FWP29a

Chapter 8
ENVIRONMENTAL EVIDENCE
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8.1 - Introduction

So far this book has presented the evidence for human impact on the landscape by studying the structures and artefacts which remain. However, since Mesolithic times people have also changed the physical form of the landscape around them. This is particularly apparent in the 4th millennium BC with the beginnings of farming. Land was cleared for crops and grazing, while new breeds of animals and plants were introduced and exploited. The evidence for this increased domination of the landscape can be seen throughout Wessex with the building of causeway enclosures and long barrows in the third millennium. As the Neolithic progressed so the scale of the monuments increased, sites such as Silbury Hill epitomise this dramatic and permanent reconstruction of the physical world. On Fyfield and Overton Downs the preserved landscape is later in time than many of the monuments and fulfils a different purpose. Here the slopes are laid out in field systems and settlement enclosures, monuments in themselves but to a more apparently practical end. However, Fyfield and Overton saw just as dramatic episodes of landscape change as the sites around Durrington Walls or Stonehenge; there the clearing and cultivation of large tracts of downland exposed alien aspects which we now take for granted. Using this approach it seems reasonable to present the farming landscape as having as much of a determining role in social life as the monuments which are so frequently studied. This chapter uses the environmental evidence gathered as part of the project to approach the study of the landscape in this very way.

To begin it is necessary answer the basic questions of the evidence we have available. For example, what did the landscape in which these farmers lived look like? What evidence do we have for that landscape changing through time? And what animals and plants were exploited? Only with these answers is it possible to understand the extent to which the environment played a determining factor in human social development and change. Therefore, the environmental evidence will not just reconstruct the landscape it will also help us to develop an economic framework for human social change.

8.2 - The evidence

The evidence in this section has been divided between animal bones, mollusca, and charred remains. Much of the data comes from specifically archaeological sites and is therefore bias towards direct human influence. Consideration of the 'offsite' analysis carried out along the West Kennet Valley by John Evans (1993) and over a much wider area by Michael Allen (199?) is included in the final section and helps to balance the interpretation.

Animal bones

The three site excavations which have been reported in full in the earlier chapters have provided all of the animal bones which are discussed below. Much of the material appears to be butchery waste either found in pits around the settlements or distributed through the occupation layers. The use of manual recovery methods meant that not all the material was found and our picture is therefore slightly blurred by this archaeological bias. Differential preservation is also a factor: many of the bones were fragmentary and as result may well have been lost, a point emphasised by the large proportion of animals identified solely by their teeth. Analysis of the animal bones was carried out by Barbara Noddle in the 1970's and has since been revised by Michael Allen. Her report looked at five aspects of the bone evidence: proportion of fragments of bone per species; the minimum number of individuals represented; the proportion each species made up of the total represented; the proportion of certain anatomical fragments; and, where possible, the estimated age of individuals. A summary of Noddle's finding can be found in Appendix/microfiche etc.. This section will set out some of the main results and offer an initial interpretation of their significance in its local context.

Overton Down X/XI: Early Iron Age settlement and enclosure

Excavation within the enclosure produced a large quantity of both wild and domestic animal bones. The main species found on the site were cattle, sheep/goat, pig, and horse; sheep and goat are difficult to recognise separately and have been counted together. Other less well represented animals included red and roe deer, cat, dog, small mammal and amphibians. Sheep bones were the most common bones found (at least 30 individuals), cattle were next (22), followed by pig (14) and finally horse (8).

	cattle	**sheep/ goat**	**pig**	**horse**	**deer**	**other**	**total**
fragments	377 (38%)	411 (42%)	75 (8%)	81 (8%)	no record	42 (4%)	986
MNI	22 (25%)	30 (34%)	14 (16%)	8 (9%)	red 2 roe 3 (6%)	9 (10 %)	--------
% of mature indiv.	40%	29%	33%	70%	----------	----------	--------

Table 8.11 - table showing numbers and percentages of: fragments, minimum number of individuals (MNI), and mature individuals (over 4 years), for the bones examined from Overton Down site X/XI.

Skeletal part analysis revealed specific differences between the species. Sheep were represented by a high proportion of waste parts while for cattle and pigs most of the skeleton was represented. Cattle and sheep were notable in that no phalanges (foot bones) were present, it is likely that these were removed with the skins. Another explanation may be that because of their small size they did not survive or were not recovered.

The proportion of mature animals (over four years old) was measured. Sheep, cattle and pigs all had similar figures between 30 and 40%. Horses were unusual in that 70% of the individuals identified were over four years old at the age of death. These figures are significant in that it is clear horses were kept for their working ability and it is unlikely they represent a stable meat supply. Sheep and pigs, on the other hand, constituted a much larger number of young individuals, thus it is more likely they were exploited for their meat. Cattle, of which 40% were mature, may have been kept for their milk. Evidence for milk exploitation has been found at middle and late Bronze Age sites on the Marlborough Downs (????????? in Gingell 1992), and it should not be surprising that Iron Age groups followed a similar economy.

Aside from the major domesticated species present their were bones from both dogs and cats. The dogs were certainly domesticated, the first domestic examples having appeared in the early Mesolithic (Star Carr? Legge and Rowley-Conwy). The bones of two individuals were found, each the size of a modern alsation. In contrast the cats may not have been domesticated, possible domestics found at the Iron Age site of Gussage All Saints (????) are not certain, and the bones found at Overton were large enough to be from wild species.

