

## Give us some small sites please!

### Report on the first year of excavations in the rock shelter of Pont-Glas (Plouneour-Menez, Finistère, France)

Grégor Marchand (1) and Michel Goffic (2)

(1) – UMR 6566 du CNRS – Université de Rennes 1; (2) – Service départemental d'archéologie du Finistère

#### Understanding Mesolithic societies in Brittany

Research on the Mesolithic period in Brittany was initially concentrated on the coast and shell middens, and has gradually migrated towards the interior of the Breton peninsula during the 1970s and on a greater scale during the 1990s. Following the field surveys of P. Gouletquer's team (Gouletquer *et al.*, 1996), it became obvious that the most frequent mode of Mesolithic occupation in the west of the Armorican peninsula was settlement in the interior and not at coastal shell middens. We have an inventory of 1318 sites with prehistoric flint tools in Finistère (figure 1), a number that increases continually thanks to the efficiency of the network of prospectors in this region. These sites represent a mass of data that is still largely unexploited. This abundance of archaeological material enables analysis of how the raw material economy is structured across space on a regional, or even sometimes a local, basis.

The acid soils of the Armorican massif have destroyed bone remains, except those preserved in alkaline shell deposits. The seeds and often the charcoal have been destroyed by the same causes. It is thus necessary to use raw material and stone tool dispersion as the basis for information about human group mobility, social structure, ethnic markers or the social organisation of stone tool production. Raw material diffusion zones in the Mesolithic are well known in western Brittany, especially for the end of the Late Mesolithic (6000-5500 cal BC - Gouletquer *et al.* 1996; Yven 2002; Marchand 2007), but the ways in which this dispersion of raw materials across varied habitats was carried out is ignored. Critical features in the organisation of lithic reduction sequences on a site - i.e. whether artefacts were being made in or outside a particular habitat - are never perceptible because of a poor sedimentary record and a partial understanding of the spatial units.

Yet, only a functional approach of this kind will enable us to understand residential or logistic mobility in the hinterland. Without bones or seeds available, this approach combines use-wear analysis on stone tools with the identification of “*chaîne opératoire*” stages (decortication flakes, blade production, rejuvenation flakes, tool retouch stages etc.) in each habitat.

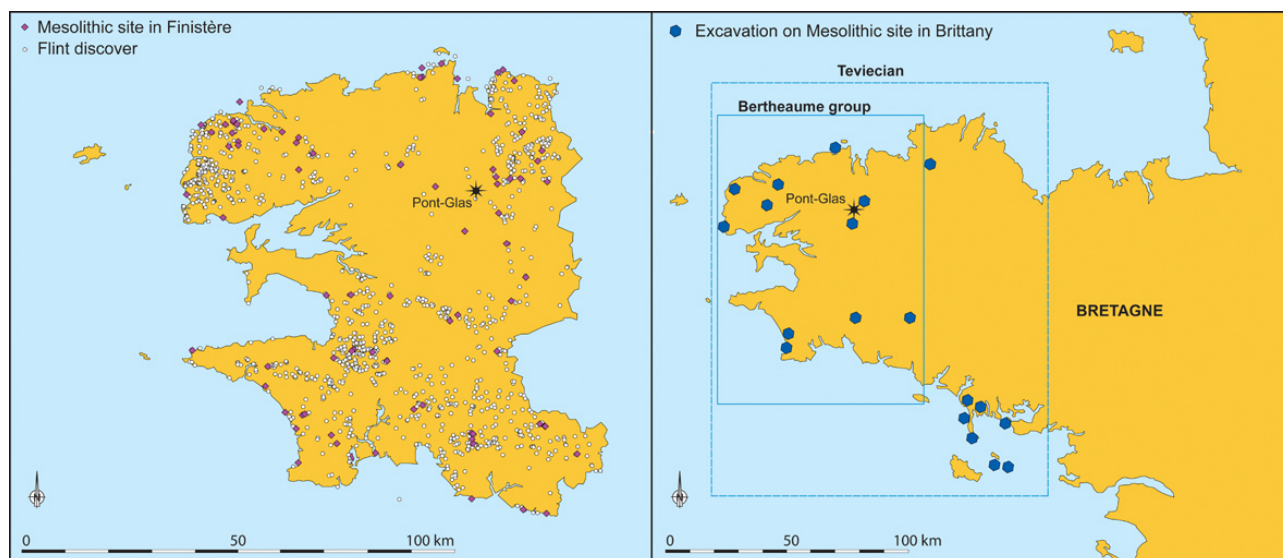


Figure 1: Spatial distribution of Mesolithic sites in Brittany (on the left: field surveys in Finistère; on the right: excavations in Brittany).

