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Archaeology in Africa and Asia : Archaeological Approaches to the Interdependent Relationships between Prehistoric Hunter-Gatherer and Farmer Societies

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Archaeological Approaches to the Interdependent Relationships between Prehistoric Hunter-Gatherer and Farmer Societies

Hidefumi Ogawa

Tokyo University of Foreign Studies

INTRODUCTION

How have the Agta hunter-gatherers of northeastern Luzon, Philippines, maintained their social relationships with farmers since the start of agriculture in this area up to the present day? The purpose of this paper is to examine the long history of the interdependent relationships between hunter-gatherer and farmer societies using as clues their utilisation of natural resources as recovered by archaeology.

Within northeastern Luzon, the natural environment on which Agta hunter-gatherer society has been based is the tropical rain forest and its adjacent areas, whereas rice production by farmers started in the region's lowlands almost 4,000 years ago (Snow *et al.* 1986). The present interdependent social relationship between hunter-gatherers and farmers is maintained by the exchange of food, forest goods and labour, and functions as a network of locally supported resource distribution complementing long distance trade between Northern Luzon, China and other Southeast Asian areas. Through the forest products exchanged with the Agta, farmers have been able to access forest goods since at least 3,000 years ago (Headland and Reid 1989: 46).

The reason why hunter-gatherers have continued to survive in this area until now has been discussed in terms of their isolation from other groups. The Isolation Model was for long commonly accepted (Heine-Geldern 1932), but in the 1970s a new model began to be developed based on the ecological relationships between human beings and nature (Hutterer 1976). These studies quantitatively investigated the precise nature of the resource exchanges between hunter-gatherers and farmers in terms of their efficiency of energy revenue and expenditure. Peterson (1978) emphasised that exchange between these two different kinds of society, each practising its own distinctive mode of subsistence, makes it possible for them to utilise resources in a complementary and self-sufficient fashion, something that Peterson and Peterson (1977) describe as the 'exchange adaptation'. A consequence of establishing this kind of system in the prehistoric period was the minimisation of population increase and the avoidance of economic and social expansion, something that contrasts with the general tendency of human history since the beginning of

agriculture. As a result, it has been possible for the hunter-gatherer component of the wider system to persist until the present, although the tendency to focus on exchange has been criticised for confining the two societies within a static system and closing the door to social change (Ogawa 1996; 2000).

However, by the very fact that hunter-gatherers still exist in northeastern Luzon, an analytical framework for studying them and their farmer neighbours through the prism of the exchange of resources between two societies with different technological bases should still be effective. It is still a matter of controversy among anthropologists and archaeologists whether hunter-gatherer societies could sustain themselves alone in tropical rain forest environments independently of obtaining carbohydrates through exchange with farmers (Headland and Bailey 1991). Although rooted in Southeast Asia, this controversy shares with the well-known Kalahari debate the question of whether hunter-gatherers have remained isolated from surrounding farmer societies. In this way, although the history of hunter-gatherer and farmers based on their exploitation of the natural environment has been actively discussed, investigating the matter further using data collected from excavation necessarily falls into the hands of archaeologists.

EXCHANGE IN OPEN SOCIAL SYSTEMS

It seems likely that it was the uneven distribution of resources that encouraged the development of the exchange of foods or raw materials between prehistoric hunter-gatherers and farmers living adjacent to one another. However, until the economic and social roles of each exchange partner were fixed, the situation may have repeatedly oscillated between one of conflict and one of peace. As a result of repeated encounters, it is supposed that both the production of resources for exchange and the reproduction of social relations may have changed significantly in both societies. To reconstruct these prehistoric situations, we need to specify the social factors involved and establish which mechanisms may have facilitated positive feedback to produce long-lasting change.

Archaeological data discussed here now provide some confirmation of the prehistoric relationship of interdependency between hunter-gatherer and farmer societies in northeastern Luzon, posited by Headland (Headland and Reid 1989; Headland and Bailey 1991). This relationship may be modelled as shown in Figure 1. The exchange of food and labour is the same as in the exchange adaptation model of Peterson and Peterson (1977). But taking account of the issue raised by Headland as to whether hunter-gatherer societies *can* survive independently in the tropical rain forest, we should also assume the model to be open to the outside world. Materials and information flow into both hunter-gatherer and farmer societies through networks based on ties of kinship or friendship. As a result, the two societies can be expected to have reproduced their social relationship in their own way and to have experienced changes of social structure and increasing complexity. Social stratification will have been one consequence for farmers of increasing access to

