with stone tool production closest to the arrow.
- - rectangular shape.
- ⊠ - square shape.
- ? - indeterminate shape.
- ⊗ - oval shape.
- - circular shape.
- \* - Sonam-ni stone tool production data absent.
- ⊞ - indicates presence of more than one structure of the same size.

**Figure 7 - Phase I Structure Size (m<sup>2</sup>), Shapes, and Evidence of Jade Production - Sub-areas**



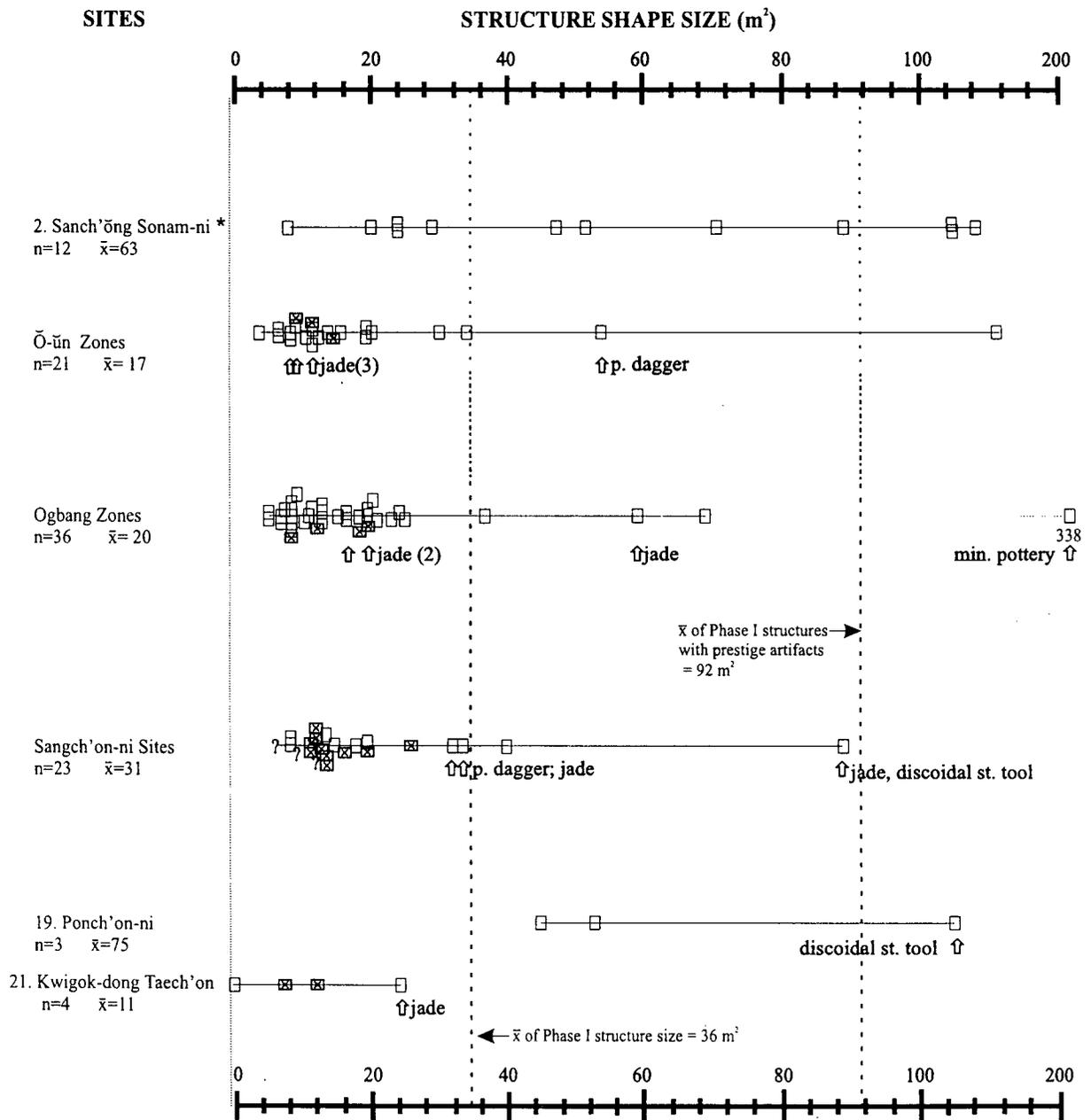
KEY	
↑	- rectangular structure with jade production closest to the arrow.
□	- rectangular shape.
⊠	- square shape.
?	- indeterminate shape.
*	- Sonam-ni jade production data absent.
⊠	- indicates presence of more than one structure of the same size.