We tried initially to improve our understanding of the available information by exploring the nature of the surface sites. Between 2001 and 2003, five sites in the corpus of surface sites have been partially excavated in varied topographic contexts (slope, plateau, dry valley, riverbank – Marchand, 2005). This work was made in parallel to similar works recently in Finistère: at Quillien (Le Cloître-Saint-Thégonnec – Blanchet *et al.* 2006), at Kervilien (Tonquédec, Côtes d’Armor – Yven 2002) or at Lannuel (Guipronvel – Pailler 2007). None of these sites delivered any preserved archaeological level, nor man-made structures. It appears that the limits of a site visible on the surface must initially be judged according to possible taphonomic influence before interpreting it as the original human occupation limits. The flint areas on these sites corresponded to a thick infra-ploughing level, while their limits resulted from obvious sedimentary truncations. Therefore, we decided to change our approach and began to seek homogeneous sedimentary levels in other contexts.

Archaeological evidence for the Mesolithic in western France is dominated by big assemblages collected from large excavations or huge field surveys (often from areas greater than 10,000 m<sup>2</sup>). The discovery and examination of small archaeological sites would be particularly welcome, as this would enable a better association of diagnostic elements together (types of tool and debitage methods), elements that are well-known but still floating in our chronological models. Only fortuitous discoveries can lead us to archaeological artefacts resulting from short pauses by hunters (“location”) or flint knapping activities. This assertion is however very theoretical, because no such fortuitous occurrences have taken place! Rescue archaeology is now interested in surfaces of several hectares: when the mechanical scrapings allow the detection of a Mesolithic site, it is a vast unit, with numerous occupations during Prehistory, and thus it cannot answer the problems discussed here. The rock shelters such as Roc’h Toul (Guiclan), Kerbizien (Huelgoat) and Pont-Glas (Plouneour-Menez) constitute a kind of habitat quite rare in Brittany, but deserve attention as their restricted dimensions imply short-term occupations.

### Excavations in 2007 at Pont-Glas

The Pont-Glas rock shelter (Plouneour-Menez) offered good conditions to approach these problems. Two big blocks of granite (blocks 1 and 2), one leaning on the other, protect a surface of 15 m<sup>2</sup>. It is a cavity with two entrances (figure 2 and 3). One other block of granite (block 3) closed this shelter at the eastern entrance and probably facilitated the installation of a roof. However, modern quarrymen destroyed it recently. This shelter was discovered and tested in 1987 by M. Le Goffic (1990), who recognized a level containing flints of late Mesolithic date mixed with Gallic ceramics.

The excavations of 2007 (figure 4) examined the entire covered surface as well as a zone extending two meters in front of the Eastern entrance. Under a vegetable litter rich in Mesolithic lithic pieces and in Gallic ceramics, a dense burned stone level, some 40 cm thick (outside) to 15 cm thick (inside), contained La Tène ceramics and Mesolithic lithics. Underneath this disturbed level, a homogeneous level contained only Mesolithic artefacts.



Figure 2 (left): The beginning of excavation in front of the rock shelter of Pont-Glas (view from the east).  
Figure 3 (right): Excavations beneath block 2.

