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## **Domestic life by the ocean: Beg-er-Vil, ca 6200-6000 BC**

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### **Abstract**

The settlement of Beg-er-Vil at Quiberon (Brittany, France) provides remarkable evidence of the lifestyles of the last maritime hunter-gatherers along the Atlantic coast, during the 6200 BC climatic event. The site of Beg-er-Vil was first excavated by O. Kayser during the 1980s, and has undergone extensive excavation since 2012. It revealed a wide variety of domestic structures in two distinct areas; a shell midden and its margins. The sedimentary matrix is made up of sands, aggregates of burnt earth, ash and charcoal resulting from hearth activities, fish bones, shells burnt to varying degrees, numerous granitic blocks destroyed by fire, as well as abundant technical remains (lithics and bones). The pits, fireplaces and a level of burnt blocks attest to intense domestic activities. A series of post holes fit into a curvilinear wall near the shell deposits (a circular hut?). The diversity of marine and continental faunal remains points to a broad spectrum economy. The period for hunting prey or collecting fruit could indicate long-term occupations throughout the year. The lithic industry (Teviecian) is on flint pebbles of very poor quality, procured outside the habitat. The whole reduction process is recorded on site. The excavation of Beg-er-Vil reveals the complexity of a coastal dwelling, including numerous functional changes in the living spaces.

### **Key-Words**

Brittany, Dwelling, Late Mesolithic, Shell midden, Structure

## **The Mesolithic in Southern Brittany: a maritime apotheosis...**

The archaeology of maritime hunter-gatherers is part of the prehistory of France, but for geographical and environmental reasons, it remains a relatively novel subject. This stems from the fact that evidence of these Mesolithic groups is only visible along a 300 km long coastal segment in southern Brittany (Western France) (figure 1). Our observation window begins at the end of the rise in sea level and continues until the arrival of farming communities (ca 7000 - 5000 BC). Recent work in this region has shown the original way of life of these groups compared to their continental neighbours (Dupont et al. 2009; Marchand 2014). The Tévéc and Hoedic cemeteries and dwellings excavated in the 1930s are the most iconic of these prehistoric populations (Péquart et al. 1937; Péquart and Péquart 1954). The 37 skeletons exhumed there generated abundant research on the social complexity of these societies, as well as on the anthropological characteristics of these people and their dietary practices. The 1930s excavations largely overlooked the domestic structures and mostly concentrated on the in-depth excavation of the graves, which were plastered for further study in the laboratory. These burials were therefore cut off from their sedimentary context, and it is now difficult to understand their association with the habitat itself. Therefore, one of the specific purposes of all the new excavations was to correct this methodological bias in order to gain a better understanding of the domestic way of life and the mobility system. Beg-er-Vil is one of the major middens in Brittany and was first excavated by O. Kayser during the 1980s (Kayser and Bernier 1988). The excavation began in 2012 in order to anticipate the destruction of the site by marine erosion. Our new excavation methods, the recording of remains and sedimentary or chemical analyses now enable us to shed light on some of the economic aspects of the site overlooked by previous work.

### **Archaeological context**

The Mesolithic site of Beg-er-Vil is located on a low rocky shore, south of the Quiberon Peninsula in the Morbihan (figure 2). It is known to cover an area of about 250 m<sup>2</sup>, but may extend under the dunes, the roads and the present-day houses. A study of the available aerial photographs from 1932 to the present reveals the erosive dynamics in progress on this part of the headland, with a backward drop of 6.4 m +/- 0.86 m on the north side of the archaeological site. We cannot estimate the initial extent of the dwelling, but marine erosion may have been very extensive in this mainly southwest facing bay (main axis of regional storms). The original site may thus have been far greater and we have only explored an area of 100 m<sup>2</sup> on the edge of the midden.

