65 S. Krasner, "Approaches to the State: Alternative Conceptions and Historical Dynamics," *Comparative Politics*, 16/2 (Jan. 1984), pp.223-246.

66 In Britain, some 30% of GDP goes in spending on social security, education, health and housing. See B. Jones, *et al* (eds), *Politics UK* (Philip Allen, London, 1990), chapter 25.

67 M. Carnoy, *The State and Political Theory* (Princeton University Press, Princeton, 1984), p.3. See also S. Kim, *op. cit.* pp.19-22.

68 Data for this figure was obtained from various sources.

69 Mishra clearly summarizes the different approaches to welfare into five types: Welfare as Social Reform (Social Administration or Piecemeal Social Engineering), Welfare as Citizenship, Industrialisation and Social Welfare (Convergence Theory or Technological Determinism), Functionalist View, and Marxist Perspective. R. Mishra (1981), *op. cit.*

THE EXCAVATION OF SONGGUNGNI SHELL MIDDENS ON ANMYŎN ISLAND, KOREA

DEOG-IM AN

The Environment of the Island

Anmyŏn island lies just off the central west coast of the Korean peninsula, about 150km southwest from Seoul (Fig.1). It was originally a small peninsula attached to the mainland, allowing people and animals easy access to the area via a land route. In the 17th century, during the Chosŏn dynasty, it was artificially made into an island when a canal was cut at the top of the small peninsula to facilitate sea transport. The island remained cut off from the mainland until the construction of a bridge in 1970.

Currently, the island's total area is about 87.96 square km. It is 6km wide and 22km long. Geologically, the island is composed of mainly Pre-Cambrian quartize and quartz schist. The topography is hilly, but 60% of the island is today less than 50m above sea level. The highest point is 97m high. The coastline is ria-type with a total length of

181.8km and, due to high tidal fluctuations, a broad mud flat has developed around the island. This has been and remains important to island fisheries, though in recent years much of the coastal area has become rice plantation thanks to reclamation work.

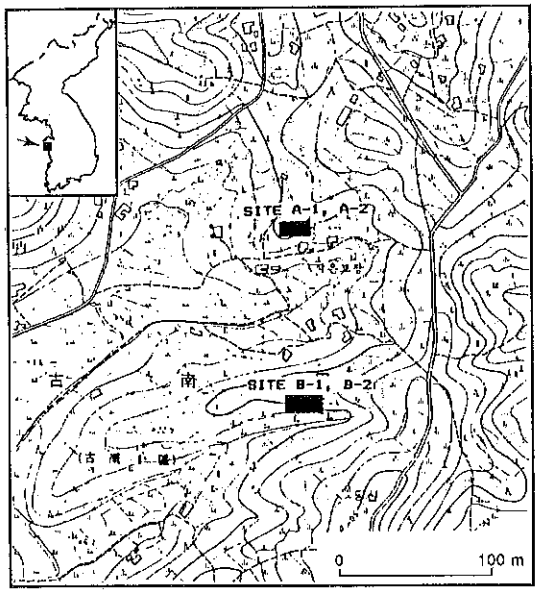

Fig.1. Distribution of the Konam-ri shell midden sites.

Excavation Campaigns in 1988 and 1989

In 1983, Hanyang University Museum surveyed the southern part of Anmyŏn as part of a project investigating prehistoric culture in the western coastal area of Korea. Amongst other settlements, they studied Songgungni, Changgongni, Nudongni and Shinyari; they discovered prehistoric and early historic sites including 13 shell middens (Kim 1983).

After this, the museum began a project to investigate the island's prehistoric culture. The project began in 1988 and has so far concentrated on shell middens at Songgungni in the southern part of the island. In 1988, two shell middens were excavated, one Neolithic (midden A-2) and one Bronze Age (midden A-1), both part of midden complex A (Kim and Shim 1990: Fig.1). In 1989, two more Bronze Age middens were excavated (B-1 and B-2), located about 250m south from midden complex A (Kim and An 1990: Fig.1).