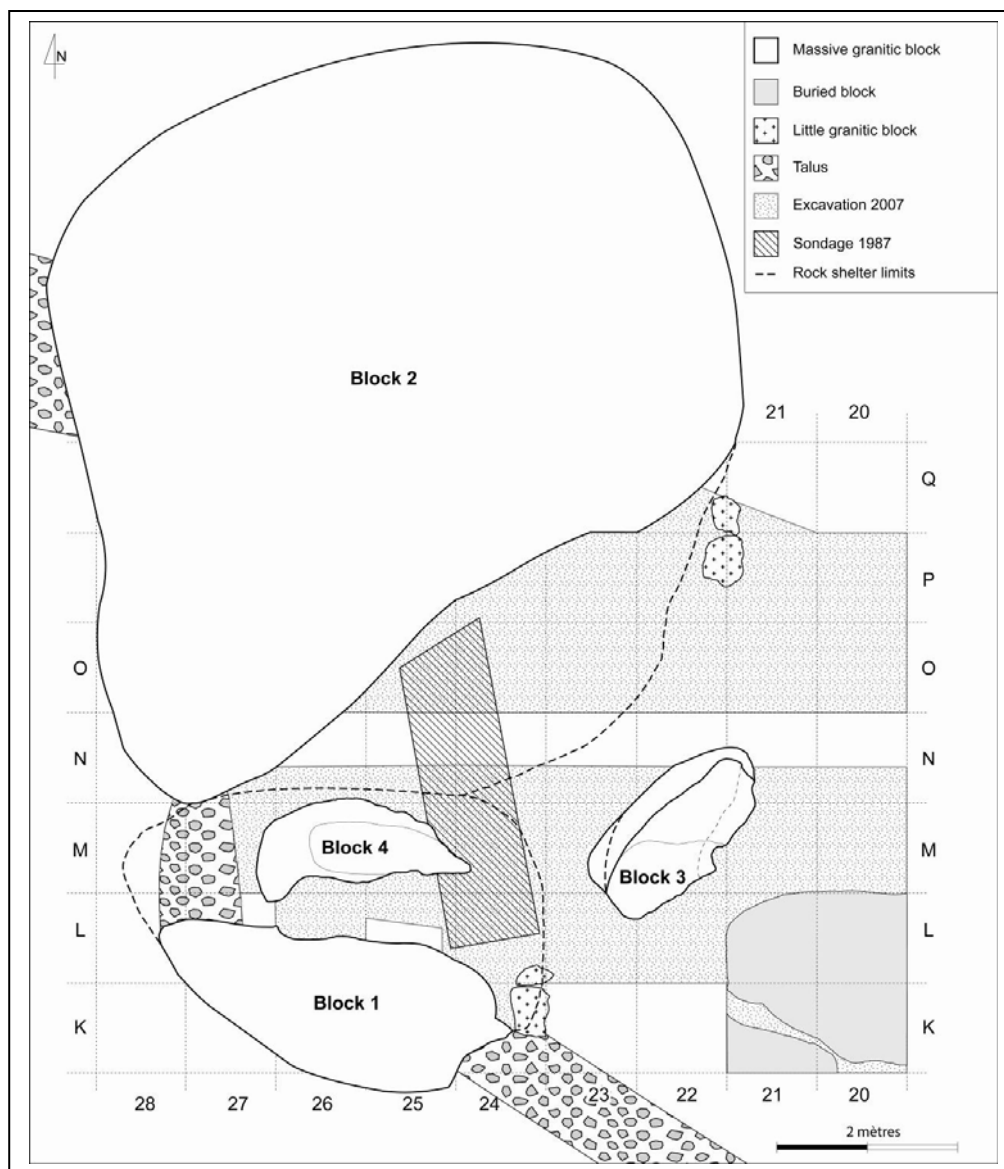


Figure 4: Plan of the site (after excavation 2007).

We found 337 artefacts in the disturbed levels and in the homogeneous level at the bottom. In spite of recent disturbance carried out by humans and animals, it seems that the horizontal distribution of all the lithic pieces corresponds to the spatial organisation of the shelter in prehistoric times. The great majority of the finds come from under Block 2. However, the height of this part of the shelter during the Mesolithic must have been between 0 to 70 cm high, allowing a human only to sit down or to lie down. We can therefore suppose that this was a discard zone: the central part of the shelter was used and the activities moved artefacts to the edges of the shelter.

### Lithic industry

The primary source of raw materials of the Pont-Glas knappers are flint pebbles collected on the beaches 40 km to the north (figure 5). Local raw materials (metamorphic or sedimentary rocks) represent half of the lithic material of this collection. The diversity of the facieses of Forest-Landerneau microquartzite or Eocene sandstones represented in this small assemblage indicates that the occupations had been multiple; during every stay, people only left a few elements. The presence of imported flints from the carbonated plains of the Paris basin (250 km) is hard to interpret, because such circulations are not observed for this period in Brittany.

The thin backed bladelets are characteristics of the Bertheaume group (Early Mesolithic), which is a technical entity present in all Finistère at the 9<sup>th</sup> and at the beginning of the 8<sup>th</sup> millennium cal BC.

Nevertheless, the great majority of the lithic pieces are Teviecian (Late Mesolithic), an industry of the second half of the 6<sup>th</sup> millennium cal BC. The best comparison for the raw material types, the debitage techniques and the tools types is the site of La Presqu'île (Brennilis), 10 km at south of Pont-Glas (Marchand 2005). Other sites of comparable nature are known in the north of Finistère: Kerliezoc (Plouvien - Josselin *et al.* 2003), Cobalan (Forest-Landerneau - Tsobgou 2006) or Kerdunvel (Plourin-Ploudalmézeau - Marchand 2005 b). The use of non-flint raw material reached its peak at the end of the Mesolithic and it is the most visible signal for the archaeologist working on the industries. The main differences between Pont-Glas and the big sites are the proportions of tools and the different “*chaîne opératoire*” stages.

