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LAND SNAILS FROM WHARRAM PERCY (Site 58)

by M J Allen

A large bulk soil sample from the deserted medieval village site at Wharram Percy was submitted to the Ancient Monuments Laboratory for analysis. The samples from Site 58(....) were sub-sampled and two, one kilogramme air-dried samples were analysed for their land molluscs.

The methods of mollusc analysis employed were basically those outlined in Evans (1972), the soil being washed through a stack of sieves of 5.6 mm, 2 mm, 1 mm and 0.5 mm mesh aperture. The molluscs were extracted under a x10 binocular microscope. The apices were identified and counted under a x10 to x50 magnification and the residues then weighed (Table 1). The nomenclature follows Waldén (1976). The molluscs were in a good state of preservation and a large percentage (an estimated 80%) were floated off leaving little to extract from the residues.

Due to problems encountered with breaking down the 'crumbs' of fine sediment with Hydrogen peroxide (H_2O_2) and the large number of molluscs present, only one sample was completely analysed. Both samples were from the same context and a duplicate was only analysed to provide information of replicating results from identical samples and therefore does not contribute to any of the interpretations given below. Cursory examination of the molluscs from the duplicate sample show a similar mollusc assemblage to those described here.

The results of the analysis are shown in Table 2 and as histograms of relative abundance (fig 1) in which each species is plotted as a percentage of the total individuals excluding the burrowing species Cecilioides acicula which is recorded as a percentage over and above the rest of the assemblage.

SEDIMENT

The sediment from which the molluscs were extracted contained a high percentage of fine material, over 80% of which passed through the finest mesh used (0.5 mm). The residues on the sieves were minimal (see Table 1) with the exception of the 5.6 mm mesh sieve which retained 13.67 g of material and comprised subrounded, with the occasional fragment of subangular, chalk nodules. A sample of 100 g air-dried soil $<$ 2 mm was also measured for its magnetic

Truncatellina cylindrica is a rare and local obligatory xerophilous species (Kerney and Cameron 1979) living in dry, exposed places (Ellis 1951). Truncatellina cylindrica has also been recorded from colluvial deposits in Sussex (Bell 1983) and plough-wash in a lynchet at Bishopstone (Thomas 1977) and so, has been associated with arable land.

Cochlicopa lubrica, which, though having fairly catholic habitats, is typical of chalk grassland (Chappell et al 1971) and it is likely, in view of the high percentage of xerophile species in this assemblage, that the Cochlicopa sp. are Cochlicopa lubrica rather than Cochlicopa lubricella (Porro) which favours moister micro-habitats.

Cepaea sp. and slugs such as Arionidae and Limacidae are catholic and therefore occur in a very wide range of habitats.

CONCLUSIONS

The land snail assemblage is dominated by open-country species (77.5%) of which over 80% are xerophiles favouring very dry open calcareous habitats. The assemblage described has a high xerophytic component and a property of xerophile faunas is that although the number of species may be low those that do survive may do so to a high degree (Evans 1972; 108), which can be crudely observed in the Wharram Percy assemblage. Such an assemblage is therefore indicative of either heavily grazed chalk downland or arable habitats. The latter seems likely in view of the abundance of Vallonia excentrica predominating over Vallonia costata and the presence of Trichia hispida, albeit only 12% of the assemblage. The presence of the obligatory xerophile Truncatellina cylindrica is also consistent with arable habitats. However Vertigo pygmaea is suggestive of stable environments such as pasture but as Evans (1972) states it is also known in environments which are frequently unstable. An arable context would only become unstable during, and immediately after, tillage. The magnetic susceptibility of the sample may also be suggestive of arable contexts as described in Allen (1983) who suggests that sediments on chalk lilthologies derived from ploughing and tillage from both modern and prehistoric contexts are in the range of 22 to 50 SI units $x10^{-8}$ m^3 kg^{-1}. This however is not yet a proven hypothesis.

The assemblage as a whole can be seen as one of an intensive agricultural context and most probably that of arable activity.