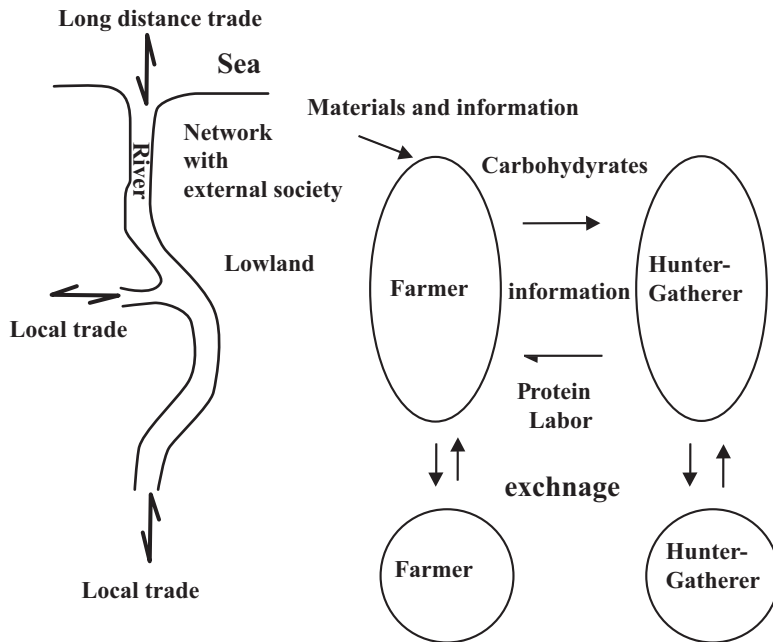


Figure 1 Interdependent model of prehistoric hunter-gatherer and farmer societies.

materials and information. As part of these changes, it may have become easier for farming communities to influence hunter-gatherer society directly, but such influences did not change the fundamental structure of the latter, allowing Agta society to persist into the present.

INITIAL CONTACT

It has frequently been argued that farmer societies expanded through a process of agricultural diffusion that involved invading the territory of hunter-gatherers and transforming them into farmers. Dennell (1985) questioned this theory of agricultural diffusion, considering instead the several types of initial contacts between farmers and hunter-gatherers identifiable in the archaeological record (Figure 2). Where interaction was mobile, hunter-gatherers may have positively accepted agricultural techniques and assimilated to farmer societies, or farmers may have eliminated hunter-gatherers and taken their territory for themselves. Where, however, interaction was static, no contact may have taken place or, at best, this may have taken the form of the passive exchange of materials.

Dennell (1985: 136) estimated that the most likely type of contact between hunter-gatherers and farmers would have been that of passive interaction, i.e. hunter-gatherers would neither have been positively accepted by farmer societies, nor absorbed by them. The initial approach for such interactions might well have come

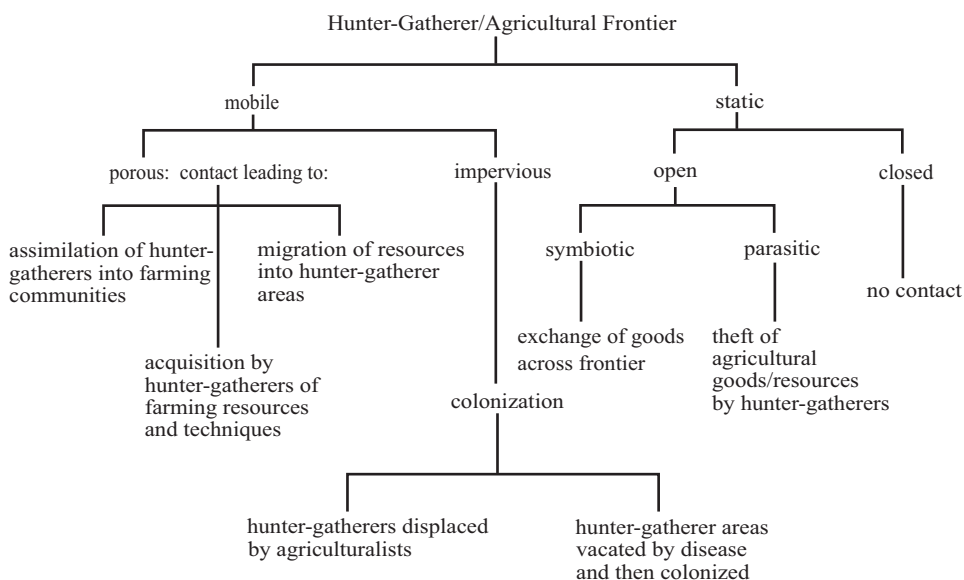


Figure 2 Some examples of the types of frontiers that may have existed in prehistoric temperate Europe between early agriculturalists and hunter-gatherer populations. (Dennell 1985)

from the hunter-gatherers, as it would be into their territory that farmers would have moved and the likelihood that foragers would have been moving over a wider geographical range would have provided them with more opportunities for observation. Particular attractions in such circumstances may have included farmers' tools, such as pottery, and their agricultural products and domesticated animals, while farmers may have wished to gain access to an additional source of labour for use in farming activities.