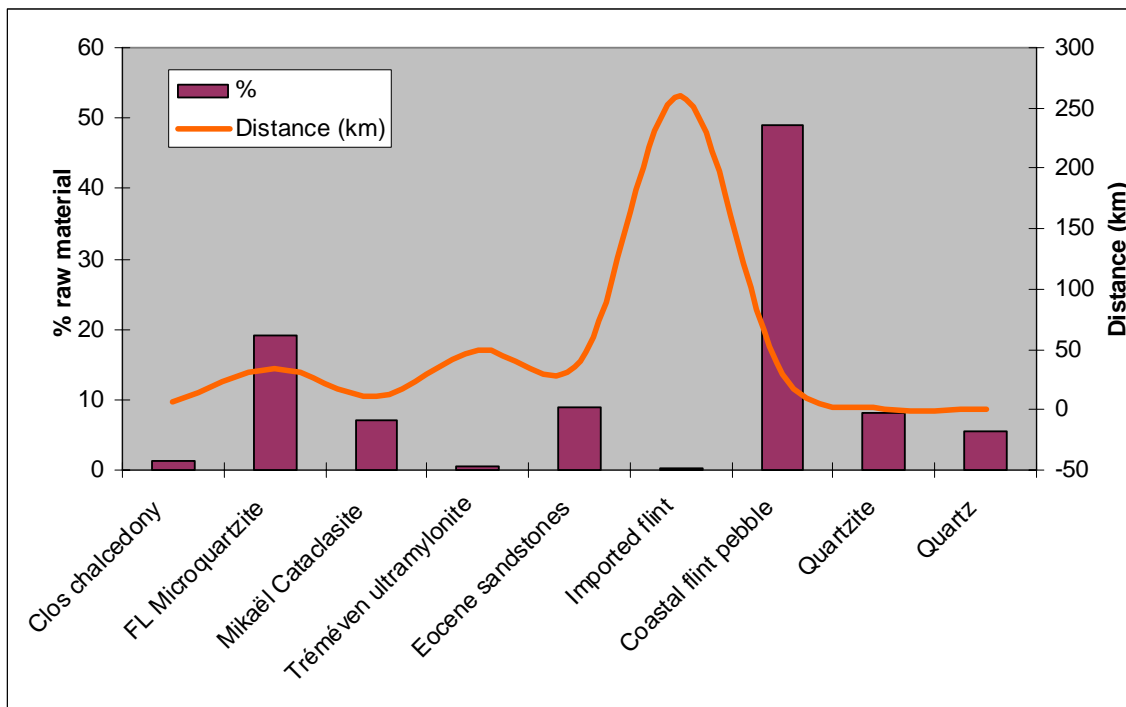


Figure 5 (above): Proportions of raw material and distance for acquisition.



Figure 6: Arrowheads (on the left: Mikaël cataclasite)

### First steps in the creation of a model

With a rate of 85% (out of only 20 tools...), the arrowheads are dominant among the tools (figure 6). It is interesting to compare this rate to those obtained on other sites of the end of the Mesolithic studied with the same methods: arrowheads account for 29% of tools at the huge site of L'Essart (Poitiers, Vienne; Marchand *et al.* 2007), 50% in the shellmiddens of Beg-er-Vil (Quiberon, Morbihan) and 75% on the small coastal station of La Gilardière at Pornic (Marchand 2000). We interpret these proportions as indicators of the activities carried out in different sites. In the same way, we propose to see in the rate of burned flint a relevant criterion: the more stable the occupation, the more diverse the activities, the greater the probability for a lithic tool to be affected by fire. The rate of burned elements is rather low here (22%) in comparison with Beg-er-Vil (35%) or L'Essart (85%).

The long occupation period seen by faunal studies (Dupont 2005), the high level of marine proteins in the human bones (Schulting and Richards 2001), the importance of structures for the living and the dead (Péquart *et al.* 1937) and the absence of inland lithic raw materials indicate the stability of human occupation on the coast and the central position of shell middens in Mesolithic spatial organisation (Marchand 2005, 2007). In the logistical model that we outline here, the Pont-Glas rock shelter or the coastal site of La

Gilardière are field camps of task groups (in Binford's terminology, 1980), intended more particularly for hunting (Pont-Glas) or fishing (La Gilardière), while the shellmiddens or the huge riverbank sites would be permanent or semi-permanent settlements.