**Figure 8 - Phase II Structure Size (m<sup>2</sup>), Shapes and Evidence of Jade Production - Sub-areas**



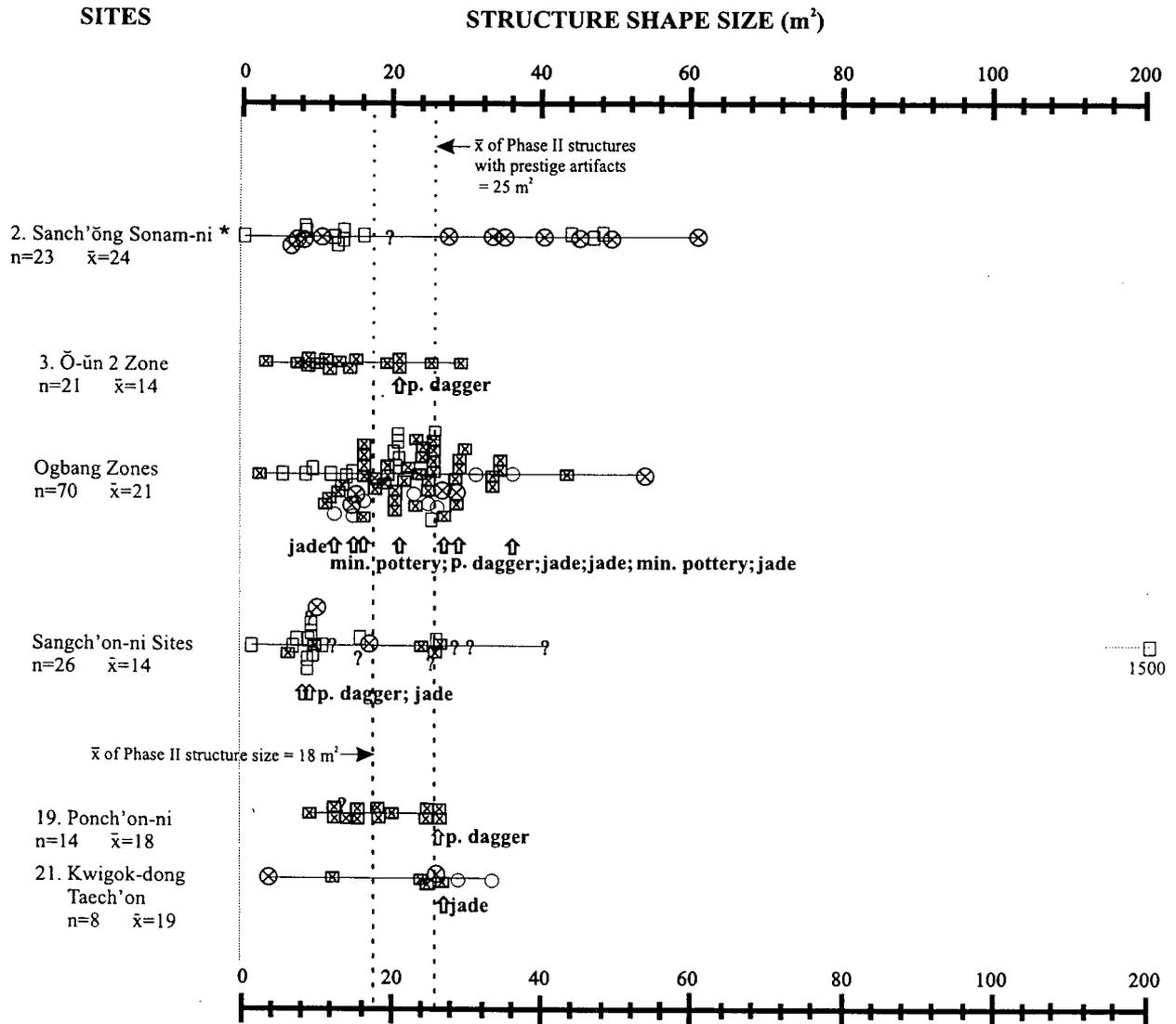
KEY	
↑	- structure with jade production closest to the arrow.
□	- rectangular shape.
⊠	- square shape.
?	- indeterminate shape.
⊗	- oval shape.
○	- circular shape.
*	- Sonam-ni jade production data absent.
⊠	- indicates presence of more than one structure of the same size.