ARCHAEOLOGICAL EVIDENCE OF INTERACTIONS ALONG THE LOWER CAGAYAN RIVER

How should archaeological finds be used to verify the prehistoric interdependent social relationships that may have prevailed between hunter-gatherer and farmer societies? This is not a simple matter since some categories of evidence may be ambiguous as to who manufactured them. Flaked stone tools, for example, cannot merely be considered evidence for the presence of hunter-gatherers at a particular site since we can imagine that under certain situations farmers might also make them. A pattern of observations is required that draws on the excavation of many sites within a particular region and allows a sequence of change to be inferred. Excavation of a single site is not by itself enough. If we think of the full spectrum of human activities at a given period as a net and of each individual site, or artefact, as a knot within that net, with information and goods being produced and exchanged

through each knot before being consumed and disposed of, then what we are seeking is to analyse the distribution of the overall pattern of knots, and changes in this over time. This we may term settlement archaeology (Ogawa 1996).

Research into the historical process of the interdependent relationship between hunter-gatherer and agricultural societies has been continuing now for over twenty years at the La-lo Shell Middens, distributed along a 50 km stretch of the Lower Cagayan River, Northern Luzon, Philippines. The La-lo Shell Middens are mainly located on river terraces extending along both banks of the Cagayan River, and cave sites and open-air sites in the limestone hills of the adjacent hinterland have also been included in the project (Figure 3). Pottery assemblages excavated from more than twenty shell middens have been analysed into four periods dating to between 4,000 and 1,000 years ago (Ogawa 2004; 2005a; 2007; Figure 4). Additionally, an earlier preceramic period and a later period in which porcelain was acquired through trade have also been recognised, creating an overall six phase classification for this part of Luzon (Figure 5).

Early encounters between hunter-gatherers and farmers are registered by those cultural layers spanning the transition from preceramic to ceramic assemblages, with a key site being the Gaerlan Shell Midden (Ogawa and Ronquillo 2006; Ogawa 2007). This site is located on the river terrace of the east bank of the Cagayan River, 45 km upstream from the river's mouth. Flake tools made of chert, potsherds, and animal bones were excavated from a matrix largely consisting of freshwater bivalve shells, and the site lies at the upper limit of freshwater bivalve habitat. Three layers are distinguishable at depths of >60 cm, 60–40 cm and <20 cm below the surface. Potsherds were only present in the uppermost layer. Flaked stone tools were expediently made from chert or andesite and no formally retouched component is apparent. A few of the earthenware sherds excavated from the site have been coloured using a red slip and these form the oldest pottery found thus far in the Lal-lo area. However, the ceramic sample is too small to permit changes through time to be clearly discerned. The site appears to have first been used by hunter-gatherers whose subsistence patterns (at least at this locality) emphasised the collection of freshwater bivalves from the Cagayan River, a subsistence strategy followed by the first farmers to use the site, who employed pottery. Available radiocarbon dates indicate that the Red-Slipped Ware found at Gaerlan dates to 4100 to 3700 cal. BP (Ogawa 2007; Ogawa and Ronquillo 2006).

The subsequent archaeological phase (3500–3000 cal. BP) is associated with what has been termed the Non-Decorated Red-Slipped Pottery Assemblage (Ogawa 2004, 2005a, 2007; Ogawa and Ronquillo 2006; Figure 6). Sites of this period excavated from the silty clay that forms the Cagayan River's banks do not include shell middens, but it has yet to be established why people chose not to gather shellfish at this time. One possibility is that the riverbed had changed from sand to mud and that the lower river basin had been transformed into a marshy environment. Freshwater bivalves with a preference for living in sandy conditions would thus have disappeared from this stretch of the river. Sites of this period were widely

