

## Introduction

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### ABOUT PREHISTORY ON THE COAST

When it carefully dips its toe into the sea, prehistoric archaeology is at risk of losing its bearings somewhat, and skill is needed to navigate the evidence available to us. There are several reasons for this. Firstly, human occupation at the interface between the maritime and continental domains is a complex topic of research, due to changes in the shoreline over time relating to sea level change, coastal erosion or sedimentation. Revealing the natural and humanly-altered characteristics of the foreshore at different times in the past requires the use of a wide range of techniques, many of which are undergoing a complete metamorphosis today: geophysical surveys, GIS-based approaches to spatio-temporal modelling, the acquisition and processing of topographic and bathymetric data, image processing, stratigraphic analyses, etc.

Secondly, shell middens, with their marine and mollusc shells, remains of crustaceans and echinoderms, bones of fish, sea mammals and birds (and occasionally people) and their macroplant remains including charcoal, contain a wide range of information about the human exploitation of the maritime environment, and require a multi-disciplinary approach to their study. There is much that we can learn from them about the behaviour of coastal populations, be they hunter-fisher-gatherer groups or agro-pastoralist societies, over the natural cycles of seasons and tides. The different disciplines that are brought to bear on the study of shell middens each have their specific methods and timescales for the acquisition of data and an interdisciplinary approach, if it is to succeed, has to accommodate this diversity.

Thirdly, the evidence for coastal occupation and exploitation should not be considered in isolation from the broader geographical picture, since coast dwellers and users will have participated in economic and social networks that extended far inland. It is over such networks that items such as whalebone projectile heads or shell ornaments could have travelled considerable distances

from the coast. Here again, the use of advanced scientific methods can be required to track such movements.

Finally, we cannot ignore the regulatory aspects that apply to archaeological interventions in the coastal zone: there are many and diverse rules relating to the human and natural heritage of the coast, and many institutions can be involved. Dealing with these rules, regulations and stakeholders can significantly slow down progress, and this is particularly regrettable where the pace of marine erosion can demand a rapid response.

Held in early December 2020, after several postponements due to the Covid-19 pandemic, the international round-table *Investigate the Shore, Sound out the Past: Methods and Practices of Maritime Prehistory* was intended to offer a critical overview of the new methods at our disposal to explore prehistoric sites in the maritime domain, thereby opening up scientific perspectives. This initiative was funded as part of the European Research Network (IRN) project “Coast-inland dynamics in prehistoric hunter-gatherer societies” (PrehCOAST), supported by the CNRS, Institute of Ecology and Environment from January 2019, under the direction of G. Marchand. It also benefited from involvement by the ArMeRIE programme (“Maritime Archaeology and Interdisciplinary Environmental Research”), directed by Y. Pailler and co-funded by the University of Brest and the INRAP Institute, and from the interdisciplinary approaches that have been developed within the SeaLex research project (“The SEA as a Long-term socio-ecological EXperiment”), directed by P. Stéphane and funded by the university research school ISblue, and the French LTSER site “Zone Atelier Brest-Iroise”.

The meeting brought together 192 researchers from seven countries (Canada, Spain, France, Ireland, Norway, Latvia and the United Kingdom), with 27 papers being presented. English was used as the *lingua franca* of the event. This volume presents nine articles that attest to this highly stimulating encounter and which reflect the diversity of perspectives and approaches to coastal archaeology that are currently used around the world.

### **DETECTION: NEW TOOLS, NEW DATA**

In their article, “Potential and Limitations of Geomagnetic Prospecting for the Imaging of Prehistoric Sites in Coastal Areas: A Case Study of the Port Neuf Site (Hoedic)”, F. Lévêque and his colleagues describe the conditions for undertaking geomagnetic prospecting in dune-covered coastal sites, with their irregular vegetation cover and variable topography. The use of other geophysical methods such as magnetometry allows for the refinement of the proposed interpretations, in particular in detecting the presence of fireplaces. These are not “turn-key” methods, but rather an initial approach that requires a constant dialogue between the archaeologist and the geophysicist.

G. Marchand et al.’s contribution, “Geoarcheology and Prehistory of the St. Pierre and Miquelon Archipelago: Theoretical Issues, Methods and Preliminary Results”, addresses a wide range of methods and techniques in an area that has hitherto received very little archaeological attention. The project, begun in 2018, originally focused on the emergency excavation of the coastal site of Anse à Henry, which had been occupied for approximately five thousand years from the Maritime Archaic to the Historic period. However, from the outset, the approach that was taken integrated multiple scales of analysis, with a geomorphological component (monitoring of erosion, changes in sea levels) and an archaeological component (inventory of remains, dating of the various episodes of occupation, investigating coastal-inland networks, geochemical analysis of rocks).

### **PROSPECTING AND EXCAVATING: FIELD PRACTICES IN A COASTAL CONTEXT**

The article by E. Lopez Romero: “The Potential of Analysing Prehistoric Human Occupation in the Western Rias of Galicia, Northwest Iberia: Methods and Prospects”, reviews the methods developed in this region of Spain over the last ten years. Until now, the commonest type of archaeological investigation along the coast of Galicia has been small-scale survey or short-term rescue operation, undertaken within the context of developer-funded archaeology, without any real continuity of research. This work highlights the high diversity of prehistoric remains along the shoreline, a density that has been largely underestimated until now.

