

Jōmon Sea: Navigation in the Origins of Japan

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ABSTRACT

Japanese neolithic, the so called Jōmon Period, represents a vast terrain in which to develop new and exciting research in the archaeological field. This is because there are still many questions that need to be answered to better clarify the evolutionary dynamics of the cultures that characterized it. The project *Jōmon Sea: Navigation in the Origins of Japan* aims to study and understand the use of the sea and waterways during the Japanese Neolithic period, both in terms of movements within the archipelago and contacts with the surrounding territories. In its first phase, the project will focus on the analysis of the nature and dynamics behind the first relations with the Korean peninsula. For this reason, International Research Institute for Archaeology and Ethnology (IRIAE) has developed a new project of maritime archaeological investigation on land and underwater. The project identifies the island of Tsushima (Nagasaki Prefecture) as a crucial point. The activities will begin at the sites of Meotoishimae and Ongaura, both overlook the Korean coast and have geomorphological characteristics of possible landings and/or coastal settlements. Among these, those most under analysis are related to the origins of the Jōmon culture, a topic that cannot be separated from human environment interaction: the relationship with the Korean populations and that with the sea. What was the role of the sea in the life of the Jōmon People? How did they move and what boats did they use? What were kaizuka really and what did they mean? How did they adapt to the environmental changes at the advent of the Holocene?

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INTRODUCTION

The topic of this abstract fits best into the session 'History and Current Trends of Underwater Archaeology around East Asia' because it aims to address the study of the relationships between Jōmon communities and the sea, its use and exploitation of resources, and the role it played in the relations between them and continental populations, not neglecting the importance of other waterways in internal movements and communications. All this through a new methodological proposal based on the simultaneous investigation of land and underwater sites with the aid of innovative technologies and computer systems. Our methodology is the study of coastal sites in relation to the adjacent seabed, in GIS, to bring together archaeological data from the various sites under investigation. This will open up new research perspectives in the complex field of movement and settlement choice during the Japanese Neolithic.

As there are clear cultural differences in the archipelago during the Jōmon Period (14,000 BC and 9,500 BC and end around 1000 BC), we prefer to identify this period as the 'Japanese Neolithic' and use the term jōmon to indicate the cultural faces that characterised it. The identification and 'development' of cultural faces is based on changes in the relationship between man and his environment and how he adapted to it. In the circular flowchart (Figure 1) the environment inevitably influences the lifestyle of human groups, which produces a 'material culture' that, in turn, favours and enables the adaptation necessary to survive climatic and environmental changes (Renfrew et al. 1991).

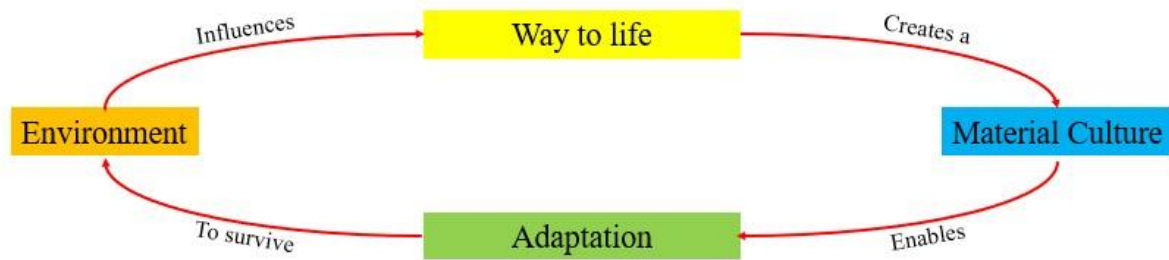


Figure 1: Flowchart of the Adaptation Cycle

The advent of the Holocene brought about great changes that conditioned and forced human groups in the area to modify their 'habits' (Barnes 2015).

Climatic change characterised the Holocene. On the one hand, on land evergreens and deciduous broadleaf trees produced acorns and hard fruits (Teshigawa 2022; Williams et al. 1982) and the ecological process of insularisation led to an increase in the populations of smaller mammals such as wild boar and deer. This followed the extinction of larger animals that could not migrate to places with more suitable temperatures. All this allowed for a constant seasonal food supply for gathering and hunting (Habu 2022). On the other hand, in the water the sea level rise separated Japan from the continent. This led to the development of navigation, both for marine and terrestrial travel. On land the presence of the great mountains over the entire surface of the archipelago make overland travel extremely complex.