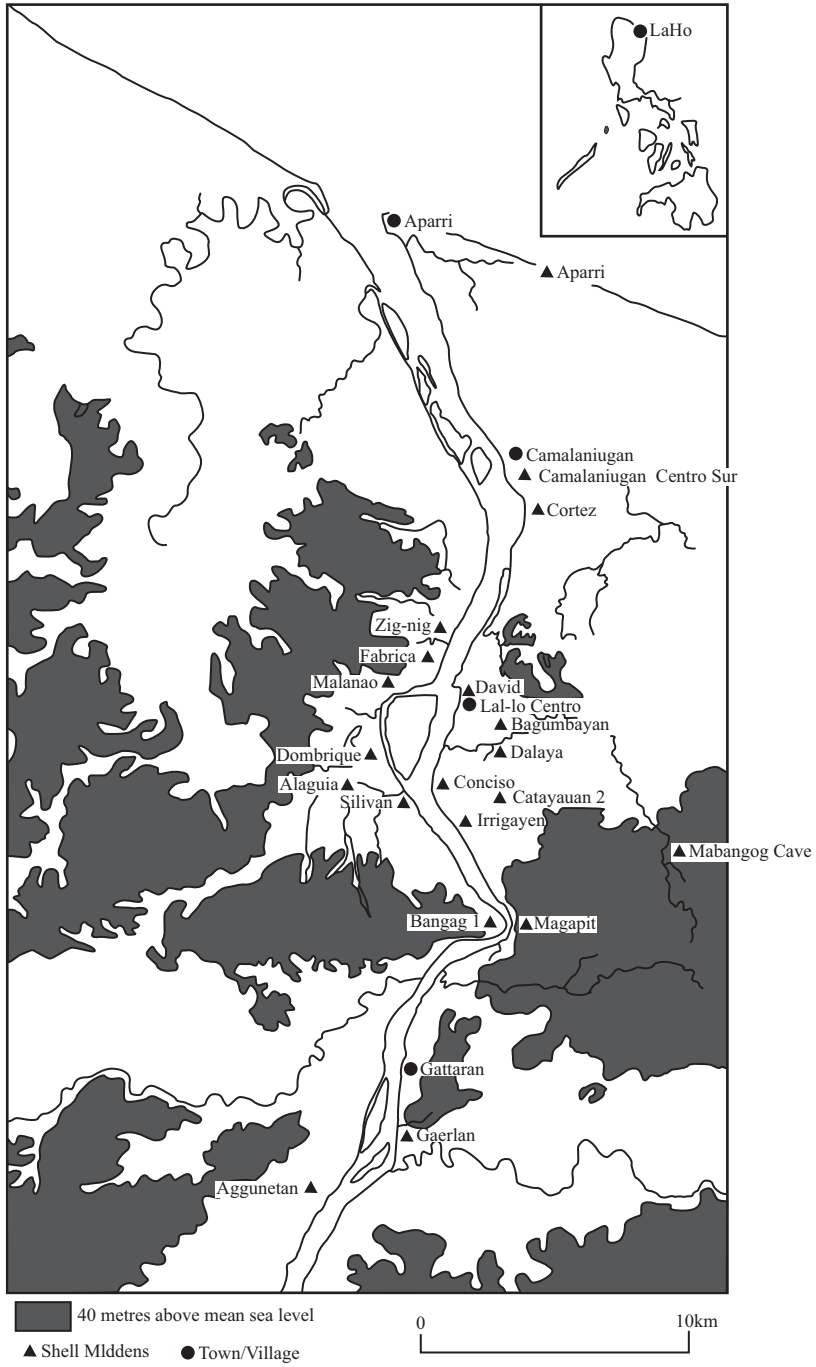


Figure 3 Site location map of Lal-lo shell middens.