The article by S. Piper, “Empty Edges? Ten Years of Searching for Prehistory on the Atlantic Coasts of Scotland”, is based on very different data, in areas that are scarcely touched by developer-funded archaeology. In the Highlands and Western Isles of Scotland, archaeological research has been much more limited due to the lack of current major economic infrastructural development in

these parts of Scotland. Here, the loss of archaeology through coastal erosion is a major concern. After ten years of field research, the author presents a highly original and ambitious review of the archaeology. The burial of sites under peat or sand dunes makes geophysical surveys or visual reconnaissance ineffective. The three projects presented in this paper illustrate the benefits to be gained from regular monitoring of coastal erosion, which reveals Mesolithic sites, particularly shell middens, as they are exposed and destroyed by coastal erosion. Studying the geomorphological parameters of such sites enables predictive modelling of the location of further sites.

### **CONTEXTUALISING SITES BASED ON BIOLOGICAL INDICATORS**

C. Dupont et al. develop an approach for the Mesolithic period that straddles marine biology and archaeology in their paper, “A Question of Size! The Importance of Marine Crabs in Food Remains from Mesolithic Fisher-Hunter-Gatherers at Beg-er-Vil, Quiberon, Morbihan, France”. They are interested in the abundant (but often neglected) remains of crabs, which highlight the role of the foreshore in the daily search for food, and they present a novel perspective concerning the exploitation of the wrack zone. This approach has only been possible thanks to the development of a demanding and meticulous scientific method, from the excavation right through to the laboratory analysis, taking here as a model the excavation of the Late Mesolithic site of Beg-er-Vil.

### **MODELLING: LANDSCAPES, POPULATIONS, HUMAN MOBILITY AND ADAPTATION PROCESSES**

The policy of preventative archaeology that has been applied in Norway over the last twenty years has led to the discovery and detailed study of a large number of Mesolithic sites (9300-3900 cal. BC), mainly in coastal areas. This abundance of well-excavated and well-dated sites allows for improved modelling, supported by completely re-thought theoretical frameworks and novel methodological tools. The article by A. Schülke and colleagues, “New Perspectives on Old Shores: Current Approaches on the Mesolithic in Southeastern Norway and their Potential”, takes us through their analysis of the archaeological sites in their landscape, exploring the question of paleo-shorelines raised by the Scandinavian isostatic rebound. The article then addresses themes such as population dynamics estimated by radiocarbon dates, settlement patterns and site location, and technical traditions. The new perspectives offer a better, holistic perspective on social life, rituals and even cosmogonies.

In their contribution, “Detecting the Displacement of the Baltic Basin’s Ancient Shorelines by Clustering

of Terrain and Distance Data along the Glacioisostatic Uplift Axis”, E. Breijers et al. also deal with modelling human settlement dynamics on the coastline, pointing out the difficulties in dating the early Holocene raised shorelines along the eastern coasts of the Baltic Sea in Latvia. A GIS-based modelling of the isostatic uplift was carried out using a very detailed digital terrain model. This work identified 25 successive paleo-shorelines during the Ancylus Lake and Littorina Sea stages. These data now provide a robust basis for the interpretation of the archaeological sites that were initially located on the coast but were subsequently raised by post-glacial isostatic rebound.

B. Gehres introduces an additional dimension to this modelling of coastal areas in his chapter, “Archaeology of Neolithic Island Networks: Diachronic and Paleo-Economic Approaches to Island Occupation through the Contribution of Ceramic Analysis”, through the petrological and chemical study of ceramics. These methods shed light on socio-economic processes (uses and exchanges) and on the management of mineralogical resources. Focusing on the Neolithic occupation of the islands of Brittany, the study also addresses fundamental questions of interactions with the mainland by these early agro-pastoral societies and, more generally, the influence of the marine environment on settlement systems in areas that are not *a priori* favourable to the expansion of agropastoral practices.

I. M. Berg-Hansen et al. propose a theoretical framework for prehistoric coastal research, based on works carried out in Norway (“Coast-Concepts in Norwegian Stone Age Archaeology”). The very important glacio-isostatic

rebound in this country has preserved the ancient shorelines of the Mesolithic period, thereby providing from the outset a rough dating of the coastal human occupation (Beach Model). The authors argue that the theoretical foundations of the approaches that have been developed over the last few decades are too simplistic. Insufficient attention has been paid to inland areas. It is now necessary to reintegrate inland and coastal archaeology within a broader perspective, characterised as the landscape of practice.

This article closes the proceedings of the round table in a beautiful way by placing the emphasis not on the methods and techniques of our investigations, but rather on their ideological and conceptual basis. It acts as a call to others to ensure that themes, concepts and methods all mesh together. Scientific approaches to prehistoric coastal occupation, here around the North Atlantic and the Baltic Sea, often demand a strong association between geomorphology and archaeology: how else can it be done in the context of severe coastal erosion? The methods used range from geophysics to the study of ceramic fabric, each providing clues about these vanished worlds. The pooling of these approaches is desirable in order to arrive at the clearest possible picture of the past, but many methodological obstacles must be overcome along the way. In the current context of global warming and predictable rise in the average level of the oceans, it is more important than ever that we speed up, and join up, our investigations of marine erosion and the human use of the coastal zone.

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