The project aimed to obtain the following information: i) the cultural sequences of the middens; ii) a quantification of midden deposits and food resources in terms of reconstructing the subsistence economy, diet, population and duration of midden formation period; iii) the subsistence pattern—evidence of farming activities, the seasonal exploitation of food resources and so on; iv) the function of the middens and human activities associated with them; v) evidence of the past environment at the sites.

Midden Complex B

Among the excavated middens, I will discuss middens B-1 and B-2.

The sites lie on a hill about 25m-27m above sea-level that extends westward. On this hill there are four shell middens in addition to B-1 and B-2. Together, the six constitute midden complex B. Middens B-1 and B-2 are located at the most easterly point among the cluster, about 1.5km from the present coastline. Before land reclamation, however, they would have been very close to the sea. Further, parts of middens B-1 and B-2 have been disturbed by farming activities, and one local farmer told us that the area around the sites had recently been made into fields by the removal of trees.

i) *Excavation procedures*

The sites were first dissected by a grid system of, basically, 3m by 3m squares separated at 1m baulk intervals to allow identification of stratigraphic profiles. Bulk and column samples of midden deposits were collected for analysis from the baulks and from some areas in the excavation squares. The purpose of collecting samples was to obtain data not only on the overall composition of midden deposits, but also on the extent to which the composition of deposits varied horizontally and vertically through time. During the excavation, dry sieving with a sieve of 3mm gauze was used to obtain small fragments of artefacts and remains of animals and plants which could be easily missed during the processes of trowelling.

ii) *Midden B-1*

The main area of the midden which remained had a virtually semi-oval outline estimated as about 13m by 7.5m (Fig.2). The thickness of deposits was varied but ran to a depth of 70cm.

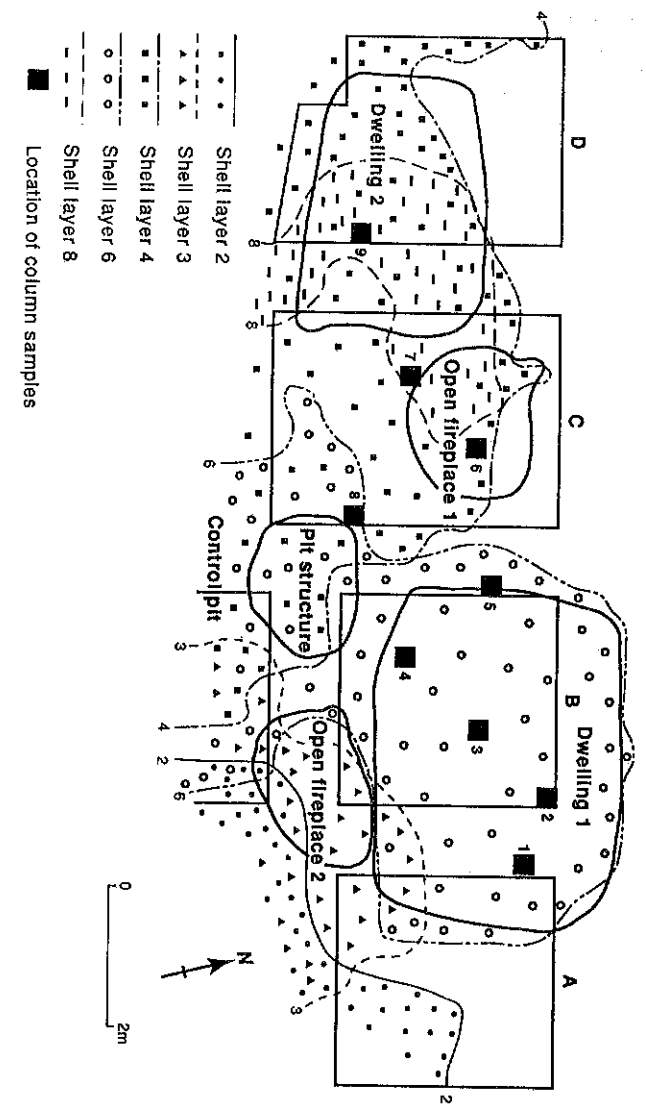

Fig.2. Plan of the excavation squares (A-D and control pit) of midden B-1 and structures (modified from Kim and An 1990:17).

