

On the Study of Bohai Households

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Abstract

This paper analyzes approaches, methods, and techniques for studying households of the early medieval state of Bohai (698–925). A distinction is made between the concepts of “dwelling” and “household,” with the latter considered a fundamental analytical category for paleo-economic and social research in Bohai archaeology. The eco-social approach is identified as the most appropriate framework for reconstructing the phenomena under study.

Keywords: Bohai state (698–926), households, adaptation, dwellings, activity zones

1 Introduction

Households as a component of settlement archaeology remain insufficiently studied in Russian scholarship [30, 31], yet they are of considerable interest for paleo-economic and social research. This lack of attention may be explained by the frequent conflation of the concepts of “dwelling” and “household.” It is therefore important to distinguish between them in order to clarify their different meanings. A dwelling is an archaeological object, whereas a household is an analytical category.

As the smallest unit of cultural adaptation of society to the environment, a household is characterized by collective productive activity in the process of resource exploitation. Accordingly, a household may include one or several dwellings, as well as economic structures and the surrounding space. Most often, household members are related by kinship.

The aim of this study is to develop approaches, methods, and methodologies for the study of households in the Bohai state (698–926), based on materials from Bohai archaeological sites in the Russian Primorye region. The Bohai state covered southeastern Manchuria (PRC), northern parts of the Korean Peninsula (DPRK), and the southwestern part of Primorsky Krai (RF) [14, 15].

Systematic excavations in Russia have been carried out at Bohai fortified settlements (Fig. 1) such as Kraskino, Gorbatka, Nikolaevskoe I–II, Koksharovskoe, etc., as well as at settlements including Abrikosovskoe, Konstantinovskoe-1, Chernyatino-2, Korsakovskoe-1, forming a substantial source base [1, 9, 14, 15]. In total, about 70 dwellings have been excavated.

On the territory of China, about 70 Bohai settlements are known, of which only a small number have been archaeologically investigated [32]. More than 50 dwellings have been excavated there, and similar structures are also found in Primorye [33].

The most suitable paradigm for reconstructing households is the processual approach in archaeology, which interprets archaeological culture as an adaptation to changing environmental conditions. Since households emerge as a form of adaptation to both natural and anthropogenic environments, an eco-social approach is particularly promising [16]. Applied to Bohai households, it implies the study of the environment with which Bohai people interacted; material culture formed through adaptation; and the social and political structures required to sustain these communities. These changes are identified through interdisciplinary methods, including natural sciences.

2 Formation and current state of household archaeology

In Soviet archaeology, the concept of “household” was not used. However, archaeologists applied a wide range of methods that allowed them to obtain data beyond dwellings. These included functional spatial analysis, demographic parameters, and social structure studies. Since it is impossible to cover all literature, only representative works are discussed.

In the work of K.A. Raevsky on the Kiselovo settlement, an economic complex consisting of several dwellings, workshops, and livestock enclosures is analyzed. Due to high-quality excavations, he identified household boundaries and storage areas. Based on pottery fragments with ownership marks, the author suggested that each house belonged to a separate family [27].

A significant milestone in the development of dwelling studies was the work of V.M. Masson, whose most active research was in the 1960s–1970s. His excavations of the Neolithic Jeitun settlement in present-day Turkmenistan are particularly significant. Three building horizons were uncovered, with clear spatial organization of living and economic zones. One of his main contributions was a holistic approach to Neolithic economy. Dwelling becomes the starting point for reconstructing subsistence systems. Based on wall volume, he estimated labor costs of construction. Based on dwelling size and settlement layout, he inferred family size (primarily nuclear families) and social organization [23].

In Far Eastern archaeology, systematic studies of Iron Age dwellings of the Kroynovo culture within an eco-social framework were conducted by Yu.E. Vostretsov [7]. He treated dwellings as both a means and result of adaptation to the environment, emphasizing environmental conditions. He analyzed demographic aspects based on dwelling size, hearth numbers, pottery distribution, ethnographic analogies, and physical modeling of domestic processes, reconstructing population density and settlement systems.

In British and American archaeology, household studies began within settlement archaeology in the 1960s–1970s [19]. Researchers focused on settlement location, resource availability, settlement patterns, spatial organization, and technology.

Later, settlement archaeology split into macro- and micro-structural approaches. The macro approach studies settlement distribution in relation to environmental factors, while the micro approach treats settlements as social systems. The household is one such system.