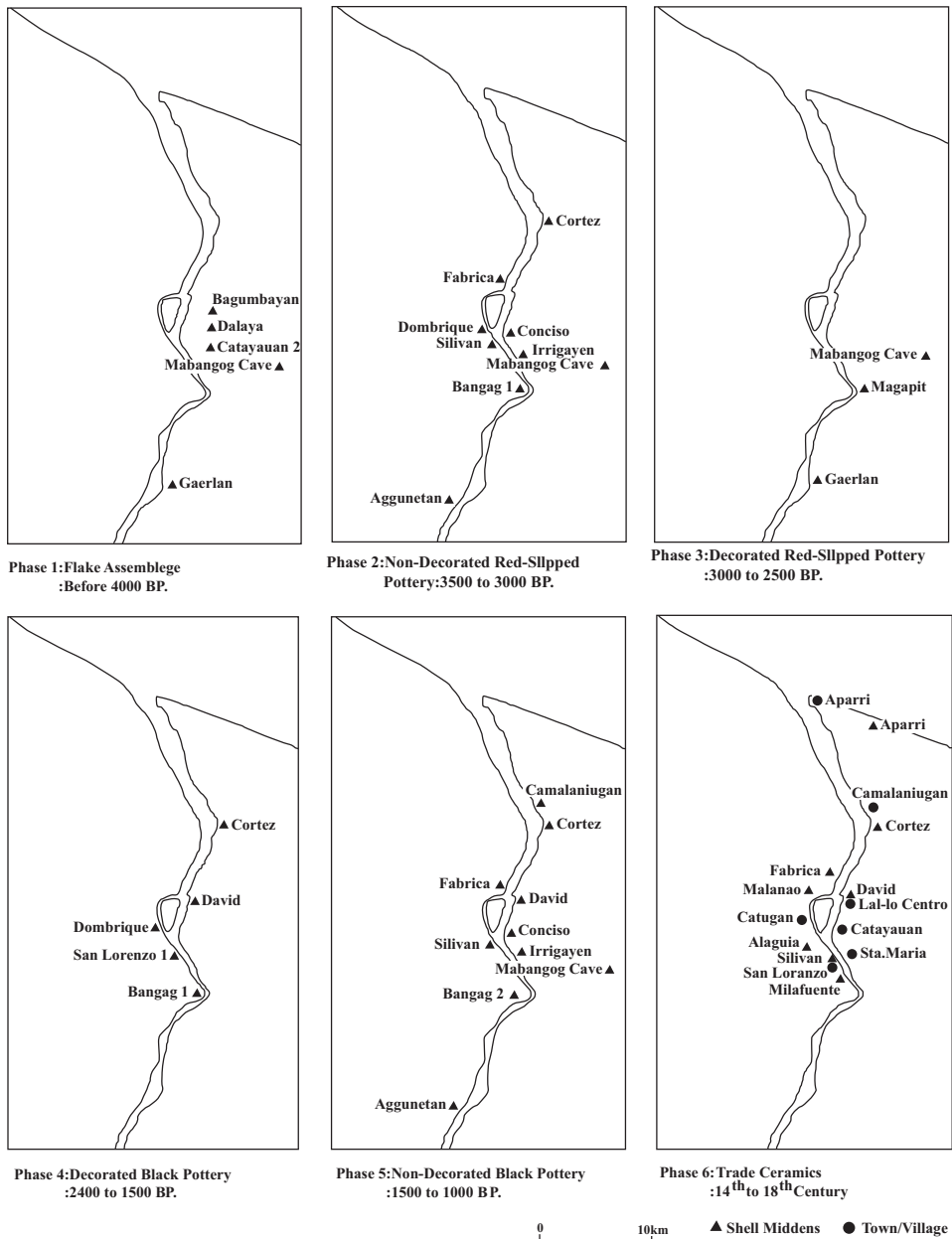


Figure 4 Transformation of settlements in Lal-lo from 4000BP to recent times.

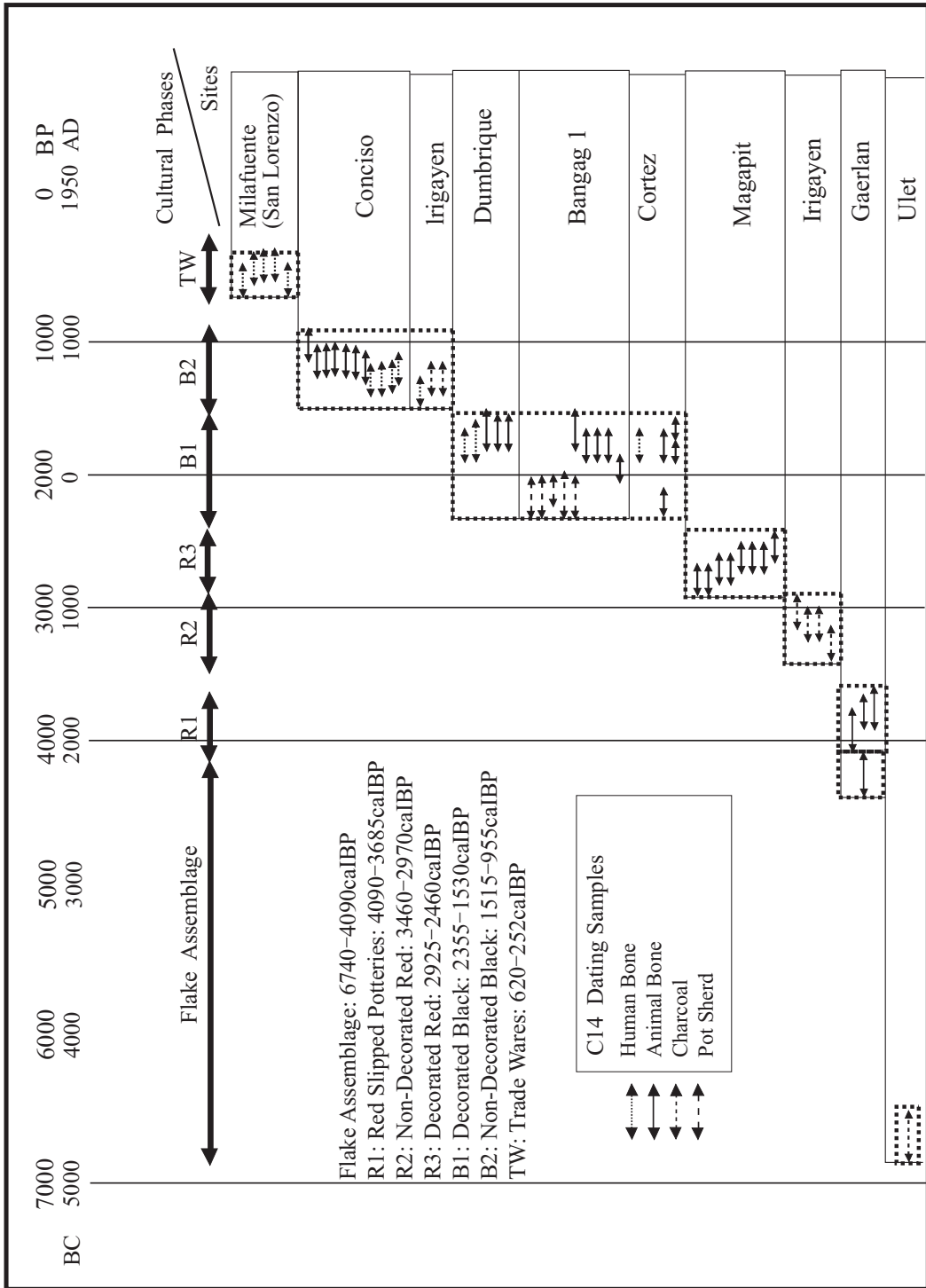


Figure 5 Typological chronology of artefacts and AMS14C dates of Lal-lo shell middens.