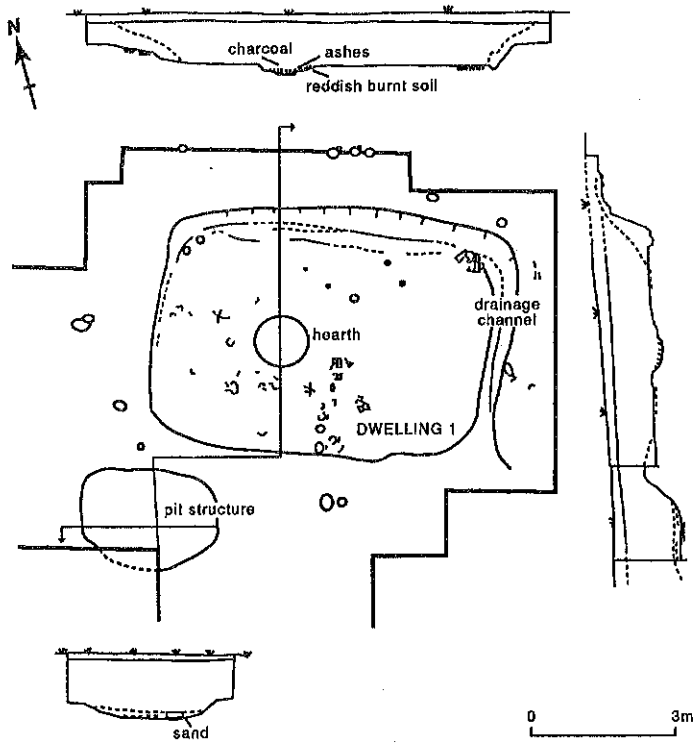

Fig.3. Plan of dwelling 1 and pit structure beneath midden B-1 (from Kim and An 1990:40).

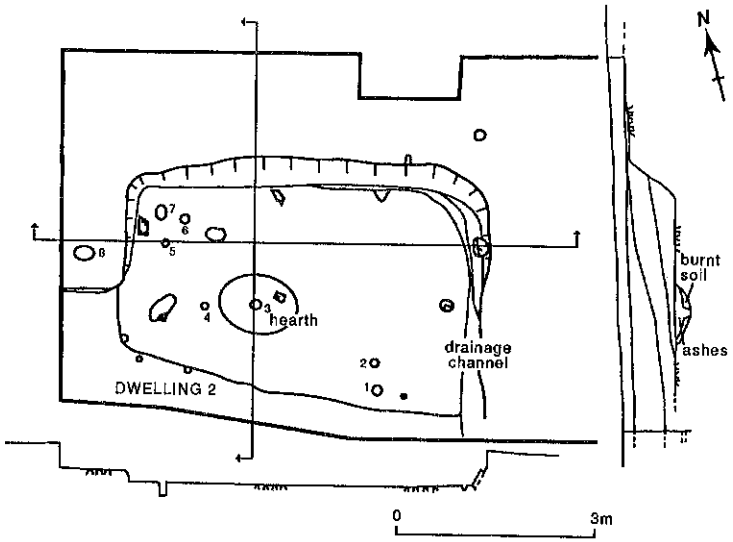

Fig.4. Plan of dwelling 2 beneath midden B-1 (from Kim and An 1990:45).