This lithic assemblage of Pont-Glas has to be completed by the excavation of the probably homogeneous bottom levels and excavation under other blocks immediately near by. The first results are interesting to document a kind of unknown site, related to the activities of predation. The comprehension of Mesolithic societies at the end of the Breton peninsula was traditionally done according to two ways:

- Through the total analyses of the remains from the four shellmiddens in southern Brittany, which include organic remains, necropolis and domestic structures,
- Through the lithic analyses exclusively on more than a hundred large Mesolithic sites in the hinterland (mainly surface finds).

The main problem in hunter-gatherer archaeology in western France is to find enough contrast between the habitats in order to approach the rhythms of human mobility. We hope these little archaeological contexts in rock shelters will open a new door into the comprehension of human behaviour in the first part of the Holocene.

### Acknowledgements

We are very grateful to Chloé Andrieu (Paris X University) and Graeme Warren (University College Dublin) for their help in translation and their important amendments.

### Bibliography

- Binford, L.R. (1980) Willow smoke and dog's tails: hunter-gatherer settlement systems and archaeological site formation, *American Antiquity*, 45 (1), 4-20
- Blanchet, S., Kayser, O., Marchand, G. and Yven, E. (2006) Le Mésolithique moyen en Finistère : de nouvelles datations pour le groupe de Bertheaume. *Bulletin de la Société Préhistorique Française*, 103 (3), 507-518
- Dupont, C. (2005) Les coquillages alimentaires des dépôts et amas coquilliers du Mésolithique récent / final de la façade atlantique de la France: de la fouille à un modèle d'organisation logistique du territoire. *Préhistoire, Anthropologie Méditerranéennes*, 12, 221-238
- Gouletquer, P., Kayser, O., Le Goffic, M., Léopold, P., Marchand, G. and Moullec, J.-M. (1996) Où sont passés les Mésolithiques côtiers bretons ? Bilan 1985-1995 des prospections de surface dans le Finistère. *Revue Archéologique de l'Ouest*, 13, 5-30
- Josselin, J., Marchand, G., Pailler, Y., Moalic, L., Hamon, G. and Leroy, A. (2003) Kerliézoc en Plouvien (Finistère). Regards croisés sur un habitat du Mésolithique final. *Revue Archéologique de l'Ouest*, n°20, 53-85
- Le Goffic, M. (1990) L'abri-sous-roche de Pont-Glas en Plouneour-Ménez. *Bulletin de la Société archéologique du Finistère*, 119, 61-69
- Marchand, G. (2000) Facteurs de variabilité des systèmes techniques lithiques au Mésolithique récent et final dans l'ouest de la France. In : *Crotti P. Meso'97. Table-ronde sur l'Épipaléolithique et le Mésolithique*, Lausanne, novembre 1997, 37-48
- Marchand, G. (2005) Les occupations mésolithiques à l'intérieur du Finistère. Bilan archéographique et méthodologique (2001-2003). *Revue archéologique de l'Ouest*, 22, 25-84
- Marchand, G. (2007) Neolithic fragrances : Mesolithic-Neolithic interactions in western France. In Whittle A. et Cummings V. (eds) *Going Over*. Proceedings of the British Academy, 144, 225-242
- Marchand, G., Michel, S., Sellami, F., Bertin, F., Blanchet, F., Crowch, A., Dumarçay, G., Fouéré, P., Quesnel, L. and Tsobgou-Ahoupe, R. (2007) Un habitat de la fin du Mésolithique dans le Centre-Ouest de la France : L'Essart à Poitiers (Vienne). *L'Anthropologie*, 111, 10-38
- Pailler, Y. (2007) Des dernières industries à trapèzes à l'affirmation du Néolithique en Bretagne occidentale (5500 – 3500 av. J.-C.), *British Archaeological Reports International Series* 1648, 340
- Péquart, M., Péquart, S.-J., Boule, M. and Vallois, H. (1937) Tévéc : station nécropole mésolithique du Morbihan, *Archives de l'Institut de Paléontologie humaine* 18
- Schulting, R.J. and Richards, M.P. (2001) Dating women becoming farmers : new paleodietary and AMS dating evidence from the breton mesolithic cemeteries of Tévéc and Hoëdic. *Journal of anthropological Archaeology* 20, 1-31
- Tsobgou Ahoupe, A.R. (2006) Chimie, structure de la matière et modalités du débitage des ultramyonites et cataclasites armoricaines : exemple du site de Creac'h Miné Vihan (France). *Revue d'Archéométrie*, 30, 109-118
- Yven, E. (2002) The deposits of raw materials and the quarry-sites during Mesolithic in the Trégor in Brittany, *6<sup>th</sup> International Conference on the Mesolithic in Europe, Oxbow Monographs*, 451-460