Journal of Archaeological Science: Reports xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Journal of Archaeological Science: Reports

journal homepage: www.elsevier.com/locate/jasrep

Before the spatial analysis of Beg-er-Vil: A journey through the multiple archaeological dimensions of a Mesolithic dwelling in Atlantic France

Grégor Marchand[a,*], Catherine Dupont[a], Marine Laforge[b], Jean-Christophe Le Bannier[a], Camille Netter[a], Diana Nukushina[c], Marylise Onfray[d], Guirec Querré[a], Laurent Quesnel[a], Pierre Stéphan[e]

[a] UMR 6566 du CNRS, CREAAH, Laboratoire Archéosciences, Bâtiment 24-25, Université de Rennes 1, CS74205, 35042 Rennes Cedex, France
[b] Eveha et UMR 6566 du CNRS, CREAAH, Laboratoire Archéosciences, Bâtiment 24-25, Université de Rennes 1, CS74205, 35042 Rennes Cedex, France
[c] Universidade de Lisboa, Faculdade de Letras, UNIARQ, Centro de Arqueologia da Universidade de Lisboa, Alameda da Universidade, 1600-214 Lisboa, Portugal
[d] Université Paris 1, UMR 8215, Unité sol UFR DMOS AgroParisTech, Maison de l'Archéologie & Ethnologie, 21 allée de l'Université, 92023 Nanterre Cedex, France
[e] LETG UMR6554, Institut Universitaire Européen de la Mer, Place Nicolas Copernic, 29280 Plouzané, France

ARTICLE INFO

Keywords:
Mesolithic
Micromorphology
Sea-level index points
Shell midden

ABSTRACT

The Beg-er-Vil coastal site (Quiberon, Morbihan, France), initially excavated in the 1980s, and more extensively since 2012, is exposed to strong marine and anthropic erosion. At the present time, the main challenge is to define the status of the site by describing its formation dynamics. This necessitates investigating the taphonomic and erosive mechanisms using a combined method adapted to the shell midden levels, before undertaking spatial analysis. The archaeological level is protected by a thick dune and is subdivided into several stratigraphic units (SU), which record several changes in the function of the site. It is made up of accumulations of shell pockets covered in sandy sediments. The micromorphological analysis shows that this waste area seems to develop into an area of activities and movement. These surfaces also record alternating dry and wet seasonal conditions, but with no phase of abandonment. Systematic pH measurements show variations of 7.7 to 9.0 depending on the layers, corresponding to a slightly alkaline to alkaline acid-basic status. The mapping of measurements can be correlated to structures and archaeological remains of organic origin. The excavation shows that the division of the dwelling area was guided by topographic factors, with a circular dwelling 3.50 m in diameter installed on a flat zone and a shell waste zone on a slope towards the sea. Numerous fire-related activities were also carried out in this zone (pits, hearths). Spatial analysis by GIS shows a high concentration of recorded objects (lithics, bones, shells) to the west of the excavated area, in the shell level. Marine erosion is the main erosive factor limiting our knowledge of the site. The distance to the coastline was estimated after reconstruction of the relative sea level during the Holocene using the "Sea-Level Index Points" (SLIPs) methodology. Three SLIPs indicate a relative sea-level position between − 15.5 m and − 11 m and a foreshore area at a depth between − 7.15 and − 14.02 m around 6200 BCE. This paleogeographic reconstruction approach indicates that the site of Beg-er-Vil was located a few hundred to a few kilometres from the coastline.

1. Scientific position

It was imperative to resume the excavation of the Beg-er-Vil shell midden (Quiberon townland, Morbihan department, France) in 2012, as marine erosion is gradually eating away the cliff on which the archaeological site is located, and anthropic pressure in this coastal resort is gradually altering it (trampling, vehicle circulation, coastal development).

This excavation is part of broader reflections on hunter-gatherer societies in coastal areas during the Holocene, and in particular on the social organization of these societies (Yesner, 1980; Testart, 1982; Sassaman, 2004; Kelly, 2007). Current research focuses on the functioning of the related mobility systems, partly based on marine circulation on the islands (Dupont et al., 2009; Marchand, 2013, 2014). This involves a detailed analysis of the littoral dwellings, which are considered to be the nodes in a network of exploitation of maritime and

* Corresponding author.
E-mail addresses: gregor.marchand@univ-rennes1.fr (G. Marchand), catherine.dupont@univ-rennes1.fr (C. Dupont), marine.laforge@eveha.fr (M. Laforge), jean-christophe.le-bannier@univ-rennes1.fr (J.-C. Le Bannier), camille_netter@hotmail.com (C. Netter), dnukushina@campus.ul.pt (D. Nukushina), onfray.marylise@live.fr (M. Onfray), guirec.querre@univ-rennes1.fr (G. Querré), laurent.quesnel@univ-rennes1.fr (L. Quesnel), pierre.stephan@univ-brest.fr (P. Stéphan).

http://dx.doi.org/10.1016/j.jasrep.2017.07.014
Received 4 June 2017; Received in revised form 17 July 2017; Accepted 20 July 2017