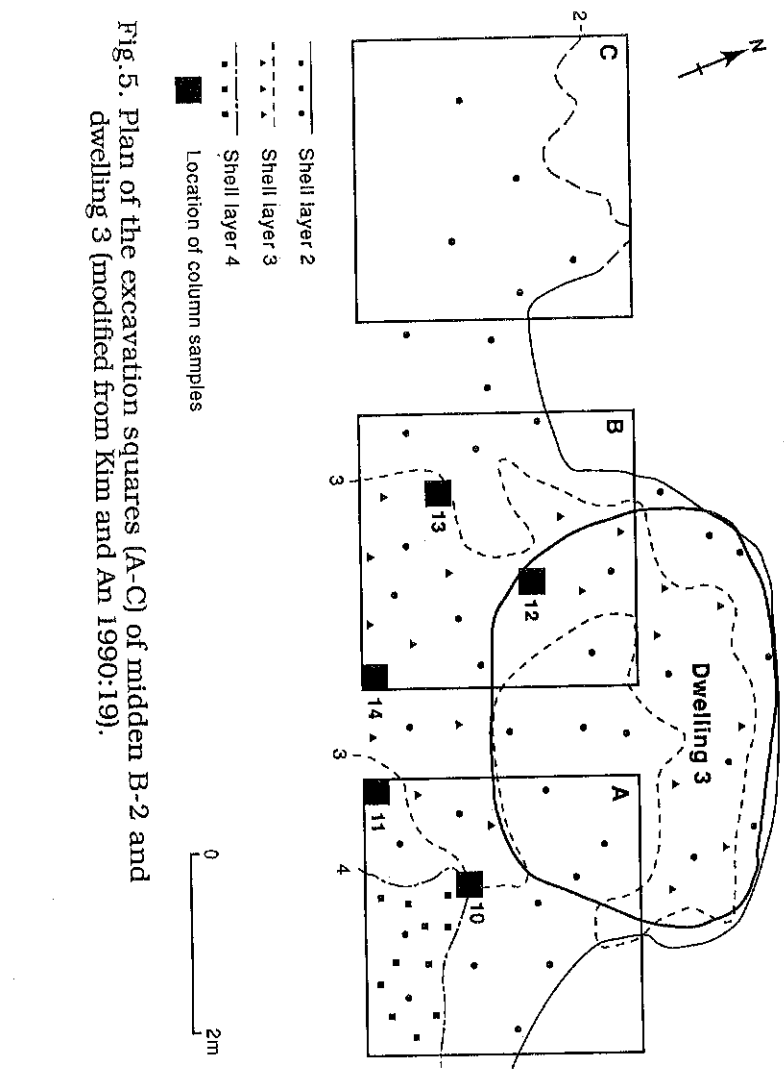

Fig.5. Plan of the excavation squares (A-C) of midden B-2 and dwelling 3 (modified from Kim and An 1990:19).

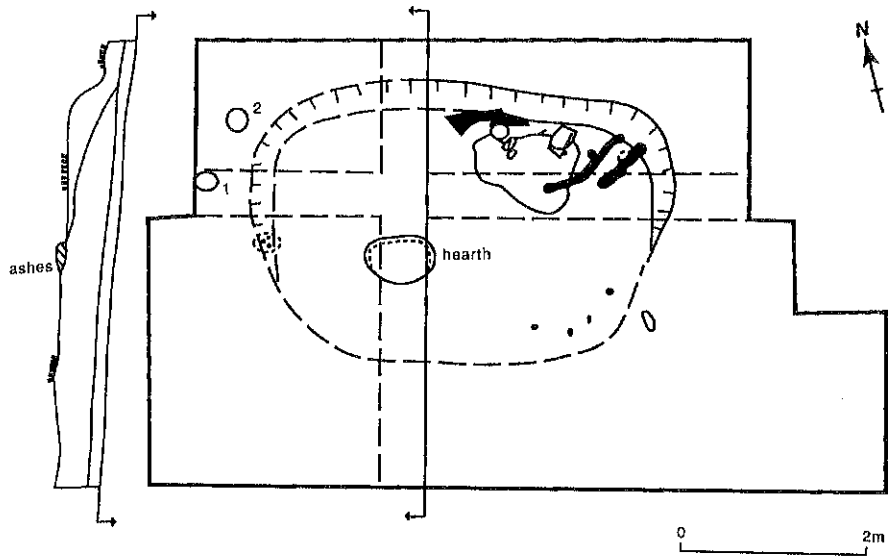

Fig.6. Plan of dwelling 3 beneath midden B-2 (from Kim and An 1990:49).