The deer bones found certainly represent the exploitation of wild animals. The extent of that exploitation is not clear since there is no skeletal part information available, the carcasses could well have been scavenged or the animals killed because they were feeding off valuable pasture. Small mammals and amphibians were also an important component of pit fills, their presence is likely a result of accidental pit fall rather than as a source of food (King and Fowler ????). The range of animals present was typical of open downland pasture and fields with weasel, short-tailed vole, water vole, harvest mouse, frog and toad all present.

Spatial patterning, i.e. specific ditch fills = butchery episodes or ritual behaviour?
A number of pit fills were treated as distinct units and their composition may give a good indication of short-term 'individual' actions. A summary of each ditch fill in 10pt script along with an interpretation suggesting either ritual activity or butchery episodes. Since this is the only data on spatial patterning we have from the site it may be useful to add it. As far as environmental significance, it could be argued that each pit shows the remains from one

feasting session, possibly relating this to Barrett/Bradley/Green model from Cranbourne Chase on the importance of feasting in EIA society?

Overton Down XII: Romano-British settlement
A total of 3,133 bones were examined by Barabara Noddle from the Romano-British site. A very similar range of species were present as at the prehistoric site and similar calculations were made with the data, comparisons between the sites are discussed below. It is possible to recognise equal problems of preservation and recovery as were present at Overton Down X/XI. Teeth were by far the most common surviving fragments, particularly from sheep where they represented 70-90% of the sample.

	cattle	**sheep /goat**	**pig**	**horse**	**deer**	**other**	**total**
fragments	780 (25%)	1700 (54%)	272 (9%)	269 (9%)	no record	112 (4%)	3133
MNI	35 (13%)	141 (50%)	36 (13%)	21 (8%)	red 6 roe 5 (4%)	36 (13%)	----------
% of mature indiv.	26%	51%	25%	48%	----------	----------	----------

Table 8.12 - table showing numbers and percentages of: fragments, minimum number of individuals (MNI), and mature individuals (over 4 years), for the bones examined from Overton Down site XII.

The percentage of total individuals was dominated by sheep (50%, 141 individuals). Cattle and pig were roughly equal (13%), while horses made up a further 8%. Less common domestic animals included dogs and birds. Wild animals were also found, these were red and roe deer, wild pig, hare, rabbit, small mammals and amphibians.

Skeletal part analysis was carried out on the cattle and sheep remains, the results showed a consistent dominance of waste parts. The absence of meatier parts is not unusual and may simply be due to the utilised bones being discarded in a separate, unexcavated, area, possibly after a further butchery process. The high survival of teeth may simply indicate that conditions for preservation were poor. Of more importance may be the greater degree of fragmentation carried out on the cattle remains. One possibility for this may be that they were intensively butchered in contrast to the sheep which were kept for their secondary products. This interpretation is supported by the contrasting proportions of mature individuals from the cattle and sheep.

Only 26% of the cattle were over four years old while sheep had a much higher figure of 51%, similar to that of horse. Pigs were represented by 25% of mature individuals, similar to that for cattle. More detailed information was available for the cattle than other animals, in that the majority of animals were killed in the second autumn. This may indicate killing to preserve a milk stock or a desire for younger meat. Of the sheep which did not reach maturity

some were in their first year while a similar number were in their second or third autumn.

Less common domestic species seven dogs, one of which was a puppy. At least one of the dogs was Alsation sized and may be comparable with the bones found at Overton Down X/XI. Bird bones found on the site have been identified as coming from domestic fowl. At least two individuals were represented.

There were a quantity of wild bones recovered including six red deer, five roe deer, wild pig, hare and rabbit. Small mammals and amphibians were also an important component of pit fills, their presence is likely a result of accidental pit fall rather than as a source of food (King and Fowler ????). The range of animals present was typical of open downland pasture and fields with short-tailed vole, water vole and frog.

The slightly miscellaneous category of 'marine shells' needs to be added to the faunal assemblage from this excavation. 54 oyster shells were found, representing the remains of at lest 51 individuals. They were in a fragmented and worn condition and it seems unlikely that they formed any substantial dietary component. Their presence is more important in emphasising the likelihood that inland settlement did not involve any form of enforced isolation. Whether the shells were recovered during a trip to the coast or were brought by an outsider cannot be shown but it is clear the farmers knew of a much wider world than their local downlands. **May be shell temper for pottery??**

Wroughton Copse: medieval farmstead
A total of 2536 bones were examined from the excavations at Wroughton Copse. The materials comes from contexts which span prehistoric, medieval, and 17th century occupation. The majority of the assemblage (2297 bones) come from the main 13th century occupation of the site. Cattle, sheep, pig and horse make up most of the domestic animals. While wild animals are represented by the bones of deer, hare, rabbit and bird. Three fish bones were found in a 17th century deposit. The following summary of the results refers to the 13th century occupation unless otherwise stated.

Table showing results to be got from TWA disk!!!

The assemblage is dominated by sheep bones, a minimum of 255 individuals were represented. Cattle are the next most numerous (70 individuals) followed by pig (30) and horse (23). The cattle, sheep and pig are represented by a large percentage of 1st class joints' (trunk and upper limb). This is particularly obvious with the cattle bones which is made up of 70% 1st class joints. This distinction presumably indicates the bovine herd was kept for its meat. This interpretation is supported by the percentage of mature individuals found in the cattle remains. Only 22-34% were over four years old in contrast to the sheep who had a 30-56% proportion of mature individuals. The deviation between these results is large and does not preclude the use of cattle for milk or by implication sheep for meat.