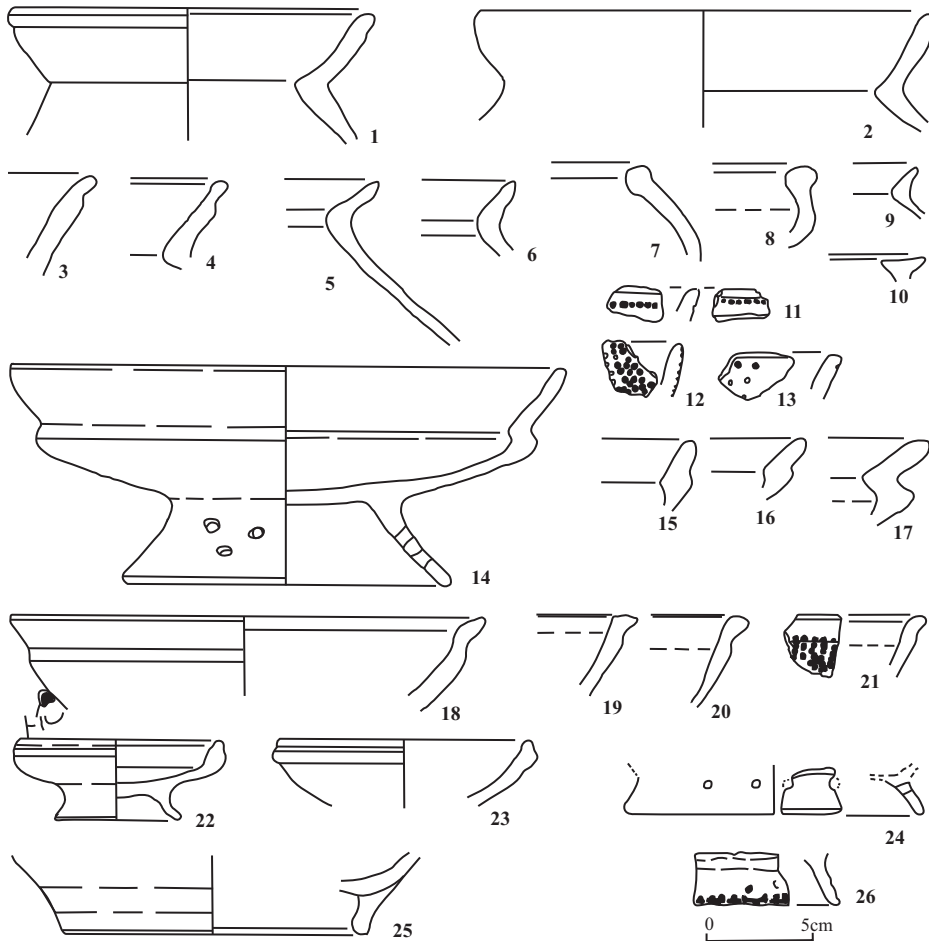


Figure 6 The Non-Decorated Red-Slipped Pottery Assemblage.

distributed around both sides of the Cagayan River. They have produced only a few chert flake tools mixed with many red-slipped, but otherwise undecorated earthenware sherds. The stone tools recovered are all finished products and exclude débitage elements. Along with their rarity, this suggests that these tools were made elsewhere and then brought to these lowland locations in a finished state.

Between 3000 and 2500 cal. BP a third period is identified, associated with Decorated Red-Slipped Pottery assemblages (Ogawa 2004, 2005a, 2007; Ogawa and Ronquillo 2006). The principal site is the Magapit Shell Middens, located on a low hill (50 m above mean sea level) on the riverbank about 40 km upstream from the Cagayan River's mouth. The same freshwater bivalves as found in earlier shell middens formed the shell middens here and excavations produced an abundance of decorated red-slipped earthenware sherds (Figure 7), along with stone adzes and the