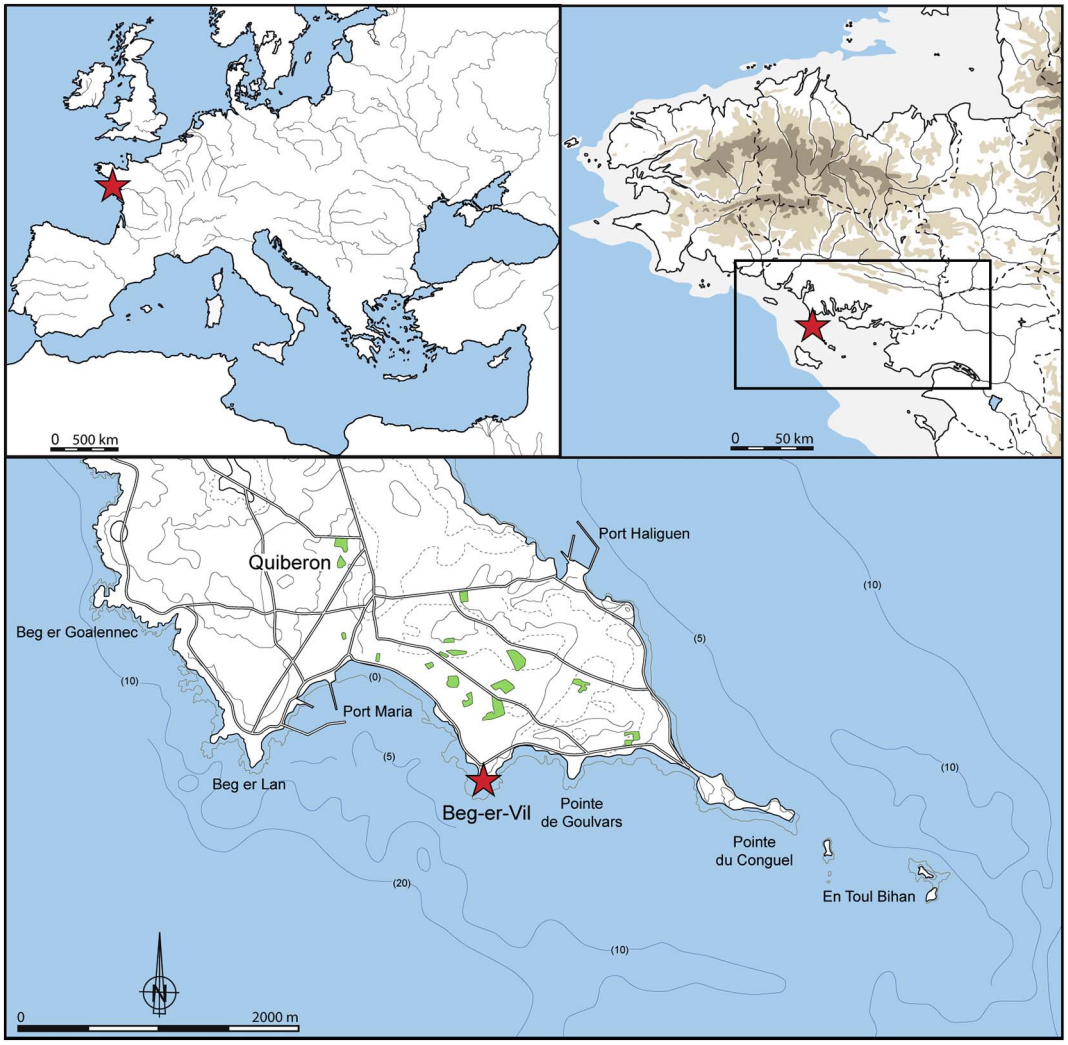

Fig. 1. Location of the site at the southern extremity of the peninsula (CAD: L. Quesnel).

terrestrial resources, as regards the chronology and the functioning of the occupations.

The site of Beg-er-Vil was remarkably conserved beneath a dune, but nonetheless required lengthy reconstitution work. The approach applied here is, as of yet, unique for the French Mesolithic on account of the diversity of the scientific methods involved. This article focuses on understanding the formation of the shell midden by the human occupants, its internal evolution after the abandonment of the site and the erosive forces that limit our understanding of the site. Each of these parameters represents filters that must be understood in order to provide a quality paleoethnolographic analysis.

2. Excavations from 1985 to 2016

The Quiberon peninsula is 11 km long from north to south by the Atlantic Ocean and Beg-er-Vil is located in the southernmost part, in a maritime zone dotted with several islands (Groix, Belle-île, Houat, Hoedic; Fig. 1). It is positioned in a small creek on the western side of a leucogranite head, only 5 m above the highest tides and very exposed to the elements. The archaeological site is clearly visible in the cliff as a single black-coloured level, filled with shells, crustacean remains, knapped flint, burnt rocky blocks and bones (fish, birds, mammals). This level is between a Pleistocene beach and a 0.30 to 1.8 m thick dune that extends throughout this part of Quiberon. The site was discovered in 1970, and was explored over 22 m^2 by O. Kayser between 1985 and 1988 (Kayser and Bernier, 1988). New excavations have been in progress since 2012, not only on the shell midden, but also on its surroundings (Marchand et al., 2016; Marchand, Dupont, 2017). In October 2016, 240 m^2 were mechanically stripped and partially excavated. At this point 120 m^2 were excavated, including 57 m^2 in the shell level. The total estimated surface of the shell midden is about 130 m^2 (Fig. 2), but it is clearly impossible to estimate the surface removed by marine erosion. The Mesolithic occupation extends all around the shell level in a single silty-sandy level with a thickness of about 0.30 m, and was sealed by the dunes and a recent car park.

3. Formation dynamics of the shell level

3.1. General stratigraphy

The stratigraphy established in the shell zone in the 1980s is strictly comparable to that of the 2010s, but initial work at the site focused on the thickest zone of the midden. The seemingly homogeneous archaeological level viewed from the cliff comprises several phases, described here from the base to the top.

- SU 7 is a 5-cm thick, orange-coloured, clayey-silty layer containing quartz pebbles stripped from the former beach and with no archaeological objects.
- SU 6 is a black-coloured, 5-cm thick layer of sands, with numerous crushed marine mollusc shells, and containing Mesolithic tools.
- SU 5.3 to 5.5 are black-coloured, sandy-silty layers with a total