Other domestic animals bones found included the remains of dog (14 individuals), goat (48) and domestic fowl (cock, duck, and goose). The small number of surviving bird bones may imply that few were kept and eaten or that the small bones were not preserved or recovered.

Wild animals made up a small proportion of the remains identified. They included roe deer (1 individual), red deer (1), fallow deer (1), hare (2) and rabbit (22). No small mammal or amphibian bones were identified in the report. Fish bones identified from the 17th century deposit were gadoid (*Gadidae*).

Discussion

Mollusca

Land snails offer a further source of primary faunal evidence, their importance is not in hinting at past economies but at reconstructing past landscapes. The reason for their value is due to their to their preference for specific micro-environments. Some species may prefer wet, shaded ground while another may only live in dry, short grassland. When this is combined with the robustness of their shells it becomes clear they are an excellent environmental indicator. Excavations on Fyfield and Overton Down have produced stratified prehistoric soil samples from which mollusca were extracted and counted. The results have helped to present a picture of the landscape at the time the deposits were laid. Such an approach does not hold all the answers and any results have to be treated with a certain scepticism. For example, what scale of environment are the snails reacting to? In a ditch fill this may be no more than the area of the ditch. However, if treated cautiously, as with the animal bone evidence, we can begin to reconstruct the environment in which the people of Fyfield and Overton lived in.

Our unpublished primary evidence comes from two sites: Overton Down X and Piggledean Bottom. Earlier work by John Evans on lynchets from the area have been published (1972) and will only be summarised. The samples from Overton Down X were taken at the time of the excavation and examined recently by Sarah Wyles. The results of her report can be found in full in Appendix/microfiche/archive.

Overton Down X: fill from Early Iron Age enclosure ditch

The soil samples from Overton Down X were taken from cutting 15, this lay on the southern edge of ditch circuit, downslope of the main settlement. The ditch revealed a stratigraphy common through much of its length, at cutting 15 it was divided into 10 layers. Of these layers 8 produced samples of snails from which an environmental sequence could be built up. To understand the sequence more clearly the deposits were divided into three phases: primary, secondary, and tertiary (Evans 1972, ???). A further phase, soil, has been suggested from other ditch fills (Evans 1990, ??) and is also present in cutting 15 (layer 4?) however, this did not produce adequate samples for testing (or was not sampled??). The primary layer forms almost immediately after the

ditch has been dug, and certainly with in the first few years of exposure. It is at this stage that the sides and top of the feature are at their most unstable, causing a rapid but short lived erosion into the bottom of the ditch. This has been observed more recently at the Overton Down Experimental Earthwork (?????). There a short stretch of bank and ditch was dug into the chalk, the resulting manmade environment was monitored by numerous specialists examining the regeneration of the local ecosystem, as well as by archaeologists who observed the changing morphology of the feature and the action of artefacts buried within its stratigraphy. The primary layer confirmed by this work has been shown to give a good indication of the environment into which the ditch was dug. The secondary fill forms over a much longer period of time and represents the much slower accumulation of material formed during the life of the ditch. The quantity, rate of deposition, and composition of this fill will vary considerably from site to site. The ditch at cutting 15 showed a clear but apparently gradual sequence of deposition with at least one layer of soil stability when a turf line was able to form (layer 4). The mollusca sampled from this secondary deposit give an indication of the environment in and in close proximity to the ditch, they may also relate to the any more specific use of the feature. Following this secondary deposit comes the tertiary fill. This represents the final overlaying of the ditch by later activity. At Overton Down X this occurs when the ditch is ploughed over and the boundary is no longer observed. The molluscs found in the tertiary deposit give a good indication of later land use. The use of ploughing over the ditch during this period causes mixing of the deposits and may disturb the secondary fill, at Overton this does not appear to be the case.

Ditch fill	**Context number**	**Description**
Tertiary fill		
0 - 0.15m	1	Brown humus with few flints in top of enclosure ditch fill. Plough soil
0.15 - 0.31m	2	Brown humus with common flints in top of enclosure ditch fill. Plough soil.
0.31 - 0.55m	3	Brown Humus with few flints in top of enclosure ditch fill. Plough soil.
Secondary fill		
0.55 - 0.66m	4	soil, chalk lumps and flints.
0.66 - 0.82m	5	light brown soil with flint and chalk flakes
0.82 - 1.03m	6	soil with few chalk and flint inclusions. Stabilisation.
1.03 - 1.13m	7	Fine light brown chalky soil with common chalk and flint inclusions
1.13 - 1.32m	8	fine light brown chalk soil with large flint inclusions
Primary fill		
1.32 - 1.56m	9	soil with frequent flint and chalk inclusions. Stabilisation.
1.56 - 1.76m	10	Soil with very frequent chalk inclusions, common flint inclusions and decomposed natural.

Table 8.21 - A description of the layers identified from ditch 15, Overton Down site X/XI.

The examination of the deposits by Sarah Wyles provided a great deal of information about the environmental sequence during the use-life of the ditch. A histogram of relative abundance of the different species (fig $$) shows how the balance has changed through time. The primary fill is dominated by open country species, characteristic of established grassland. Shade-loving species are present (10%) and this may indicate that there was wood or scrub close by when the ditch was dug. Further information can be gained if the numbers of molluscs counted and the variety of species present are counted from different layers. A high mollusc count suggests stability while a diverse range of species may indicate a mixing of deposits and instability. Layer 9, at the top of the primary deposits, shows just such a high mollusc count and a low diversity index. This may indicate a period of stability before the secondary erosion took place.

