

Longstone Edge, Derbyshire (CAS Site 472). Molluscs and Carboniferous fossils

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Introduction

Excavation of the two monuments at this site was undertaken in 1996 by the then Central Archaeological Service (now Centre for Archaeology). Both structures were, in their latest phases, constructed of limestone rubble and soil, whilst the lower contexts consisted only of stone. The monuments sealed thin buried soils developed on Carboniferous Limestone. Barrow 1 proved to be a complex monument, of several phases. An extensive series of samples was collected for palaeoecological analysis.

Methods

Nineteen samples were collected and processed specifically for analysis of molluscs following standard methods, by CAS staff (Evans 1972, 44). The samples showed little sign of intrusive material being present, though fibrous roots were noted in some samples. In sample 5173 (1004), (a disturbed superficial deposit), fibrous roots were abundant and beetle remains and uncharred fruits of *Cirsium* sp were present. In 5180 (2073: mound material), roots and sub-spherical melanised fungal sclerotia were common.

Following assessment, eight of these samples, all from well-sealed buried soils beneath the monument, were selected for analysis. They were fully sorted by Val Fryer under a binocular microscope at low power (Table 1). Samples from other contexts were not analysed: either they contained too few shells for analysis, were from the subsoil, or were from mound material, which is likely to have included re-worked derived shells of unknown origin and possibly intrusive recent shells. Shells were identified by comparison with the writer's reference collection and with reference to Evans (1972) and Kerney and Cameron (1979), from which ecological information has been taken. Taxa identified are listed in Table 2. Nomenclature and taxonomic order follows Kerney and Cameron (*ibid.*).

221 samples of shell extracted from bulk samples were also received for assessment. These had been sorted from 2 - 4mm and >4mm fractions of flots and residues. Hence they included only shell fragments from large species and adult snails, and were unsuitable for analysis. However, rapid scanning of these samples was thought worthwhile, in order to see whether any assemblages markedly different from those in samples taken specifically for mollusc analysis (Table 2) were present at the site. In fact, these samples proved to be very consistent in composition, including an identical range of larger species to the samples listed in Table 2. *Discus* and *Cepaea* were predominant, with *Helicigona*, *Oxychilus* and Clausiliidae.

In addition shell fragments >1mm from bulk samples 5028 (2001), 5070.9 (75502), 5106 (75502), 5111.1 (1055/1056), 5112 (2058) and 5115 (1082) were received. These again included predominantly *Discus*, with Clausiliidae (mostly very badly abraded and/or apical fragments) and *Cepaea* whorl fragments and occasional apices.

Hand-collected material described as "marine mollusc shell" was also received for examination. (72050, 1004; 72072, 1011; 5090.1, 1058; 5083, 75502; 5107.2, 75502/03; 5070.14, 1052;

5068, 1019; 5089, 1052; 5103, 1057; 5026B, 1004). In all cases these were of fossil shell from the Carboniferous Limestone. The more complete and unabraded fragments were of productid brachiopods. They are assumed to be of local origin. There is a possibility that some of these fossils were intentionally placed, but further work on them is not thought necessary.

More puzzling were the objects separated and labelled as “slug plates” or “slug pellets”. These were present in 5070.9, common in 5106 and very abundant in 5111.1. The writer is confident that these were not the plates of limacid slugs, which they resembled superficially in size and form; but he is unable to identify them. Given that the one sample of unsorted residue received (from 5111.1) included abundant small limestone fragments, crinoid ossicles and other Carboniferous fossils, mostly mollusc/brachiopod shell fragments, his best guess is that these are some sort of Carboniferous Limestone fossil. They are unlikely to be of archaeological significance.

Shell preservation

Shell preservation was extremely variable. Some contexts included abundant well-preserved shells, but in others only weathered, pitted and perforated shells and fragments of large species were noted. In an attempt to examine this more rigorously, preservation of the commonest species – *Discus rotundatus* – was recorded in detail. Intact adult and sub-adult shells and those with more than two whorls were scored on a three-point scale, as follows.

1. Well-preserved shells. Striations sharp and unabraded; pigmentation usually present; surface glossy (though lacking periostracum).
2. Intermediate preservation. Striations variably abraded; pigmentation faint or lost; shell surface matt with some pitting.
3. Poor preservation. Striations lost or only patchily present; no pigmentation, or only very faint traces; shell surface very abraded with extensive pitting and some perforations; often very fragmented.

Any scoring system of this type is subjective, but the results obtained are believed to be, at least, consistent in their subjectivity. Results for assemblages with >30 shells whose preservation could be scored are given in Figure 1.

Discus shells from Barrow 1 mainly fell in the poor/intermediate category, whereas a higher proportion of those from Barrow 2 were well preserved.

Pyramidula rupestris

It seems that this species has not previously been reported from an archaeological context in England, so criteria for identification should be given. It has been identified here from the size of the apex (intermediate between *Discus rotundatus* and *Punctum pygmaeum*), the low conical form of the apex, its darkish brown coloration and, in more mature shells, the well-defined fine growth ridges which give the shell a silk-like texture. Its presence at this site is unsurprising, for today it is common in limestone regions, often occurring on dry, exposed rocks and walls.