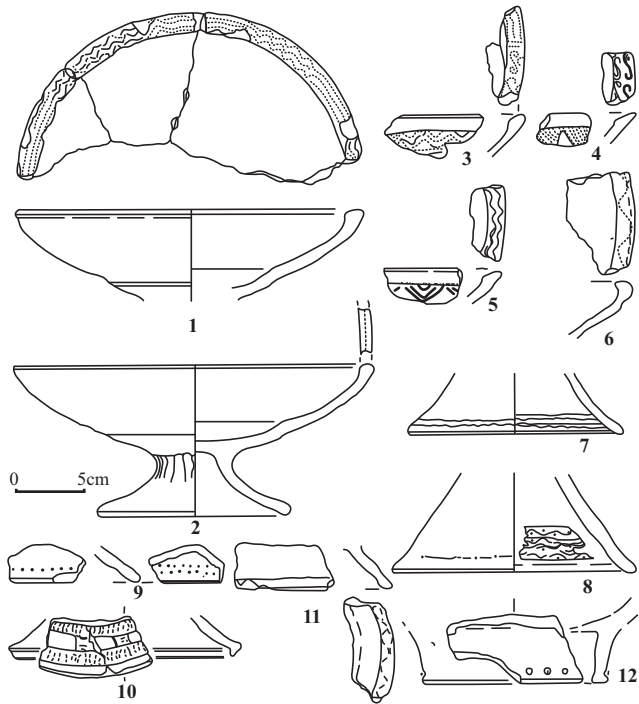
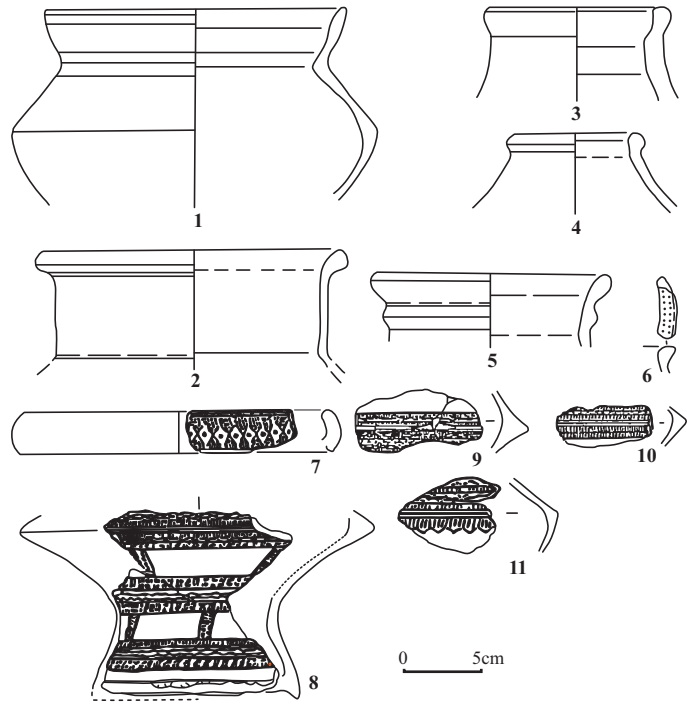


Figure 7 The Decorated Red-Slipped Pottery Assemblage.

bones of deer and wild boar. However, no flake tools were recovered.

Away from the river in the surrounding hills, excavations have been conducted in caves as well as at open-air sites. Chert flake tools and earthenware sherds are known from a shell-rich layer at Mabangog Cave, located on a limestone hill 50 m above mean sea level and 5 km east of the Cagayan River. The same kinds of bivalve species were exploited here as at lower-lying riverine shell middens (Ogawa 1999). Forty chert flake tools and more than 700 potsherds were found, the latter including both undecorated and decorated earthenware sherds belonging to the Red-Slipped and Black Pottery Assemblages mixed together within the same layer. Radiocarbon determinations indicate an age for the Mabangog Cave deposits of between 3500 and 1000 cal. BP (Ogawa and Ronquillo 2006; Ogawa 2007).

If the flake tools found here were created, used and disposed of by hunter-gatherers, then it is possible that this cave site was used by them, in which case the ceramics, and perhaps also the shellfish, may have been acquired through exchange with lowland farmers. However, the thinness and possible disturbance of the cultural layer at Mabangog Cave make it difficult to specify the precise period of such exchanges, though leaving open the possibility that they were maintained between upland (hunter-gatherer) and lowland (farmer) societies over a long period of time.

Five kilometres east of Mabangog Cave and on a second limestone hill, earthenware sherds of the Decorated Red-Slipped Pottery Assemblage were excavated in association with chert flake tools at an open-air site (Ogawa and Ronquillo 2006; Ogawa 2007). Shellfish remains were absent. As the relevant layer was again relatively thin (± 30 cm deep until bedrock), it is not possible to be certain that the pottery and stone tools found here were in genuine association. However, the lack of shellfish suggests that the site's inhabitants may have pursued a different subsistence strategy from that followed by those occupying Mabangog Cave. Moreover, the presence in this hilly area of ceramic assemblages not yet found along the Cagayan River suggests that the hunter-gatherers occupying it may also have had ties with farmers in other areas.

During the last 2,500 years pottery assemblages from the study area are again different, and have been termed Decorated and Non-Decorated Black Pottery Assemblages (2400–1000 cal. BP; Ogawa and Ronquillo 2006; Ogawa 2007; Figures 8, 9). Riverbank shell middens of this period are huge, with one measuring over 2 km in length, 100 m in width and in excess of 2 m deep. The scale of such sites suggests that the amount of shell gathered probably exceeded any one group's daily food requirements, and the surplus could have been dried and processed for exchange over a wide area (Ogawa 2006). As trade developed with overseas merchants from about 1,000 years ago, such local goods would have been in demand in order to obtain imported Chinese, Thai, Vietnamese and Champa porcelains. While production may have been undertaken by both lowland farmers and highland hunter-gatherers, it seems likely that it was the former who largely controlled the trade, which after Spanish arrival in the Lower Cagayan River was gradually integrated into the developing proto-capitalist World System.