The secondary fill sees a decline in the numbers of shade loving mollusca. More specifically, an area of short tufted grassland was present at the time the secondary fill developed. The presence of one species in particular (*Pubilla muscorum*) indicates there were areas of broken ground close by. This may indicate trampling by livestock or disturbance within the ditch itself. This interpretation only identifies general trends in the mollusc sequence, the true picture is much more diverse. For example, the presence of *Trichia hispada*, a species which favours humid closed vegetation, shows how the local area would have been made up of a diverse range of micro-environments. As with the primary fill there are periods of apparent stability in the secondary deposits. These occur towards the top of the deposit with the formation of the turf line. This may indicate a period of abandonment of the site, or simply that activity did not occur close to the feature. The later explanation is more likely since the mollusc sequence does not show any evidence for vegetation regeneration, indicating the area was probably still grazed by livestock.

The tertiary fill forms a clear break from this stability. There is a virtual absence of shade loving species combined with an increase in mollusc typical of arable context. The new land use does not observe the line of the ditch and its profile is lost under the plough soil. The increase in arable indicators does not preclude arable activity from earlier in the site's history, it is only during the tertiary fills that cultivation occurs on top of the ditch and therefore ensures it is represented in the mollusc sequence.

	Primary Fill		**Secondary Fill**				**Tertiary Fill**	
Context	10	9	8	7	6	5	3	2
Depth (m)	1.76 - 1.56	1.56 - 1.32	1.32 - 1.13	1.13 - 1.03	1.03 - 0.82	0.82- 0.66	0.55 - 0.31	0.31 - 0.15
Weight (g)								
MOLLUSCA								
Pomatias elegans (Müller)	2	+	-	+	+	1	+	+
Carychium tridentatum (Risso)	1	-	-	-	-	-	-	-
Cochlicopa spp.	-	8	-	-	1	4	-	-
Vertigo pygmaea (Drapamaud)	1	-	1	3	8	26	-	2
Vertigo spp.	-	-	-	2	3	14	2	-
Pupilla muscorum (Linnaeus)	1	4	14	31	51	116	6	6
Vallonia costata (Müller)	18	121	32	22	58	73	29	28

Vallonia excentrica (Sterki)	11	40	14	24	28	99	29	46
Vallonia spp.	6	9	7	3	6	10	5	5
Punctum pygmaeum (Draparnaud)	1	5	1	1	8	4	-	1
Discus rotundatus (Müller)	+	1	-	+	-	+	-	-
Vitrina pellucida (Müller)	1	4	-	-	1	-	-	-
Aegopinella pura (Alder)	1	1	-	-	-	-	-	-
Aegopinella nitidula (Draparnaud)	2	4	1	1	-	-	-	-
Oxychilus cellarius (Müller)	1	18	4	2	4	2	2	-
Limacidae	7	25	16	9	14	18	12	21
Cecilioides acicula (Müller)	-	-	-	-	-	1	-	1
Clausilia bidentata (Ström)	2	10	+	1	1	1	+	-
Helicella itala (Linnaeus)	7	10	16	18	18	56	26	12
Trichia hispida (Linnaeus)	23	160	32	26	96	125	24	36
Cepaea/*Arianta* spp.	+	2	+	1	-	1	-	1
Taxa	15	15	10	13	15	14	8	9
Shannon Index	2.18	1.82	2.00	2.08	1.96	2.02	1.88	1.82
Total	85	422	138	144	297	550	135	158

Table 8.22 - molluscs from Overton Down site X/XI.

Overton Down XI/b and Fyfield I: lynchets

Having shown two contrasting forms of evidence it is necessary to return to archaeological samples. At roughly the same time at the ditch samples discussed above were taken, further samples were taken from sections taken through lynchets. These were examined and interpreted by John Evans (Fowler and Evans 1967, Evans 1972). The deposition sequence found in lynchet deposits has three recognisable stages, as with ditch fills. The first is the buried land surface which existed before the lynchet began to form. This layer will preserve details of the pre-lynchet environment. Second is the lynchet itself; here the land use which went to create the feature will be represented in the mollusc assemblage. Third, and finally, there is the modern soil and turf, reflecting the environment which developed once the lynchet fell out of use. Clearly the presence of a buried land surface (layer 1) and the deposit formed through extended land use (layer 2) are vital in interpreting local environmental sequences.

The sequence at Overton Down was heavily disturbed by later activity on the site, this caused mixing of the layers. Molluscs throughout the profile were dominated by open country species. In contrast, Fyfield I produced a clear stratigraphy with sufficient molluscs to construct an environmental sequence. The preserved land surface was dominated by shade-loving species, while within the lynchet open country varieties were prevalent. The modern turf line had a similar mollusca content to that found at Overton Down XI/b. Clearly the lynchet was formed in an open country environment which had been cleared just prior to its use. That landscape remained open throughout the lynchet's further growth up until the present day.

Again the mollusca sequence is found in an archaeological context and is representative only of the local area. To have a wider understanding of the changing landscape it is necessary to appreciate other evidence which may affect a more general interpretation. The following discussion attempts to place our sites in a wider sequence of mollusc evidence.

