Why have Mesolithic populations eaten crabs only in the last 15 years?

Catherine Dupont*†[1] and Yves Gruet

[1]CNRS, CReAAH, UMR6566 (Centre de Recherche en Archéologie, Archéosciences, histoire) – Université de Rennes I – France

Abstract

Shell middens are celebrated Mesolithic archaeological sites along the European Atlantic coast and have been known and excavated for a long time. The shells which are so abundant in these sites have often been considered merely as the sediment. Renewed research over the past twenty years has led to re-excavation of these sites. A closer look at midden sediment composition made possible because of the use of fine mesh for sieving combined with laboratory sorting which together have opened up a new scale of description. We can now identify a significant number of exploited animal classes: marine and terrestrial mammals, fish, marine and terrestrial birds, molluscs, crabs, sea urchins, goose-barnacles and barnacles. Within these there is also a significant diversity of species. Although crabs have always been described as present in shell middens, little attention had been paid to their potential archaeological information. For example, crabs have been identified in past publications at Portuguese sites such as Cabeço da Amoreira and Moita do Sebastião, but were described for the information they provided on climate rather than for their nutritional value. Isolated crabs were also regularly collected during excavations but rarely determined, or quantified.

Among the recently excavated sites is Beg-er-Vil in north-western France. Excavations in the 1980s had yielded a few crab fingers, but the 5mm dry sieved sediment had been stored without being sorted. A first study of the samples was carried out in the early 2000s, when four species of crab were identified. The determination of their sizes indicated fishing of large individuals. New excavations in 2012, are describing a completely different story. Three new species of crabs are determined thanks to the sieving of the sediments at 4mm and 2mm. These identifications increase the known diversity of exploited crustaceans and also the fishing techniques of Mesolithic groups. The discovery of spider crabs could well correspond to the collection of these decapods during their regular stranding in the spring. This activity complements the numerous ones already described for the site, as well as those inherent to the collection of products left behind by the tide. Reconstitution of the original sizes is also raising questions. Based on data from the 1980s, fishing of the largest crabs indicates capture of all individuals from the smallest to the largest. In the new scenario, the fishing pressure is more significant, unless food is mixed with algal inputs. If sieve mesh size can influence our assumptions about the exploitation of marine resources, the taphonomy can also be fundamental to modifying our understanding. Indeed, we observed differential conservation of the faunal remains that appears to show a greater degradation of the elements of 2010 compared to those of 1980. Thus, the crabs are also a tool to discuss the theme of the degradation of

*Speaker

†Corresponding author: catherine.dupont@univ-rennes1.fr

these shell-middens; they do not seem to be a closed and stable system.

After ten years, the exhaustive sorting of some sediment samples has led to a review of the importance of these ten-legged crustaceans. Although many parts of the skeletons are sometimes found, for example the mandibles, the extremities of crab claw fingers are the best preserved and most numerous parts observed at the Mesolithic shell-middens of the European Atlantic coast. These fingers, whether fixed or mobile, are informative. They have protuberances or teeth whose shape, number and arrangement vary according to the species. Thus, with a comparative collection and new methodological developments these fragments give allow us to identify the represented species, their numbers and their dimensions. These species and their quantities mean we can identify the exploited environments (substrate and position on the foreshore). Theoretically, the data can also permit us to calculate the quantities of crab meat consumed by these prehistoric populations. Crabs are among the most profitable animals if the mass of produced flesh is compared to that of their skeletons. They may therefore account for a significant portion of the diet of fisher-hunter-gatherers of the Mesolithic Atlantic European coast.

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