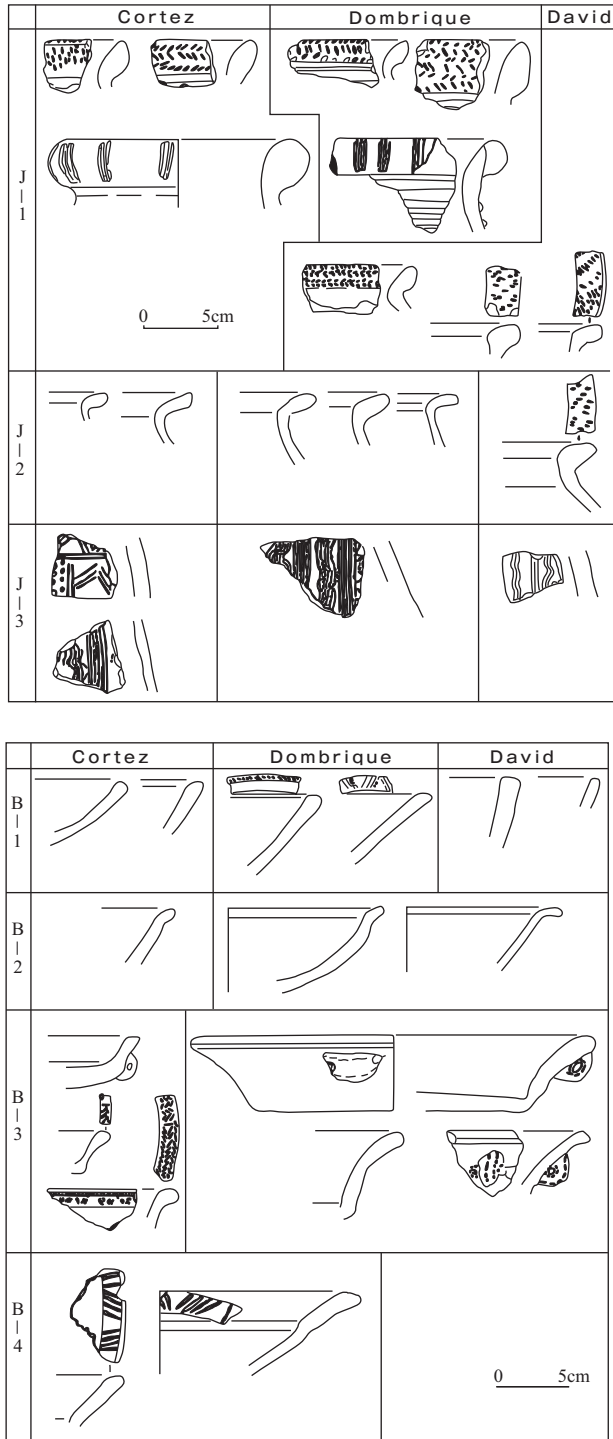


Figure 8 The Decorated Black Pottery Assemblage.

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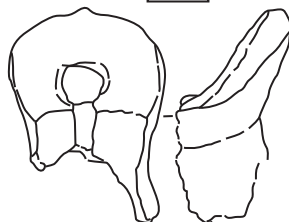
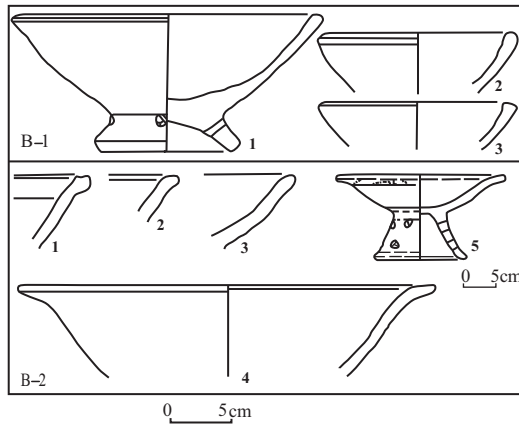


Figure 9 The Non-Decorated-Black Pottery Assemblage.

CONCLUSION

The excavated artefacts and site distributions of the La-lo Shell Middens study area are as yet unable fully to confirm the hypothesis of interdependent relationships between hunter-gatherer and farmer societies. However, the history of their interactions is gradually being revealed. After encountering farmers, hunter-gatherers appear to have shifted their settlement focus from the lowlands into the surrounding hills, accessing the resources of the tropical rain forest. This was probably one means of reducing their mobility costs while simultaneously using farmers as a social resource that could be tapped for desirable goods. The relationship between the two is likely to have been socially regulated through the control of information on resource abundance and subsistence activities, but over the longer term the developing political and social imbalance between hunter-gatherers and farmers saw control of production and exchange increasingly concentrated in the hands of the latter.

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