Piggledean Bottom: dry valley

The mollusc sequence described above came from a direct archaeological context, it should be of little surprise that the species present were indicative of cleared grassland. "Off site" analysis is potentially more useful in establishing to what extent farmers cleared the land around their settlements, therefore, widening our window with which to view past landscapes. This approach has been followed most recently by Michael Allen (PhD) and separately by John Evans (1993). The latter's work has concentrated in the Upper Kennet Valley and has a direct relevance to the data recovered from the slopes, this shall be discussed below. Allen covered a much wider region but is not directly relevant to our local situation. One exception is are series of cores taken from Piggledean Bottom in the late 1980's. This has not been published elsewhere and for that reason is included in full here.

Depth	Layer	Description
0 - 370mm	*Brown rendzina*	dark brown (7.5YR 3/2) silty clay loam topsoil, few very small and small chalk pieces
370 - 580mm	*Upper colluvium*	yellowish brown (10YR 5/6) silty clay with many small chalk pieces, becoming darker with depth and less calcerous
580 - 800mm	*Lower colluvium*	dark yellowish brown (10YR 4/4) fewer chalk pieces, stiffer and becoming moister with depth
800 - 950mm	*Beaker horizon*	dark brown (10YR 3/3) silty clay loam, almost stone free, some charcoal flecks and occasional small pieces (*Pomoidea* and *Corylus* identified J Ede), pottery
950 - 1380mm	*Basal deposits*	dark brown (7.5YR 4/4) becoming reddish brown (5YR 4/4) with depth, silty clay
1380mm	*Stone*	sarsen

Table 8.23 - sequence of deposits from Piggledean Bottom (Allen *pers comm*).

Cores were taken from four sites along the valley. Two of these reached stone after only 0.4-0.6m down, while a third revealed a brown rendzina over chalk, a typical chalkland sequence. The fourth core was of more interest in that it revealed a sequence of colluvial deposits overlying a possible buried and surface. A much larger core was then taken which produced sherds of pottery from the buried land horizon. The pottery was identified as being beaker ware, two of the larger sherds having rectangular toothed comb impressions and a possible chevron. Molluscs were recovered from the Beaker horizon and from the underlying basal deposits, thus giving a sequence of before and during anthropogenic influence. The basal deposit had a small and poorly preserved assemblage dominated by species which favoured a woodland habitat. In contrast the beaker horizon had a larger and better preserved assemblage. The species present were characteristic of open country, with dry, short grazed or trampled grassland. Magnetic susceptibility readings were also taken of the deposits. The beaker horizon gave a much higher reading, characteristic of a buried soil, possibly supporting short grassland. The deposits which overlay these horizons was

made up of colluvium which had sealed the beaker occupation. The presence of localised colluvium is not unusual in the area and its importance is discussed more fully below (section 8.4).

	Basal Deposit	Beaker horizon
Depth (cm)	110-120	80-95
Weight (g)	273	428
MOLLUSCA		
Pomatius elegans (Müller)	4	-
Carychium spp.	3	-
Vertigo Pygmaea (Draparnaud)	-	1
Pubilla muscorum (Linnaeus)	-	4
Vallonia costata (Müller)	7	18
Vallonia excentrica (Sterki)	-	12
Acanthinula aculeata (Müller)	-	1
Discus rotundatus (Müller)	6	+
Clausilia bidentata (Ström)	1	-
Helicella itala (Linnaeus)	-	3
Trichia hispida (Linnaeus)	-	8
Molluscs per kilogram	49	172
Total	21	47
Magnetic susceptibility ($x10^{-8}$ SI/Kg)	13	53

Table 8.24 - molluscs from Piggledean Bottom (Allen *pers comm*).

The Piggledean Bottom core demonstrates not only that colluvium exists but that it effectively buried archaeological features, distorting our view of the extent of land use in the valleys. The indications of land clearance during the Early Bronze Age is not unusual and when compared to evidence from elsewhere fits well into the local sequence (see 'discussion', below).

Discussion

The scale of the environment which molluscs react to is small and assemblages will include shells from both close by and the wider area (Evans 1993, 159). Alasdair Whittle's sampling from the Easton long barrow showed how the mollusc samples within ??m of each other could indicate marginally different environment conditions (Whittle *et al* 1993, ??). The samples taken from the Overton Fyfield Down sites reflect an archaeologically selective sampling strategy as opposed to one directed at obtaining a good environmental picture. However the sites do not stand alone, it is possible to compare a number of similar assemblages in the area along with Evans' recent work in the valley to help understand the diversity of local environmental change. [Theoretically this approach leaves a lot to be desired i.e. we are taking a series of samples each reflecting the environment within about $10m^2$ and producing a model for an area hundreds of times that size. We can therefore make no firm conclusion and it may be more theoretically sound to concentrate on the site environmental history rather than attempting any kind of answer for the whole of the Downs, including the valley. Lets not forget that Evans is suspicious of the link between colluvium/alluvium and cultivation. Not that the link does not exist, it does, just that the two actions are not directly proportional].