A unique and well-preserved 30-50 cm thick archaeological layer appears at the top of the Pleistocene deposits (Morbihan), under a sand cover. The sedimentary matrix is made up of sands, aggregates of burnt earth, ash and charcoal resulting from hearth activities, fish bones, shells burnt to varying degrees, numerous granitic blocks destroyed by fire and of course abundant technical remains (lithics and bones). Fine sieving and systematic excavation help to quantify the different mollusc species. Mussels, which are rarely cited as a major resource for coastal Mesolithic populations, are well represented here, as well as other species (limpets, oysters, clams, cockles, winkles). Shells are sometimes found in "pockets", and attest to gathering shells from specific beds. The degradation of the shells is clearly more marked on the domestic floors than in the pits. In this apparently homogeneous layer, we identified at least six different levels related to the different functions of these areas (described from bottom to top): a level of ash and micro-charcoal (evidence from quite distant occupations), a level of shells and other small waste, a level marked by massive structures (hearths, pits, post-holes), a level of burnt stones and oysters, another shell refuse level and a more sandy level at the top of the occupation sequence.

A date obtained on shell first indicated an occupation at the turn of the fifth and sixth millennia BC (Kayser, 1992) (Table 1). Beg-er-Vil thus seemed to date to the end of the Mesolithic period in Brittany, with a chronological range contemporaneous with the early Neolithic (Marchand 1999). Following bone sorting by A. Tresset, R. Schulting then obtained a date on a boar bone (oxa-10962 modified oxa-16563), which, this time, indicated a much earlier period, between 6500 and 6100 BC. The rate of C13 / C12 (-16.5 ‰ instead of -20.0 ‰ for an animal living in a slightly closed environment) suggests that the wild pig was a regular consumer of seafood, probably seaweed from the beach, which affects dating due to the strong reservoir effect. New radiocarbon dates have been obtained on samples from previous and ongoing excavations on short-life samples (a deer bone, burnt twigs or fruit). These ages are coherent and point to a median chronological hypothesis for the occupation of the site ranging between 6200 and 6000 BC. A small plateau affects the calibration curve at around 7300 BP (uncalibrated), which results in somewhat older dates. However, the calibration of the ages around 7200 BP is excellent and encompasses the upper shell level remarkably well. This chronological position now confirms that Beg-er-Vil is the oldest shell level in Brittany. The occupation of this site occurred during a major Holocene climatic deterioration, known as the "Finse Event". The estimation of the chronological position of this event varies but is always attributed to the last two centuries of the millennium (Thomas et al., 2007; Kobashi et al., 2007).

Stratigraphic Unit	Lab Code	BP	Δ13C	Material	Excavation date	Calibration (2 sigma)
"Shell Midden"	Gif-7180	6020 ± 80	Unknown	Shell	1987	4966-4482
AG.20.107	OxA-16563	7568 ± 41	-16.5	Bone (Ulna / Sus scrofa)	1987	6490-6372
Level 3B – Sublevel 6 – AG 23-164	OxA-25916	7193 ± 36	-21,61	Capreolus capreolus (humerus)	1987	6204-5992
Level 3B - Sublevel 6 - Carré AH21	Beta-253153	7210 ± 50	-27,2	Pomoïdés (fruit)	1987	6211-6004
Level 3A – Sublevel 2 - AH20	Beta-274301	7220 ± 50	-27,1	Pomoïdés (fruit)	1987	6212-6010
Level 3B – Sublevel 9 – AG 20-197	OxA-25915	7332 ± 35	-22,08	Capreolus capreolus (phalanx)	1987	6326-6076
Level 3B – Sublevels 8-9 – Square AF20 - Pit 1	Beta-259108	7340 ± 40	-25,1	Maloideae (twig)	1987	6350 - 6074
Level 3B- Sublevel 6 – Square AH21 – cadran B	Beta-253154	7300 ± 50	-24,9	Maloideae (twig)	1987	6250 - 6050
US 42 BC37 A (Structure E / flotation)	Beta - 421804	7280 +/- 30	-26.0	Maloideae (twig)	2014	6225-6065
US 5.3 BG36 C - n°991	Beta - 421805	7320 +/- 30	-23.8	Oak	2014	6235-6085
US 32-BD36 C (Structure D)	Beta - 421803	7350 +/- 30	-25.0	Maloideae (twig)	2014	6250-6105

*Table 1. Radiocarbon dates from the Mesolithic site of Beg-er-Vil at Quiberon. The first date is from non-positioned samples. The second is affected by a marine reservoir effect. The others are remarkably consistent and make this site the best reference for the West of France.*