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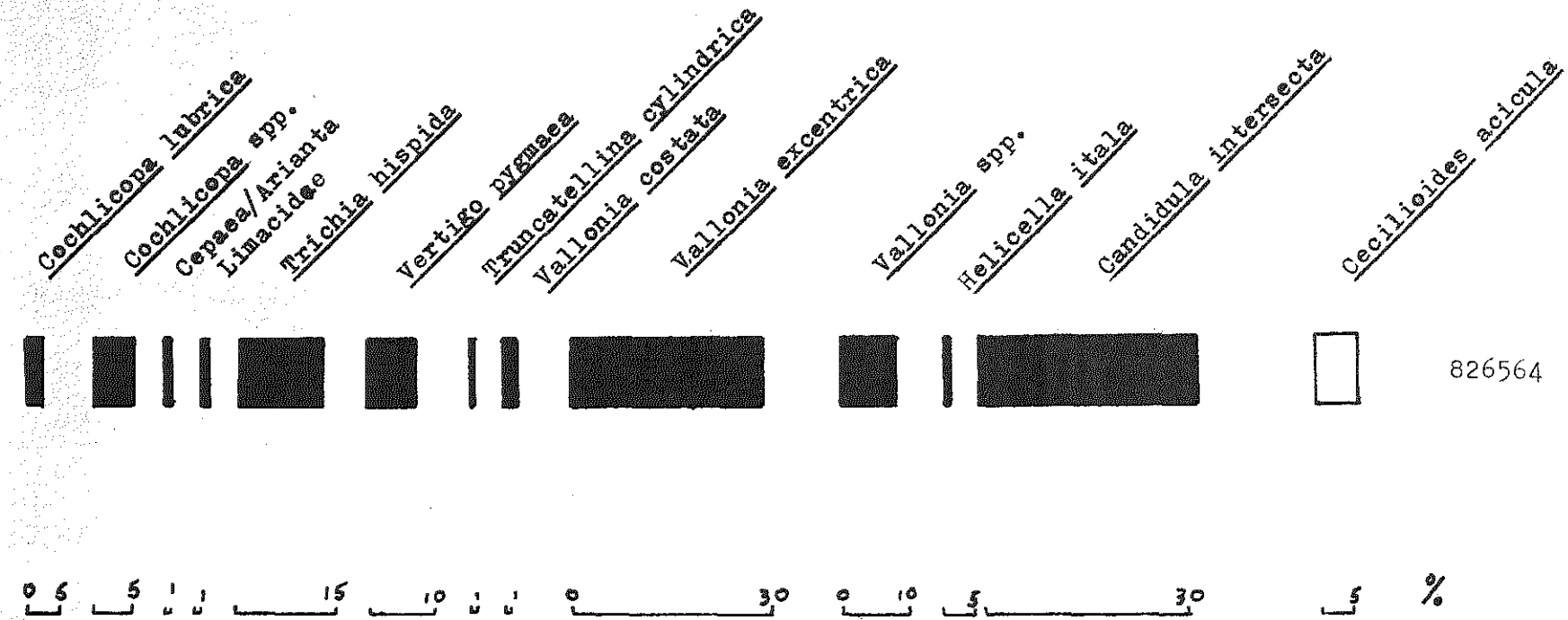
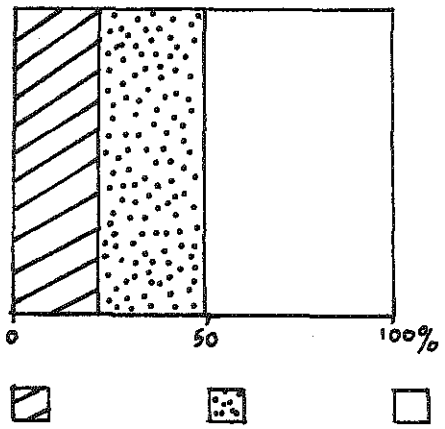
WHARRAM PERCY Figure 1

Sample / Mollusc	826564 site 58 1	
	No	%
Cochlicopa lubrica (Muller)	4	2·6
Cochlicopa spp.	8	5·3
Vertigo pygmaea (Draparnaud)	11	7·3
Truncatellina cylindrica (Ferussac)	1	0·7
Vallonia costata (Müller)	2	1·3
Vallonia excentrica Sterki	43	28·5
Vallonia spp.	11	7·3
Arionidae	+	+
Limacidae	2	1·3
Cecilioides acicula (Müller)	(9)	(5·6)
Candidula intersecta (Poiret)	48	31·7
Helicella itala (Linnaeus)	1	0·7
Trichia hispida (Linnaeus)	18	11·9
Cepaea/Arianta spp.	2	1·3
TOTAL*	151	
No. of TAXA	12	
% open country	77·5	
% catholic	22·5	
% shade-loving	—	

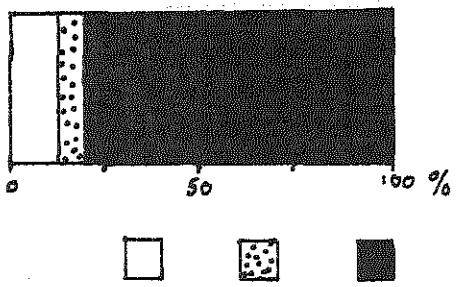
* Excluding C. acicula.





catholic open-country xerophilous

particle size distribution



>5.6mm 5.6-0.5mm <0.5mm