Local samples come from prehistoric pit near roman tombs next to Ridgeway (Smith and Simpson 1964), and round barrow on Overton Hill (Smith and Simpson 1966). The pit was located while excavations were taking place at the site of three Roman tombs. The pit was 0.5m deep and just under 1m in diameter. The fill included animal bones from ox, sheep/goat and dog; struck flints; and 20 sherds of Peterborough Ware. A mollusc sample from the pit fill showed the presence of *Helicella itala*, *Discus rotundatus*, and *Arianta arbustorum*, with the later being the most dominant. The assemblage reflect species found in a diverse range of habitats, including a shaded environment, open country, and wet thick vegetation (Evans 1972). This may indicate disturbance of the upper layers of the pit or that the Late Neolithic environment was indeed locally diverse, ranging from dry pasture to woodland. In contrast a round barrow excavated on Overton Hill revealed a mollusc sample characteristic of an open dry grassland environment (Smith and Simpson 1966, 142). Combined with the evidence recovered from Fyfield and Overton it is clear the picture is fragmentary, however, we may add a substantial body of data from the Kennet Valley (Evans et al 1993).

Evans et al study examined valley deposits in the area of Avebury and West Overton along the valley of the Winterbourne and the Upper Kennet. The methodologies included strste.., mollusc sampling, and excavation revealing archaeological features. The mollusc sequences revealed the complex series of vegetation changes which affected the valley floor. These included flooding, clearance, cultivation, and woodland regeneration. [Therefore there were trees etc.. in the valley for part of our period and may be a source of the charcoal found on a number of the sites]. This valley evidence which is predominately of a geomorphological nature is useful in comparing the sequence of vents which are discovered above with those which went on below.

Charred remains

Charcoal and burnt hazelnuts make up a small proportion of the recorded finds from the main excavations. They are important not just as good dating evidence but also to help reconstruct the surrounding environment. This approach was used by the late Bob Smith (198?) during his work in the Avebury area. Essentially, specific species of tree reflect particular wood or scrub conditions. For example, oak is indicative of well established woodland, while thorn scrub indicates regeneration of cleared land (*ibid*, ??). Using such an approach it is possible to build up a picture of the resources which were in easy reach of the settlement without pinpointing them spatially. The charcoal from the Fyfield and Overton sites was identified by Rowena Gale; her full report can be found in archive/microfiche/appendix.

Overton Down X/XI: Early Iron Age enclosure and settlement

The remains from Overton Down X/XI were from post holes and pit fills. The plants from which the charcoal originated included maple, hazel, ash, oak, Pomoideae (may be hawthorne, apple, pear, rowan, whitebeam, or wild service), and *Prunnus* spp. (wild cherry, bird cherry, or blackthorn). The diversity of species indicates a number of woodland types were available.

There are primary woodland species such as oak along with thornscrub, more characteristic of regenerating ground.

Overton Down XII: Romano-British settlement
Three samples of charcoal were recovered for identification, showing a slightly more restricted taxa list than Overton Down X/XI. The results indicated the presence of hazel, ash, oak, elm, and *Prunnus* spp. (see above).

Wroughton Copse: medieval farmstead
Charred hazelnuts (identified by Michael Allen, see archive/appendix/microfiche) were present along with the charcoal. The charcoal consisted of hazel, ash, oak, elder, elm Pomoideae and *Prunnus* spp. (see above). The hazelnut remains consisted of one burnt nut and a few charred fragments. Their presence is not unusual although their use as a food stable is unlikely considering their low calorific yield (Rowley-Conwy 1994).

Discussion
Charcoal is not an unusual find and aside from its dating potential it is possible to indicate the types of woodland found in closer proximity to the site. A comparison of the results from the sites shows very little differences. A stable woodland environment of oak, hazel, ash, and possibly ample or elm, was available. Its location in what appears to have been a well cleared landscape may lie to the south of the valley or on areas of marginal land, either on the clay with flints or the wetter valley bottoms. The possible presence of thorn scrub on all three sites again emphasises the likelihood that land was continually in a process of regeneration through clearance.

8.3 - Summary and discussion

SUMMARY??

The environmental evidence to be considered in this final discussion includes animal bones, mollusca, charred remains, local geomorphology and archaeological data. The aim is to create an animated landscape within which the social dynamics of feelings and motives can be added in the later chapters. The framework for this discussion is essentially chronological using standard archaeological periods, this offers both convenience and an all too necessary flexibility. The interpretation is aimed at determining to what extent the landscape of the study area was exploited by humans and in contrast, acted as a restriction upon human action.

Evidence for human occupation of the area exists from the Mesolithic but it is not represented in our study area (??). Work on the Mesolithic environment has confirmed that by 8500 BP the region was most likely totally wooded (Evans et al 1993, + others). The extent of clearance episodes during this period is disputed with opinions varying between there being no evidence for clearance (op cit.) and episodic clearance being widespread (Smith 198? PPS?). Elsewhere in Britain and Ireland Mesolithic clearance is an accepted

reality, particularly as a contribution to the "elm decline" (???). Without widespread evidence for lithic sites on the uplands it is not possible to indicate any precedence for clearance episodes until the early Neolithic. Mesolithic studies have continuously looked more towards human exploitation and manipulation of land as a resource long before the adoption of farming (Rowley-Conwy 1994, Gillman ????). Our data does not allow us to test such a model and it would appear that if there was an environmental impact through clearing of land then its effect was minimal.

