Mollusc analysis of a sample from the Mesolithic site at Westward Ho!, Devon

By

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The Mesolithic shell midden at Westward Ho! (Churchill 1965; Jacobi 1979) lies at c. -4 to -6m ODN on the foreshore and is only uncovered by low tides and only then when sand has been scoured clear of the site. The last exposure was in May 1980 when a number of samples were collected by Dr Roger Jacobi who noted that the midden was much reduced in area by erosion and under imminent threat of destruction. Accordingly the decision was taken that when the next exposure occurred the Central Excavation Unit would mount a rescue excavation directed by N.D. Balaam. With the planning of this excavation in mind, Mr.Balaam asked the writer to examine part of one of the samples collected by Dr Jacobi in order that the potential and problems for mollusc analysis could be assessed.

The sediment was a dark grey gleyed clay (Munsell moist N4) which contained very abundant fragments of shell as well as rounded quartzite pebbles and both rounded and angular shale pebbles and pebble fragments. The material taken for analysis weighed 300 grams and had already been broken up and partly sieved by Mr. Balaam. The sediment was placed in water and flot was decanted onto a 0.5mm sieve. The remainder of the sediment broke up easily in water and was then washed onto a nest of sieves of sizes 0.5mm, 1mm, 2mm, 5.6mm, then dried and sorted under the microscope.

Marine molluscs recovered were as follows:

Scrobicularia plana (da Costa)	47 umbo fragments
Mytilus edulis Linnaeus-Common Mussel	34 umbo fragments
Venerupis spp - Carpet-shell	Several non-umbo or hinge teeth fragments.
? Ensis sp. Razor-shell.	1 non-hinge fragment
Patella? vulgata Linnaeus, Limpet	2 fragments from juveniles
Littorina littorea (Linnaeus), winkle	3 non-apical fragments
Littorina saxatilis (Olivi), Rough winkle.	1 intact shell.

Almost all the shells were very fragmentary, there being only one intact shell, and the majority of fragments were smaller than 0.5mm. The agencies responsible for fragmentation require further investigation. Because the marine mollusc fragments were so small, identification and counting had perforce to be based on characteristics of the hinge/umbo area. Counts are based on fragments of this area but the fragments were sometimes so small that it is quite possible for more than one fragment to come from a single value. It is also likely that the fragmentation patterns of different species vary and that small fragments of certain species are more readily identifiable than those of others. The only abundant marine species were Scrobicularia plana and Mytilus edulis. The numbers of fragments can be compared in two ways: firstly on the basis of the number of umbo fragments M.edulis - 34, S.plana - 47, secondly in terms of shell fragments in the greater than 5.6mm fraction which have been divided up into the two species on the basis of colour and shell surface texture, the result was M.edulis - 70 fragments, S.plana - 95 fragments. As regards the ecology of the two species M.edulis is found wherever suitable rocky areas or stones are available for attachment whereas S.plana is found in estuaries on soft bottoms of clay or mud in situations where freshwater flows into the sea producing conditions of varying salinity. Other species, of less numerical importance, are Littorina saxatilis, a species of rocky coasts; Littorina littorea which occurs on rocky stony and muddy beaches; Patella? vulgata which lives on rocky substrates; ?Ensis sp. which burrows into sand and silty sand and Venerupis spp which lives in muddy sand or gravel. The site lies at the junction between the rocky shore platform which lies to the south west and the major estuary of the Taw/Torridge to the north east, clearly both environments were contributing material to the site.

Also present in the sample were 25 land and two freshwater molluscs:-

Land:

Carychium tridentatum (Risso)	7
Ena obscura (Muller)	2
Discus rotundatus (Muller)	6
Vitrea contracta (Westerlund)	2
Aegopinella pura (Alder)	4
Oxychilus cellarius (Muller)	2
Cepaea spp	2

Freshwater:

Pisidium casertanum (Poli) 2

The land molluscs are all species which one would normally associate with a wooded environment and they all occur in an approximately contemporary coastal peat context at Blue Anchor Bay, Minehead (Kerney 1976). Pisidium casertanum is a species widely distributed in all kinds of freshwater habitat. The overall picture, though based on a relatively small amount of material, is not inconsistent with the results of earlier pollen analysis (Churchill 1965) which implied the proximity of relatively dry fenwood.

During the course of analysis a number of other biological remains were noted, these included 30 small fragments of bone, 16 seeds, 9 plates of acorn barnacles, wood fragments, numerous pieces of charcoal and a fragmented half hazel nut.

A number of tiny flint fragments were also noted. Six had clear signs of bulbs and points of percussion suggesting they were the result of debitage, of these two showed signs of cracking by fire. There were also nine other non-bulbar flint chips two of which were fractured by fire. The flint artifacts, together with those recovered during previous work (Churchill 1965), are conclusive evidence of activity by Mesolithic man. This is not necessarily to say that all the marine Mollusca were brought to the site by man for consumption. Some species (e.g. Littorina saxatilis) are too small to be eaten, whilst other fragments represent tiny juveniles. Particularly problematic is Scrobicularia plana, the most abundant species in this sample (though not necessarily elsewhere in the midden), since in the literature so far searched, no record has been found of its having been eaten.

This small scale analysis has demonstrated enormous scope for future work on both the land and marine Mollusca. Hopefully the opportunity will present itself to record and obtain fresh samples from the midden but if the opportunity does not arise, and it is possible that the midden has already been eroded away, then there appears to be a strong case for more extensive work on the samples recovered by Dr. Jacobi. Three problems in particular need to be confronted by future work (i) How did fragmentation of the molluscs come about? (ii) Is the evidence of lateral variation of species importance within the small surviving area of the mound?

(iii) Does the midden include a component of natural death assemblage material mixed with an artifactual component.

References

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