In 1982, the article “Household Archaeology” by Richard R. Wilk and William L. Rathje

established household archaeology as a field [42]. They defined households as the basic unit of subsistence, consisting of social, material, and behavioral components. They also proposed ethnographic analogy as a key method and identified household functions such as production, distribution, reproduction, and transmission of property.

Modern household archaeology is actively developing, especially in American and British scholarship, with frequent focus on Mediterranean and Mesoamerican data. Researchers both apply and critique the 1982 framework. Methodologically, there is a shift from processual explanations toward more inductive approaches. Researchers increasingly avoid viewing households solely as environmental adaptations, since similar environments may produce diverse household structures [41].

3 Sources and methods for studying households

Household reconstruction requires careful evaluation of archaeological sources. Excavation methods such as “spit digging” and insufficient documentation reduce data quality, limiting interpretation of household boundaries, artifact distributions, and abandonment processes.

Most reliable data come from sites such as Gorbatka, Kraskino, and Abrikosovskoe, where multiple construction horizons have been identified [13, 14]. Household analysis requires attention not only to dwellings but also to inter-household spaces, which may reflect economic activity.

Soil sampling and flotation are crucial for recovering micro-remains such as ceramics, tools, seeds, and bones [29, 40]. Palynological analysis helps reconstruct ancient vegetation [22].

House floors are interpreted as formation processes reflecting accumulated activity traces, including discarded materials and occupation debris [38]. Spatial clustering of artifacts helps reconstruct activity zones.

4 Main aspects of Bohai household reconstruction

Reconstruction of households must consider environmental conditions. Three main factors can be identified:

1. Landscape structure shaping resource availability
2. Technologies for resource extraction and processing
3. Social structures sustaining these technologies

These factors are interdependent.

Landscape structure includes climate, relief, and soils. Climate is especially important. Paleoenvironmental studies suggest warmer conditions during the Bohai period, with increased pollen of broadleaf trees [18]. Some estimates suggest temperatures were about 2°C higher than today [24].

Agriculture was the main subsistence base. Livestock, hunting, and gathering were secondary. Bohai people used river floodplains for cultivation [4]. Evidence from Nikolaevskoe I indicates ridge-field agriculture, similar to early 20th-century Manchurian farming [34].

Some households specialized in crafts. Gorbatka site includes a craft district with metallurgy, bone, wood, stone, and ceramics production [11].

Two main dwelling types are known: semi-subterranean houses and above-ground houses [10]. Both are frame-post structures. Later periods show dominance of above-ground houses with kan heating systems [15, 33].

Spatial analysis methods from Paleolithic archaeology are used to identify activity zones [26]. Similar studies in North America show functional and social division of space within houses [37].

Household production included bone tools and pottery. Stylistic similarities between neighboring houses suggest intra-community exchange [12].

Exchange operated at multiple levels: intra-settlement, regional, and international. Evidence includes ceramics (san cai glaze), shellfish transported inland, and marine fish remains [3, 14].

5 Demographic reconstruction and household size

Household size can be estimated using dwelling area, storage volume, or heating system (kan). Estimates suggest around 7 individuals per dwelling in some cases.

Comparative data from Tang dynasty suggest average household size of 5.5 persons [39]. Early 20th-century Manchurian households ranged from 14.6 to 16.4 persons [34]. These differences reflect methodological variation.

Thus, a household may not correspond strictly to a single dwelling.

6 Economic zone and demographic capacity

The household activity zone is the area within which resources are collected, typically 5–10 km. However, ethnographic data suggest agricultural fields are usually within 2–3 km [17].

Demographic capacity depends on arable land, terrain, and agricultural productivity. Ethnographic analogies from Manchuria show yields of about 1248 kg per hectare [34].

Minimum grain consumption is about 300 kg per person per year [20]. Using these values, population support capacity can be estimated, though hunting and gathering must also be considered.

7 Conclusion

The eco-social approach is the most appropriate framework for reconstructing Bohai households. It integrates environmental conditions, technological systems, and social

organization.

Although older excavation data are limited, combined archaeological, environmental, and ethnographic evidence allows partial reconstruction of household structure and adaptation strategies.

While household archaeology remains underdeveloped in Russian scholarship, related studies provide important methodological foundations.

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