Rivers represented the main inland communication routes, while lakes were an important source of supply for inland areas further from the coasts (Hornell 1946). Over the sea people performed cabotage and inter-island boating.

Moreover, water products, such as molluscs, fish, and marine mammals, represented a new source of food supply that not only contributed to the general needs of the populations, but also compensated for seasonal food fluctuations (Habu et al. 2011; Koike 1980; Teshigawara 2021; Teshigawara 2022).

Excavations conducted in various areas of Japan, related to the various phases of the Jōmon Period, have brought to light bones of large marine mammals and large fish, such as whales and tuna. Such animals require complex organisation, strategy, and technology of evolved societies (Hosoya et al. 2014).

The waterways became the main communication routes for the 'flow of goods, people and information' (Mizoguchi 2013) not only within the archipelago itself, but also from outside.

Japan, in fact, with the advent of the Holocene, became a territory with a temperate climate, rich in vegetation and raw materials and particularly suited to both fishing and hunting (Teshigawara 2016). This 'oasis' was a destination for migratory flows of foreign cultures that greatly influenced the development of local communities (Mizoguchi 2002). Namely, from the north populations of Siberia and the American territories; from the south-west populations of Korea; and from the south populations of the Southeast Asian Archipelago (Nakagome et al. 2020).

The reconsideration of all these elements led to the project 'Jōmon Sea: Navigation in the Origins of Japan' by the International Research Institute for Archaeology and Ethnology (IRIAE). The project is divided into three phases. Jōmon Sea 1 will focus on understanding the nature of early relations with Korea and how these influenced the evolution of Jōmon cultures. Jōmon Sea 2 will deal with relations with northern cultures. Jōmon Sea 3 will address the study of internal contacts within the country.

The first phase will focus on relations with the Korean peninsula to investigate the island of Tsushima (Nagasaki Prefecture). The island is located in the centre of the Sea of Japan, on the route between Kyūshū and Korea, from whose coastline it is only 47 km away. It is likely that this island was intercepted by explorers from the peninsula in search of richer territories. Tsushima represents a veritable 'treasure chest' for archaeological research because since ancient times it has been the crossroads of all cultural dynamics between Japan and the surrounding cultures; just as Sicily, Italy is at the centre of the Mediterranean. Numerous investigations were conducted on the island in recent decades by Japanese scholars, which confirmed the strong Korean presence and exchanges with northern Kyūshū, but also the mutual influence between Korean and local populations (Shōbayashi 1995). The project is carried out in collaboration with Tokyo University of Marine Science and Technology and the Asian Research Institute of Underwater Archaeology (ARIUA), which has been carrying out archaeological investigations on Tsushima Island for years.

CASE STUDIES

After analysing the reports of all the excavations and investigations conducted on the island, we chose to start with the north-western area, which faces Korea. Two extremely interesting sites can be found in this area (Figure 2). These are the Waniura Bay, located in the far north, and the Shishimi Bay area, slightly further south (Nagasaki 2019), which represent the case studies examined.



Figure 2: Waniura Bay and Shishimi Bay

The Ongasaki / Ongaura Site

This is the first of the inlets, coming from the south, in Waniura Bay and facing the Korean coast. It is part of the Yabitsu area, which is being investigated by ARIUA; where the first, and so far, only, Jōmon landing site has been identified, as well as numerous Korean Neolithic evidence (Hayashida 2019).

The investigations focused on the Ongasaki promontory that closes the inlet to the north (around 20 metres above sea level) and in the stretch of sea that bathes Ongaura (Figure 3).



Figure 3: Ongasaki / Ongaura Site

The surface survey of Ongasaki revealed the presence of three obsidian points and significant quantities of obsidian, quartz crystals and shell waste. Considering the particular purity of the obsidian found, the absence of quarrying pits on Tsushima Island and the morphological characteristics of the tips found, we assume that it came from the Koshidake quarry in northern Kyūshū. The shape and quality of these finds is absolutely superimposable to those found along the southern coast of Korea and, mainly, in the Busan area. The route of obsidian is likely: raw obsidian arrives on the island from northern Kyūshū reaching Ongasaki for processing, from there, the finished products are sent to the Korean coast. In addition, the presence of hundreds of quartz crystals, shell waste and numerous traces of charcoal make Ongasaki an important processing and sorting site for obsidian products and other valuable materials. We also found archaeological evidence related to later periods, such as fragments of iron swords (dated to the Late Yayoi and the Kofun Period), bronze-finished weapons and armour, a bronze coin from the Edo Period and some fragments of medieval pottery (including celadon) that testify to the long life of the Ongasaki site and the strategic importance of its location.