Two pit dwelling sites were found beneath the midden (see Fig.2-4). Dwelling 1 was retactangular in plan and measured 4.7m by 3.1m (Fig.3). The depth of the pit from the land surface as it had been in pre-historic times was about 56cm at the north wall and 10cm at the south wall. The difference results from the sloping land surface. A single pit hearth measuring 70cm in diameter and 10cm in depth was found beside the centre of the floor filled with ashes and charcoal. The bottom of the hearth and the area around it were fire-hardened. Surrounding this there were also concentrations of broken pot sherds, arrowheads and deer antlers, indicating that this area may have been the center for activities such as food preparation, tool-making and so on. An L-shaped drainage channel on the floor was uncovered inside the dwelling along the east and north walls. This was filled with a matrix of ash, charcoal and soil, and measured about 10cm to 20cm in width and 3cm to 6cm in depth. Twenty holes of various sizes distributed irregularly were found in the floor and outside walls. Some discovered near the south wall, lying at right angles to the wall, might be related to an entrance structure. Judging from the amount of charcoal on the north wall and the floor, this dwelling may have been abandoned due to a fire.

Dwelling 2 was located about 4m west of dwelling 1 (Figs 2 and 4), dug out of the prehistoric land surface, sloping from north to southwest, and L-shaped in section. The depth of the pit from the surface was about 40cm in the north wall, but shallower towards the south wall, though the trace and depth of the south wall was not clear. This may have been because the south wall was built on the surface. The house was rectangular in plan, and measured about 3.5m by possibly 2.4m. An oval-shaped pit hearth was found in the centre of the floor, measuring 70cm by 80cm and with a depth of about 10cm. A hole 10cm in diameter and 7cm in depth was uncovered at the centre of this, and a fire-fractured stone was found east of this hole.

Several scattered holes were also discovered in the floor and the outside walls. One big hole, located about 45cm to the west of the hearth, 16cm by 34cm in size and 20cm in depth, may have been used as a storage pit. A similar drainage structure to that found at dwelling 1 was also uncovered along the north and east walls, measuring between 4cm and 10cm in width and between 2cm and 6cm in depth.

In addition, a pit structure was found about 60cm southwest of dwelling 1 (Figure 2). The pit was oval in shape and measured 190cm by 150cm. The depth was about 40cm at the north wall, but became shallower to the south. It ran along the southern limit of the prehistoric land surface due to sloping from north to south. It was filled from bottom to top with ash, charcoal and shells. The bottom was hardened by fire and red in colour. The function was not clear, but perhaps it was used for a fire associated with dwelling 1. In addition to this, two open fire-places were found, one in an area between dwelling 1 and 2, and the other in an area above the south wall of dwelling 1 (Figure 2).

iii) *Midden B-2*

Midden B-2 was found on the lower slope about 20m west of midden B-1. The main area of the midden which remained was estimated to be about 13m by 5.6m, and almost semi-oval in outline (Figure 5). The thickness of deposits varied up to a depth of 70cm in the centre, but were thinner towards the outer limit.

One pit dwelling was found beneath this midden. It was almost rectangular, and was estimated to be about 4.1m by 2.8m in size (Figure 6). The dwelling penetrated the prehistoric land surface, tilting from north to south at a depth of about 65cm at the north wall, but becoming

shallower towards the south wall. There was no clear trace of the south wall, which again suggests this may have been built on the surface. An oval-shaped pit hearth was uncovered slightly to the south of the floor's centre which measured about 80cm by 50cm and approximately 10cm in depth. This was filled with ash. A lump of charred millet was also uncovered at the north-eastern corner and wood charcoal, possibly the remains of burnt post-holes or roofing materials, was found on the north wall. Judging from this and the heat-hardened floor, this dwelling may also have been abandoned due to a fire.

iv) *Artefacts*

Two kinds of pottery, plain and red-burnished, were recovered. The shape of the former can generally be divided into three main types: deep flower-pots (Figure 7.1-4), bowls (Figure 7.5-6), and jars (Figure 7.7). Some of the pottery shaped as flower-pots and jars had notched stripes on the rims (Figure 7.2-4). The red-burnished vessels were all broken (Figure 8), but it was possible to infer the shapes based on surviving rims and base sherds. These vessels can be divided into jar-shaped vessels with round or flat bases and bowl-shaped vessels with flat bases.