### **Diversity of the archaeological structures**

The early occupations correspond to significant spatial planning, including a large hearth with stone slabs with a diameter of two metres (structure D), two 30 cm deep pits with a diameter of one metre (structures 85-1 and E) and several minor pits (figure 3). Shells now fill the pits but these are probably related to secondary use and it is still difficult to grasp their first vocation. Pit 85-1, excavated in 1985 by O. Kayser, contained very specific archaeological material: burnt bone splinters, a large pebble shale, backed knives, three arrowheads, a decorated dagger and two bone tool fragments, a seashell engraved with incisions and three deer antlers with the extremities

removed . We cannot exclude a ritual use for this assemblage: although traditionally archaeologists tend to resort to this explanation when they do not understand a feature!

Structure E excavated by our team in 2014 was about 30 centimetres deep with a diameter of almost two meters (figure 4). It was roughly circular with a bowl shape. During the first stage of prehistoric use, a fire burned in the bottom of the pit and a slab was tilted in the still hot embers. The pit was then used as a dumping place, mainly for shells. The sequence of operation in this pit is difficult to interpret, and in particular the presence of this large stone thrown on one side. What function can be assigned to these structures? Storage followed by re-use for refuse, as proposed by O. Kayser is obviously an option. But what has been preserved in these small volumes? Traces of plants, shell, nuts or seeds are totally absent.

A dense bed of highly fire-altered granite fragments was found lying on top of the structures in the middle of the archaeological layer, covering the entire surface of the site. It is interpreted as occurrences of cleaning combustion structures. Abundant oysters are also present on this level or between the stones: they are not as burnt as the granite blocks and we have to suppose that they correspond to a secondary deposit.

A few metres from the edge of the shell layer, a series of small post-holes with a diameter of 5-10 cm bordered by vertical pebbles draws a curved wall of about 4 metres long, which was partially excavated in 2015 (figure 3, northeast of the recent excavation). These posts face the Atlantic Ocean winds and could not have withstood them in isolation. They must have been part of a structure giving them more stability, perhaps the wall of light construction? If the structure was circular, it would have measured between 4 and 5 m in diameter.

The plan of the currently excavated area points to the presence of a residential area associated with a dump area (the shell layer), with many large domestic structures (pits and hearths). Lithic artefacts abound everywhere but their density is highest in the shell level. This observation evokes the spatial organization in other shell middens throughout the world, where the houses or tents were located just behind the shell deposits.

### **From food consumption to mobility system**

The combination of archaeozoological and archaeobotanical data found in Beg-er-Vil in Kayser's excavation as well as in ours, demonstrates the diversity of the exploited environments. The site inhabitants exploited resources from maritime (coastal waters, rocky foreshores and sandy silts) and continental environments (sheltered coast, wooded areas and their surroundings). Considering that the coastline was about one kilometre from the Mesolithic habitat (the marine level was 12 metres lower than the current level), all these environments would have been available in a foraging radius of five kilometres. These populations knew their surroundings extremely well, as part of a broad-spectrum economy. Can we therefore conclude that these hunter-gatherer populations occupied this site all year-long? Some of these natural resources are now available throughout the year, such as the guillemot, the woodcock wood or the mallard duck. Similarly, shellfish and crabs can be collected during all seasons, even if flavour and the quality of flesh can change throughout the year.

Some of these resources are easier to capture during certain periods of the year. If we apply the current seasonal rhythm and present-day animal behaviour to Beg-er-Vil, we can assume that the woodcock wood (*Scolopax rusticola*) was probably captured in winter in the woods. Anatidae are currently present throughout the year in the west of France, but they are more abundant in winter (Dupont et al. 2009). Some of the birds present at Beg-er-Vil are now extinct, such as the great auk

(*Alca impennis*), or currently absent from the coasts near Beg-er-Vil, such as the razorbill (*Alca torda*).