Assemblage composition and local habitats

Buried soils from beneath Barrows 1 and 2 produced very similar mollusc shell assemblages, and it is thought that the two monuments were constructed in similar local habitats. The number of taxa identified is low, reflecting the high altitude, exposed situation and remoteness of the site from environments more congenial for most mollusc species. The assemblages are remarkably homogeneous in composition, dominated consistently by *Discus rotundatus*, with Zonitidae, Clausiliidae, *Pyramidula rupestris* and rare shells of *Ena obscura*, *Helicigona lapicida*, and *Cepaea hortensis*. Evans (1972, 287 and 308-310) includes samples of this general type in his group of 'limestone scree' faunas, composed of species commonly associated with woodland. In this situation, however, some species colonised shaded, moist cavities within limestone rubble, which mimicked woodland conditions (from a snail's point of view), whilst others were rupestral, living on rubble surfaces. Open conditions and stone-strewn surfaces are apparently indicated throughout. Some taxa characteristic today of such habitats were not recorded at Longstone Edge (e.g. *Abida secale*, *Lauria cylindracea*), and their absence does seem to be real, for the shell assemblages were scrutinised carefully to detect these species.

The only other published study of molluscs from a Derbyshire barrow is that by McMillan at Glebe Low, Great Longstone (Appendix II in Radley 1966). She found that a sample from the 'Bronze Age turf-line' included no shells, but a substantial shell assemblage came from a secondary burial. This was dominated by *Discus rotundatus* and *Vitrea contracta*, closely resembling assemblages from the present site.

References

Evans, J.G. 1972

Land snails in archaeology. Seminar Press: London.

Kerney, M.P. and Cameron, R.A.D. 1979.

A Field Guide to the Land Snails of Britain and North-West Europe. Collins: London.

Radley, J. 1966

Glebe Low, Great Longstone. *Derbyshire Archaeological Journal* **86**, 54-69.

Sample number	5147	5148	5155	5156	5158	5159	5151	5152
Barrow number	1	1	1	1	1	1	2	2
Mollusca								
<i>Pyramidula rupestris</i> (Draparnaud)	5		5	2	2		24	4
<i>Ena obscura</i> (Mueller)	2		1			1		
<i>Discus rotundatus</i> (Mueller)	170	14	31	38	42	182	188	84
<i>Vitrea contracta</i> (Westerlund)	10		9	5		1	11	7
<i>Vitrea sp.</i>	12	1	17	6	2		12	25
<i>Aegopinella nitidula</i>			5	3		7	15	
<i>Nesovitrea hammonis</i>	1							
<i>Oxychilus</i> sp(p)	8		4	5	3	3	5	9
<i>Zonitidae</i> indet.	12		3	2	6	5	6	5
Limacidae indet.							4	
<i>Clausilia bidentata</i> (Strom)	1							5
<i>Clausilia sp.</i>							1	
Clausiliidae indet.	7			2	2	2	1	
<i>Trichia hispida</i> (L)		1					2	4
<i>Helicigona lapicida</i> (L)				1	1	2	2	
<i>Cepaea hortensis</i> (Mueller)					1		1	
<i>Cepaea sp.</i>					1			
<i>Cepaea/Arianta spp.</i>	7	1	3	2	1	1	5	3
Unidentified apical fragments etc.	16	3	6	4		6	12	16
Vertebrata								
Small bone	xx	x	x	x	x	xx	xx	x
Bone fragments	xx	x		x	x	x	xx	x
Charred plant macrofossils								
Charcoal	x	x	x	x	x	x	x	x
<i>Corylus avellana</i> L. (nutshell)		x						
Fabaceae indet. cotyledon fragment		x						
Root?				x				
Tuber fragments								x
Sample weight (kg)	2	2	0.5	0.5	2	2	2	2

Table 2; Molluscs and other macrofossils from samples taken specifically for mollusc analysis.
x=present; xx=common.

Sample no.	Barrow no.	Context no.	Context type	Description (from sample sheets)
5147	1	1107	Buried soil, beneath wall of Barrow 1	Grey/dark brown sandy silt loam
5148	1	1108	Buried soil, beneath wall of Barrow 1	Light brown sandy loam
5151	2	1109	Buried soil, Barrow 2	Dark brown/grey silty sand loam
5152	2	1110	Buried soil, Barrow 2	Light brown sandy clay loam
5155	1	1103	Buried soil, within gap in enclosure wall but sealed by stone block	Dark brown silty sand loam
5156	1	1104	Buried soil, within gap in enclosure wall but sealed by stone block	Light to medium brown sandy clay loam
5158	1	1105	Buried soil, beneath wall of Barrow 1	Loose black humic silt loam
5159	1	1106	Buried soil, beneath wall of Barrow 1	Light brown sandy clay loam

Table 1: Contexts sampled specifically for mollusc analysis.