**Figure 9 - Phase I Structure Size (m<sup>2</sup>), Shapes, and Prestige Artifacts - Sub-areas**



KEY			
↑	- presence of prestige artifact in structure closest to arrow.	p. dagger	- polished ground stone dagger.
□	- rectangular shape.	min. pottery	- miniature pottery.
⊠	- square shape.	discoidal st. tool	- polished groundstone perforated discoidal stone tool.
?	- indeterminate shape.		
*	- Sonam-ni prestige artifact data absent.		
( , )	- comma ( , ) indicates more than one prestige artifact in a structure.		
⊠	- indicates presence of more than one structure of the same size.		

**Figure 10 - Phase II Structure Size (m<sup>2</sup>), Shapes and Presence of Prestige Artifacts - Sub-areas**



KEY			
↑	- presence of prestige artifact in structure closest to arrow.	p. dagger	- polished ground stone dagger.
□	- rectangular shape.	min. pottery	- miniature pottery.
⊠	- square shape.	- semi colon ( ; )	indicates prestige artifacts in different structures.
?	- indeterminate shape		
⊗	- oval shape.		
○	- circular shape.		
*	- Sonam-ni prestige artifact data absent.		
⊞	- indicates presence of more than one structure of the same size.		

**APPENDIX - KOREAN AND OTHER PLACES, SITES,  
TERMS, AND PERSONAL NAMES IN THE TEXT**

Romanization	Korean	Sino-Korean or Other
Ahn, Choon-bae	안춘배	安春培
Bronze Age	청동기시대	青銅器時代
Ch'angwŏn Namsan	창원 남산	昌原南山
Chinyang	진양	晉陽
Chinyang Lake	진양호	晉陽湖
Chinyang Taep'yŏng-ni	진양 대평리	晉陽大坪里
Cho, Yŏng-je	조영제	趙榮濟
Choi, Mong-lyong	최몽룡	崔夢龍
Choi, Sung-rak	최성락	崔盛洛
( <i>CMY</i> ) Ch'angwŏn Cultural Properties Research Bureau	창원 문화재연구소	昌原文化財研究所
ditch-enclosure feature	환호 (환구)	環濠遺構
( <i>DATP</i> ) Dong-A University Museum	동아대학교 박물관	東亞大學校博物館
( <i>DETP</i> ) Dong-Eui University Museum	동ই대학교 박물관	東義大學校博物館
Ha, In-su	하인수	河仁秀
( <i>HTP</i> ) Hanyang University Museum	한양대학교 박물관	漢陽大學校博物館
Imamura, Keiji	이마무라 게이지	今村啓爾
Kang, Bong-won	강봉원	姜奉遠
( <i>KCP</i> ) Chinju National Museum	국립진주박물관	國立晉州博物館
Kim, Chong-gi	김종기	金正基
Kim, Dong-wŏn	김동원	金東阮
Kim, Seung Og	김승옥	unavailable
Kim, Sŏk-ju	김석주	金奭周
Kim, Yang-mi	김양미	金良美