As with the Mesolithic, the Early Neolithic evidence is sparse on Overton and Fyfield Downs (a couple of the flints?? axe-polisher?). Initial clearance in the area may be associated with the silt formation found along the Kennet Valley associated with the Avebury Soil which had a radiocarbon date for its earliest formation of 4040 $\pm$ 60 BP (Evans et al 1993, 186). Later mollusc sequences indicating clearance of woodland include Windmill Hill, Marsden, Durrington Walls, Horslip, Beckhampton Road, South Street, South Dorset Ridgeway, Burderop Down, Dorset Cursus, Maiden Castle, and Easton Down (Evans 1966, 1971, 1972; Ashbee, Smith, and Evans 1979; Woodward 1991; Allen 1992; Entwhistle and Bowden 1991, Evans *et al* 1988, and Whittle *et al* 1993). The extent of these clearance episodes is likely to have been small since the only evidence is from archaeological sites, extensive offsite analysis has not revealed evidence for major change until the Early Bronze Age (Allen 19??). The significance of this to Fyfield and Overton is possibly best represented by the alluvial deposits along the valley. It is known that woodland soils, once cleared, have a crumb texture which would have eroded very easily (Evans et al 1993) The effect of initial clearance could therefore have been drastic. Large rills appearing in the side of the hillside as heavy rain showers swept away the loose top soil. From this perspective it is unlikely that the quantity of alluvium reflects major clearance and it is just as possible to predict minor clearance producing major erosion problems. The importance of this control of the environment is impossible to gauge. The regeneration of many non-mortuary sites is known and the distinction between this and the regeneration of apparently more utilitarian sites where regeneration took place can be explained through differing concepts of spatial importance (Whittle et al 1993). Certainly the Dorset Cursus was allowed to return to a shaded environment (Entwhistle and Bowden 1991, 21), the linear, non-natural, form of the monument being lost by the encroaching vegetation. Had the monument lost its significance? Had people directed their energies to conserving their land? Again Fyfield and Overton do not appear to have been heavily occupied at around this period but the occurrence of soil in the valleys which may have originated on the hilltops may indicate a major loss of evidence for such activity. This exploitation and reorganisation of the landscape was subsequently restricted by the results of their efforts. Monuments restricted the amount of land and type of land available, while natural loss of soil meant fields and settlements were shifted as a result of the changing environmental conditions.

It is the Late Neolithic and Early Bronze Age when clearance makes its fullest impact upon Fyfield and Overton Downs. Although there are no direct sites Beaker pottery has been found under colluvium layers in dry valleys across

the region (Allen 19??) and in the local area (Allen pers comm and see above). While Late Neolithic/EBA flints have ben found during excvations at ... (Everton's flint report). Mollusc sequences from numerous monuments have confirmed this new or renewed clearance (Woodward 1991; Allen 1992; Entwhistle and Bowden 1991; Green 1973). The beaker burials from Overton Down XI demonstrate the use of the uplands during this period as do the quantities of beaker pottery found across much of the Marlborough Downs as surface scatters (Gingell 1992). This evidence may well include the use of land for arable such as at South Street and Red Shore (Ashbee et al 1979; Green 1973) but grazing land is also apparent in the mollusc record from ???. Archaeologically land exploitation is well documented from the Upper Kennet Valley. Rows of sarsens on the valley floor at West Overton may be the remains of field boundaries to prevent the widespread alluviation which was taking place (Evans et al 1993). Allen (1988) has demonstrated that the occurrence of colluvial episodes occurred across the south of England at this time, possibly relating to a major agricultural exploitation of the slopes. The impact of this exploitation was to degrade the soils which were being farmed and so encourage adaptation to the changing conditions. On the Marlborough Downs the establishment of field systems during the Middle Bronze Age (Gingell 1992) may be a reaction to the lose of soils on the slopes and the burial of settlements in the valleys. A number of sections through lynchets in FYFOD (???) have shown they had formed over small walls whose size precluded any use as a barrier to livestock. Aside from the possible tenurial significance the walls may result from a conscious decision to preserve the valuable soil. What ever the reason it is clear that human exploitation had a part to play in the fluvial degradation of the slopes and valleys. The archaeological evidence is again sparse much of no doubt lying under deposits in the valleys having either slipped down the slopes or been buried in situ. There is a contrast, therefore, between the cleared landscape within which the enclosure ditch of ODXI was dug and the recently cleared woodland over which the lynchet at FLI formed. This is a clear indication that it is not possible to speak of a wholly cleared landscape until certainly the build up of this lynchet. Gingell may well be correct in speaking of widespread clearance during the Beaker period. And Evans may also be right in suggesting much of the colluvium formed in the valleys occurred at this time. But the colluvium is not uniformly distributed and much of the archaeological evidence comes from surface scatters and a few burials on the slopes with buried sherds found in the valleys. The early Bronze can be seen as period of intensified agriculture but not as a uniform degradation of the landscape. In may be more tactical to suggest a minimalist landscape supporting a less intensified agriculture centred around particular sites (*but then why have we been so lucky in finding them, or have we. i.e. considering the quantity of Neolithic monuments and the paucity in settlement as with the EBA are we seeing a mobile economy which caused localised but intensive, and environmentally destructive, agriculture. For that very reason settlements are difficult to locate. The Later BA then sees a realisation of the practical importance of managing the land as opposed to exploiting it. Therefore, time is spent creating field systems and complex agricultural systems rather than building monuments to the dead and worshipping the sun, i.e. people now*

realise the sun and the earth are not the be all and end all, it is in fact man himself who has the power to succeed)