Various polished stone tools were found which may have had different functions such as hunting, farming, food processing, wood working and bone working. These tools included saddle querns (Figure 9.1), rubbing stones, arrowheads (Figure 9.2-5), adzes including grooved adzes (Figure 9.6, 9.7 and 9.11), chisels (Figure 9.8), daggers, a mace head (Figure 9.9), hammer stones, stone tools with central grooves on both flat sides (Figure 9.10), and spindle whorls.

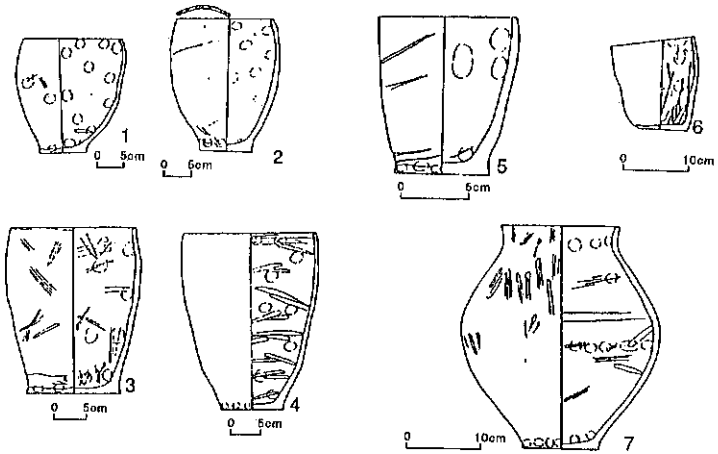

Fig.7. Plain pottery from midden B-1 (5 and 7) and dwellings 1 (3 and 4) and 3 (1, 2 and 6) (from Kim and An 1990).

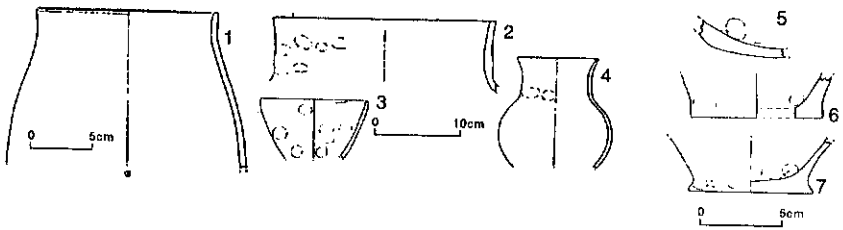

Fig.8. Red-burnished pottery from middens B-1 (1, 3, 5-7) and B-2 (2, 4 and 9) (from Kim and An 1990).

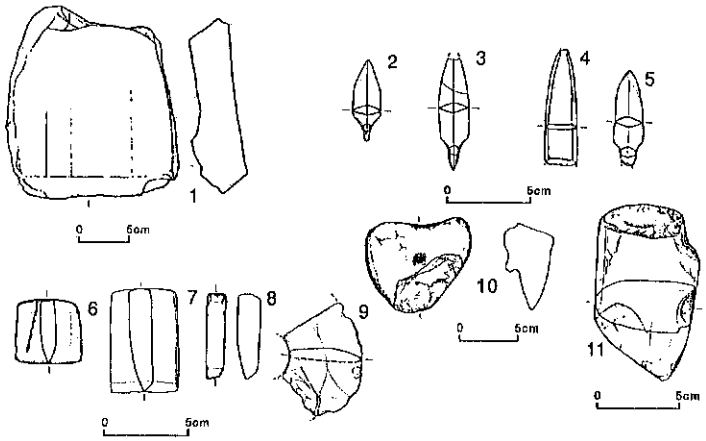

Fig.9. Stone tools from middens B-1 (2-9) and B-2 (10 and 11) and dwelling 2 (1) (from Kim and An 1990).