Romanization	Korean	Sino-Korean or Other
(KKY) Kyöngnam Archaeology Research Institute	경남고고학연구소	慶南考古學研究所
(KN) South Kyöngsang Province	경상남도	慶尙南道
(KNYPC) South Kyöngsang Province Nam River Site Excavation Research Foundation	경상남도 남강유적발굴조사단	慶尙南道 南江遺蹟發掘調查團
(KNTP) Kyöngnam University Museum	경남대학교 박물관	慶南大學校博物館
(KPW) National History Compilation Committee	국사편찬위원회	國史編纂委員會
(KTP) Kyöngsang University Museum	국립경상대학교 박물관	國立慶尙大學校博物館
Kwigok-dong Taech'on	귀곡동 대촌	貴谷洞 大村
Kyöngho River	경호강	鏡湖江
Kyöngsang System	경상계	慶尙系
Lee, Chu-hön	이주헌	unavailable
Lee, Dong-ju	이동주	李東注
Lee, Gyoung-Ah	이경아	李景娥
Lee, Hong-jong	이홍중	李弘鍾
Lee, Sang-kil	이상길	李相吉
Lee, Sung-joo	이성주	李盛周
Lim, Youngjin	임영진	林永珍
megalithic burial	지석묘	支石墓
Min, Tök-shik	민덕식	閔德植
Mumun Pottery Period	무문토기시대	無文土器時代
(MY) Cultural Assets Research Bureau	국립문화재연구소	國立文化財研究所
Naech'on-ni	내촌리	內村里
Nakdong River	낙동강	洛東江
Ogbang	옥방	玉房

Romanization	Korean	Sino-Korean or Other
Ogbang Village Dolmens	우방 마을 지석묘	王房 마을 支石墓
Ogbang Zone 1	우방 1 지구	" 1 地區
Ogbang Zone 2	우방 2 지구	" 2 "
Ogbang Zone 3	우방 3 지구	" 3 "
Ogbang Zone 4	우방 4 지구	" 4 "
Ogbang Zone 5	우방 5 지구	" 5 "
Ö-ün	어은	
Ö-ün Village Dolmens	어은 마을 지석묘	漁隱 마을 支石墓
Ö-ün 1 Zone	어은 1 지구	" 1 地區
Ö-ün 2 Zone	어은 2 지구	" 2 "
Ö-ün 3 Zone	어은 3 지구	" 3 "
Pak, Po-hyön	박보현	朴普鉉
(PKSP) Greater Pusan City Museum	부산광역시립 박물관	釜山廣域市立博物館
polished ground stone discoidal artifact	환상석부	環狀石斧
Ponch'on-ni	본촌리	本村里
Rhee, Song-nai	이송래	unavailable
Sanch'öng	산청(군)	山淸(郡)
Sanch'öng Muggong-ni	산청 묵곡리	山淸默谷里
Sanch'öng Sonam-ni	산청 소남리	山淸召南里
Sangch'on-ni	상촌리	上村里
Sangch'on-ni Dolmen 1	상촌리 제 1 호 지석묘	上村里第 1 號 支石墓
Sangch'on-ni Dolmen 2	상촌리 제 2 호 지석묘	" " 2 " "
Sangch'on-ni Dolmens 3 - 8	상촌리 제 3 - 8 호 지석묘	" " 3-8 " "
Sangch'on-ni Dolmens 9 - 13	상촌리 제 9 - 13 호 지석묘	" " 9-13 "
Sangch'on-ni Könguk	상촌리 건국대학교 박물관지역	健國大發掘地域
Sangch'on-ni Sönsa	상촌리 선사	上村里 先史
Sim, Bong Keun	심봉근	沈奉謹
Sobaek Mountains	소백 산맥	小白山脈
stone cist burial	석관묘	石棺墓
(STKMY) Shilla University Kaya Cultural Assets Research Institute	신라대학교 가야문화재연구소	新羅大學校 加耶文化財研究所
(STP) Sönmun University Excavation Team	선문대학교 발굴단	鮮文大學校 博物館

Romanization	Korean	Sino-Korean or Other
Taegong-ni	대곡리	大谷里
Taep'yŏng-ni	대평리	大坪里
Tökch'ŏn River	덕천강	德川江
( <i>TPCP</i> ) Taejŏn Professional Health College Museum	대전보건전문대학 박물관	大田保健專門大學博物館
Yangsan P'yŏngsan-ni	양산 평산리	梁山平山里
Yayoi Period	야요이시대	彌生時代
Yŏngnam	영남	嶺南
<i>Yŏngnam Kogohak</i>	영남 고고학	嶺南考古學
Yoshinogari	요신오가리	吉野ヶ里