The later Bronze Age and the earliest Iron Age sees the first settlement excavations on Fyfield and Overton. The houses were placed in among an existing Celtic field system and it is fair to suspect a continuing use of that system. Other occupation exists across the Marlborough Downs in small settlements with their own surrounding field systems (Gingell 1992). It was suggested that these sites fitted into an economy based around the exploitation of cattle kept in the valleys, sheep from the higher slopes and arable land around the settlements themselves. No evidence of arable activity is connected with the mollusc sequence from Overton Down X, considering the enclosure lay around a settlement it is unlikely that arable activity would be represented. At the same site the small mammals and amphibians which had been trapped in pits were characteristic of open downland environments. A similar result is apparent from the lynchet assemblages. At FDI the lynchet is made up of species characteristic of an open environment lying over a land surface which preserved molluscs of a shaded environment. The creation of the lynchets saw the clearance of land (at what date?). Elsewhere mollusc sequences are characteristic of a cleared landscape: ???????????. This image of a full and thriving landscape is supported by the results from the valley survey. There the final deposits of the West Overton formation occurred by 2500 ± 70 BP (Evans et al 1993, 189). While archaeological evidence includes a Deverel-Rimbury cremation deposit dated to 3020 ± 70 BP and a sarsen structure dated to 2980 ± 100 BP. It is clear that activity was present in the valleys and has been revealed by only limited through only limited sampling. It seems fair then to project such settlement over a much wider area. The first phases of Overton Down XI are associated with Deverel-Rimbury pottery and may be contemporary with the occupation of West Overton Valley. However, as the activity on the slopes continues into the Iron Age the evidence from the valleys 'dries up'. The Iron Age and Roman period is not represented at either the Avebury or West Overton locations (Evans et al 1993). The lack of remains from this period seems to fit with models of this transitory period recognised elsewhere (Cunliffe ????). The environmental evidence for the end of colluvial and alluvial activity and the archaeological evidence for a shift in settlement pattern are in agreement.

Such a situation may result from a changing exploitation strategy. At Overton Down XI an economy based on the exploitation of sheep for meat and cattle for their milk is found at other sites known form the Early Iron Age: ???????????. Unfortunately the temporal context of the faunal material is not clear and we cannot define any particular phases of economic development. Elsewhere... Without indication of any continuation in the use of the field systems it is possible to propose an episodic use of the surrounding landscape. That is to say, the changing economic strategies identified at other sites can be combined with the evidence of a potentially wholly cleared landscape to emphasis the total contrast between the Early Bronze Age and the Early Iron Age. The occupation of the landscape may

therefore be one of continuation but the form of that occupation changed considerably.

By the period of the occupation of Overton Down XII the economy had shifted from one based around possibly equal exploitation of sheep and cattle to one concentrating on sheep, representing over 50% of the assemblage. Sheep can survive on a much poorer quality of land than cattle and this would suggest that the settlement evidence dominating by the slopes is indeed reflected by the faunal evidence which emphasises exploitation of the slopes also. Roman remains are almost non-existent in the valleys (Evans et al 1993) with the exception of the road and the possible villa site. This archaeological evidence can now be compared to the economy of the slopes where sheep were the dominant animal exploited and the archaeological evidence suggests dense and widespread landuse. The mollusc sequences from Overton Down X and Fyfield Down I show that arable activity was taking place as does the presence of large quantities of broken pottery spread on the fields presumably during manuring. Although this open landscape is well attested it must not be forgotten that charcoal was found on the site, albeit a more restricted taxa list than from the early Iron Age site. If, as has been proposed above, the economy was heavily managed then woodland would be no exception. COMPARE TO EVIDENCE FROM ELSEWHERE FOR A DECLINING BRITAIN AFTER THE LOSE OF ROMANISING INFLUENCE.

By the 13th-century, and the occupation of Wroughton Copse, it is possible to back up observations on the economy and environment by an expanding range of documentary material. A landscape dominated by tenurial boundaries and open fields can be envisaged. Ploughing of this period finally destroys the enclosure ditch of Overton Down X while the upper deposits on lynchets contain plenty of diagnostic medieval pottery. In the valleys he sediment cycle was stable enough to allow the development of a soil in a dry open environment (Evans et al 1993, ???). Radiocarbon dates for this phase indicate the development of this layer between AD 886-1275 calibrated. The economy of the Wroughton Copse settlement is again predominated by sheep. This is a practise still followed in the area and may well have its roots in at least the Roman period if not in the Iron Age with the building of hillforts. The exploitation at this time has reached a scale reminiscent of the later Bronze Age when farmers were managing the landscape as a fragile and depletable resource.

Throughout this environmentally based narrative it has been possible to observe a number of trends which have, at my own admission, given human agencies a solely adaptive role. Such an approach is under intense scrutiny since it assumes an ever optimising aim for those taking part in its processes (Shanks and Tilley ????). However, we must look realistically at the environment which has nurtured and helped direct the lifeways within it. The presence of exposed and rapidly eroding slopes forced individuals to move their settlements either from the valley when colluvium threatened or from the slopes when no soil remained to cultivate. The extent of soil cover in earlier prehistory is accepted as is the power with which it could come rushing down the hillside (Allen ????). It is naive to ignore this. The environment was a

social issue to those who lived on the downlands and we may legitimately interpret it as such. Field systems can be seen as a direct result of this increasing realisation that the land is a resources which must be managed. Its profits can no longer be exploited on the building of ostentatious monuments. Land now becomes more important than metal, not just because metal is scarce but because land is more vital. By the Roman period on Overton Down and by the Iron Age elsewhere the form of economy can be seen to be conforming to this changed environment. Sheep now dominate the faunal assemblage as groups who survive on the hills exploited the ground to its full without destroying it. Possibly the valleys remained too unstable to settle, evidenced by the first stable soil since the Bronze Age Avebury formation being in the Medieval period.