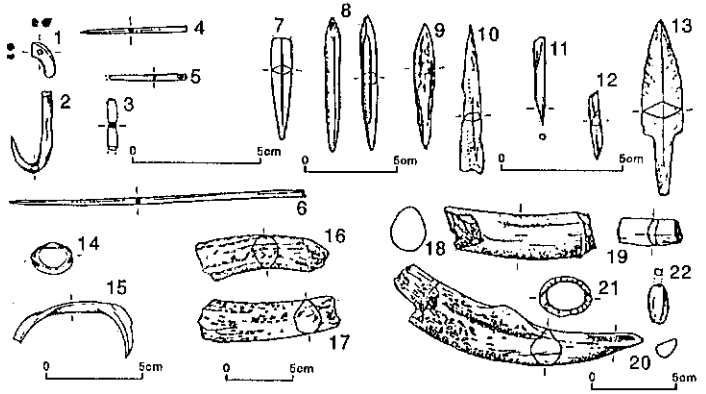

Fig.10. Jade, shell, bone, tusk and deer antler objects from middens B-1 (1-10 and 12) and B-2 (14 and 15) and dwellings 1(11 and 13) and 3 (16 and 17) (from Kim and An 1990).

Among these tools, arrowheads were particularly abundant. Around 60 polished arrowheads were discovered, mostly with stems and diamond-shaped in cross section, though some were hexagonal. Schist was the most important material for arrowheads followed by slate; a few were made of phyllite and sandstone. A comma-shaped green jade ornament was found (Figure 10.1) which was almost rectangular in cross section and had a biconical hole perforated from both sides.

Deer antler objects such as spearhead-like points and arrowheads (Figure 10.7-9 and 10.13), and several worked antlers (Figure 10.16-20) were discovered. Two fish-hooks were recovered, one complete, one broken (Figure 10.2-3), made of wild boar tusk. Polished bone objects included points (Figure 10.10), drills (Figure 10.11-12) and needles (Figure 10.4-6). Some needles were made from deer antlers or the tail spines of rays. Five shell objects were recovered. Two were made of olive shells (*Oliva mustelina*, Figure 10.22), and the umbo area of the shells was perforated and ground. Two other were bead-like ornaments made of limpet (*Acmaea pallida:* Figure 10.21) and ark (*Tegillarca granosa:* Figure 10.23). The fifth was made of an ark shell (*Scapharca broughtonii*: Figure 10.14) and was broken, but it had once resembled a bracelet in shape.

v) *Natural finds*

The middens consisted of about 70% shells 30% soil. Oyster shells (*Crassostre a gigas*) were the most abundant among the shell species followed by Venus clams (*Tapes philippinarum*) and rock shells (*Rapana verosa* and *Thais clavigera*). Most uncovered shells come from species which mainly inhabit inner tidal zones, which indicates a heavy dependence on this zone for collection. As for plant remains, a charred and hulled japonica-type rice grain

(*Oryza sativa*), a charred peach seed, and a lump of charred millet were found, along with an imprint of japonica-type rice on the flat bottom of a pot sherd which suggested rice cultivation.

Animal remains of mammals, fish, birds, snakes, frogs, turtles and sea-urchins and crabs were all recovered. Among mammals, deer (*Cervus nippon*) and wild boar(*Sus scrofa*) were most common (Table I). The hunting season of these animals is now under study using the growth lines of teeth. Wild pigs were likely hunted during autumn according to this, for many of the mandibles show prestage of the first molar. Twenty fish species have been identified (Table II). Among these, sea bream is most common. Based on a study of their scales, they were likely caught in spring, around May. Among the six identified bird species (Table III), ducks are notable. They migrate into Korea in the late autumn and stay until the following spring, indicating the period during which they would have been caught.

TABLE I

IDENTIFIED MAMMALS FROM MIDDENS B-1 AND B-2

Species	B-1	B-2
Sus scrofa	+	+
Cervus nippon	+	+
Canidae	+	
Canis familiaris		+
Nyctereutes procyonoides kor.	+	
Vulpes vulpes peculiosa	+	
Felidae	+	
Felis bengalensis manchuria	+	
Meles meles		+
Rattus sp.	+	+

TABLE II

IDENTIFIED FISH SPECIES FROM MIDDENS B-1 AND B-2

Species	B-1	B-2
Chrysophrys major	+	+
Achanthopagrus schlegeli	+	
Argyrops bleekeri	+	
Lateolabrax japonicus	+	+
Rajiformes	+	+
Paralichthys olivaceus	+	+
Holorhinus tobijei	+	+
Squalidae	+	
Triakidae	+	+
Squatinidae	+	+
Tetraodontidae	+	+
Fugu pardalis	+	
Sphoeroides rubripes	+	
Platycephalus indicus	+	
Nibea imbricata	+	
Ilisha elongata	+	
Argyrosomus argentatus	+	
Astroconger myriaster	+	
Sardinia melanosticta	+	+
Engraulis japonica	+	+
unidentified species	+	+