The underwater survey carried out on the seabed of Ongaura Bay revealed the presence of fragments of amphorae, still to be chronologically framed, and three lithic anchors whose typology can be ascribed between the Jōmon and medieval periods.

The 'Meotoishimae' Site

The geomorphology of Meotoishimae and the documented importance of the bay were the elements that prompted us to investigate this inlet. This site is located opposite the important site of Meotoishi in Shishimi Bay (Figure 4), which has always been known to Koreans and mentioned in the text *Haedong Jegukgi* (Adachi 1999). It was excavated between the end of the 1970s and 1993 and brought to light a very large number of Neolithic Korean pottery of the Sugari type and only a few fragments of Ataka-style pottery dated to the Middle Jōmon (Kiyoura 1992).



Figure 4: 'Meotoishimae' Site

Our investigations on the Meotoishimae site revealed an interesting similarity with the structures in Koshitaka, which is located on the same side of the island only three kilometers to the north and currently being investigated by the Tsushima Museum team. If this structure similarity is confirmed by subsequent investigations, one could hypothesise their repeated pattern during the Neolithic period, as well as location choice of the island's bays overlooking the stretch of sea facing Korea. The archaeological excavations at the Koshitaka site uncovered 2461 fragments of Neolithic Korean pottery and only seven fragments of Maebira-style Jōmon pottery (Shōbayashi 1995), as well as a Korean-style kiln. This discrepancy between the amount of Korean and indigenous evidence leaves little doubt these were Korean settlements.

We hypothesize groups from Korea sailed in search of richer territories and then settled in Tsushima. Over time, they influenced and merged with the small local populations, and, from this fusion developed a hybrid culture. During the Early/Middle Jōmon this hybrid culture looked further east, towards the Kyūshū coast, which they reached by cultural exchanges.

RESOURCES

The resources that will be deployed to implement the project will come, in addition to the specific skills and expertise present in IRIAE, from the collaboration with Tokyo University of Marine Science and Technology. They supply the technological approach to underwater investigations, and the ARIUA. Moreover, the project already enjoys the patronage of UNESCO Underwater Heritage and the financial support of the Italian Ministry of Foreign Affairs and International Cooperation.

FRAMEWORK

The project aims to answer a series of interconnected questions. These questions are based on the use and exploitation of the sea, waterways and coastal settlements in bays. First, in Jōmon Sea the aim is to understand the structure and location-choice of coastal settlements in bays. We aim to contextualize this with the seasonal cycle of food supply and storage methods. Second, we aim to collect data on the

types and level of nautical knowledge of the Neolithic communities that exploited the bays, along with their transportation of raw materials, related trade and cultural exchange.

The methodological approach is simultaneous archaeological investigation and comparison of data from land and underwater. Further, we will use both sonar equipment for scanning the seabed and high-resolution satellite reading software. The latter will be used to obtain a clearer visualisation of the geomorphology of the areas and the identification of anthropic evidence that might otherwise be difficult to identify.

Of extreme importance, moreover, is the creation of a GIS platform that collects data from the sites we have investigated and from those investigated by other research groups. The GIS facilitates site comparison to obtain a more complete reading of the historical dynamics that characterised the area starting from the Neolithic period. The GIS platform georeferences elements necessary for the management and analysis of the survey results (reconnaissance, excavation, protection, etc.). The GIS can be used for the planning and design of subsequent excavation work. Within GIS, we plan to carry out distributional-typological analyses of finds and fragments characterised with different symbology on the basis of the type of material (stone, metal, wood, etc.) and the type of artefact (e.g., scrap, arrowhead, blade, etc.). In this way it is possible to visualise and interpret the dynamics of distribution, concentration, isolation and thinning of specific typological groups and compare them simultaneously.

RESULTS

The results obtained during the spring 2023 survey campaign were the identification that the Ongasaki site is a processing and sorting site for valuable materials, and what routes these raw materials took to reach Ongasaki and from there to Korea. The existence of the Ongasaki processing site suggests a settlement or logistical support site in its vicinity. Therefore, future investigations and excavations will aim to find and understand site organisation.

Another important outcome the research team is aiming for is the identification of repeated patterns in bay structure and their location, so that these may serve as a proto-type for future identifications of other anthropized bays. Finally, it is our intention that the GIS platform created can be constantly implemented with data from other research in order to achieve a comparison of data that facilitates a broad and syncretic reading of the periods under analysis. The GIS would become a baseline tool available to the scientific community and all researchers.

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