It is pertinent to raise the question of year-round accessibility. The guillemot and penguin breed on steep rocks and cliffs overlooking the sea. The large penguin lives on flat rocks, directly accessible by the coast. It is likely that these species were particularly abundant during the late Mesolithic and more vulnerable during their breeding period when they approached the coast. The woodcock is now known to be a winter visitor to Britain (Bargain et al. 1998-1999). It can be found occasionally on the coast during harsh winters (Buttin 2004). Ducks are abundant in the winter in some sheltered parts of Morbihan. This same area is also a wintering spot for many Atlantic European species and it is not unlikely that the mallard sheltered there during the cold season in the early Holocene. Similarly, some fish species, such as the tope or bream, approach the coast during the warm seasons, and are then accessible from the shore. Shellfish appear to have been consumed immediately after capture. No evidence of preparation for prolonged storage has been detected. Altogether, the study of gathering periods would therefore demonstrate human presence throughout the year. Although plant remains are badly preserved in Beg-er-Vil, the presence of hazelnut shells and wild pear seed demonstrates gathering during the fall. Pears are very characteristic of human presence during that season. On the other hand, hazelnuts can be stored and consumed throughout the year.

Although many indicators suggest that food resources were available during all seasons, further analysis is needed to determine whether this Mesolithic population took advantage of this natural manna to settle all year long on the Atlantic coast. Other elements are required to demonstrate this, relating in particular to insertion into cyclic rhythms (seasons and tides).

### **Domestic life by the ocean**

The minor changes in techniques and tool styles throughout the “Teviecian” from Beg-er-Vil to Téviec (6200 to 5400 BC) indicate that the economies on this coastal strip of southern Brittany were relatively stable. Our current research project focuses on understanding the mobility systems of these coastal populations between the islands and the continent. We consider these sites to be the nodes of a mobility and interaction network. However this position is likely to change over time and the functional status of the excavated area has already changed several times in Beg-er-Vil.

Beg-er-Vil is currently a coastal site and reconstructions of the past landscape have shown that this was already the case around 6200 BC. The archaeological investigation sheds light on several aspects of this relationship with the ocean. This wide open bay could have supported a maritime economy, including navigation between the coast and the islands, which were clearly occupied during this period (Belle-Ile, Groix, Houat and Hoedic; Marchand 2014). In a less hypothetical way the “maritime footprint” on this site clearly appears through the remains consumed there, in terms of food and lithic raw materials. Questions related to the nature and intensity of predation activities during the year are therefore crucial. It is possible that these groups acquired marine prey through fisheries installed in the bay in front of the site, however the submarine surveys conducted in 2013 by radar were inconclusive. Flint is also a marine resource in Brittany as it can only be collected as pebbles on the shores. However these flint pebbles are not located directly on the nearby foreshore, but several kilometres away; therefore this cannot be considered to be the main reason for settling on that part of the coast.

Other archaeological data also provide unclear information as to the “maritime footprint”. The structures themselves do not appear to be specialized in marine food processing. This observation

also applies to possible storage devices for delayed food consumption: chemical analyses are underway on various pits identified in Beg-er-Vil. The maritime character of these sites is clearer when we consider the data at a regional scale, as despite the intensity of our research, we have not discovered similar structures in the inland habitats. This lack of pits or hearths could indicate that these inland sites correspond to a faster mobility rhythm of occupation. For now however, when compared to continental sites, no tools can be considered to be specific to these coastal economies, although functional analyses should further clarify this issue in the future. The lithic industry of Beg-er-Vil includes thousands of flint pieces, corresponding to the whole reduction process; and tools are common for this phase (transverse arrowheads, backed knives, notched flakes, denticulated flakes).

On account of the number and density of archaeological structures, this type of dwelling is unique in the Mesolithic of Western France. In the light of these results, further excavations are called for around the Tévéc and Hoëdic cemeteries, in order to understand the relation between the funeral functions of these sites and the domestic activities of maritime hunter-gatherers.

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Figure 1 – Part 1: location of the study area (Morbihan, Brittany, France) in Western Europe. Part 2: Main Mesolithic sites with ancient shores (A: Téviec, B: Beg-er-Vil, C: Malvant, D: Port-Neuf at Hoedic). (CAD: G. Marchand).

Figure 2 – General view of Beg-er-Vil during the excavation (Photo: G. Marchand).

Figure 3 – Map of the Beg-er-Vil excavation at the end of 2015, with the different structures (CAD: G. Marchand).

Figure 4 – Pit E discovered in 2014 in 2014. The rock on the right is a part of the substratum. The large granite boulder on the left was discarded at the edge of the pit while warm embers still glowed at the bottom (Photo: G. Marchand).