TABLE III

IDENTIFIED BIRD SPECIED FROM MIDDENS B-1 AND B-2

Species	B-1	B-2
Anatidae	+	+
Corvidae	+	
Gaviidae	+	
Milvus migrans lineatus	+	
Phasianus colchicus	+	+
Streptopelia orientalis	+	
unidentified species	+	

Discussion

I have sketched the second excavation campaign of the Songgungni shell midden on Anmyŏn Island. The excavation is significant in two main respects. Firstly, the middens can be dated to the Bronze Age in terms of artefact assemblages. Because few Bronze Age shell middens had previously been discovered in Korea, it had been thought that the people of the time had not depended on shell foods. There have been suggestions that middens were covered by a rise in sea level. Because there is no evidence of significant sea-level changes, and since many contemporaneous shell middens have now been discovered on Anmyŏn Island (four were excavated in 1988, 1989 and 1990), the assumptions are not acceptable. We can assume that Bronze Age middens may yet be found elsewhere. Secondly, the Songgungni middens have revealed a great number of animal bone artefacts which can help us understand the function of the middens themselves. Very few animals bones have been recovered from shell middens on the western coast of Korea compared to middens on the south coast, and so it has been argued that there may be functional differences or cultural differences relating to food preferences separating the two regions. The excavations at Songgungni makes it clear that this distinction may relate to a functional difference between middens. There were plenty of bones recovered at Songgungni, which suggests that the shell middens may be related to home-base middens rather than simple shell-fish processing middens. This interpretation can be supported by the various kinds of everyday stone tools, pot sherds and food remains recovered.

Finally, the similarity of artefacts found in middens and houses suggests there was no great time difference between the sites; just after the abandonment of the dwellings, the middens might have rapidly formed above

them. Judging from the similarity of artefacts in their composition and similarity of dwelling sites in their structure, these sites seem to parallel dwelling sites from Puyo, dated to about the 5th century B.C. (Kang *et al* 1979; Chi *et al* 1986; An *et al* 1987). Deep flower-pot shaped vessels, either with or without notched-stripe rim patterns have, however, not been discovered at Songgungni (where only one rim sherd was found). This remains as a problem for interpreting the relation between Songgungni and Puyo sites, and further study is required. It may, nonetheless, be possible to interpret the Songgungni sites as belonging to a marginal area of the central culture which retained earlier pottery traditions such as the deep flower-pot vessels, yet also adopted the later Songgungni type pottery. The Songgungni sites are, therefore, very important in understanding the process of development in the past cultures of the central-west part of Korea.

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SOCIAL STRUCTURE IN A MEGALITHIC TOMB SOCIETY IN KOREA

BONG WON KANG

The focus of my paper is a reconstruction of the social structure of a megalithic tomb society in Korea's South Kyŏngsang Province (Figure 1). I examine the archaeological record to track the sociopolitical level and attempt to determine whether tombs were associated with a complex social organization—a chiefdom—or egalitarianism.

My examination concentrates on three major themes: i) chronological problems relating to the Korean Bronze Age and megalithic tombs; ii) general aspects of Korean megalithic tomb cultures; iii) the social organization of megalithic tomb society. In order to address the third theme I have conducted mortuary analysis, primarily based on artefact assemblages of grave goods and physical labour expenditures for the construction of megalithic tombs.

Editorial Note: The chronology of the Korean Bronze Age remains fluid and controversial. Korean scholars tend to date it to 900-400 B.C., but Riotto has recently argued there are two distinct periods, Bronze Age 1 (600-300 B.C.) and Bronze Age 2 (coinciding with the beginning of the Iron Age, 300-100 B.C.). See Maurizio Riotto, The Bronze Age in Korea. Occasional Papers 1. Kyoto: Italian School of East Asian Studies (1989).