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Report 60/86

LAND MOLLUSCA AS EVIDENCE FOR THE ENVIRONMENTAL HISTORY OF EASTON LANE, HAMPSHIRE AND ITS DOWNLAND ENVIRONS.

M J Allen BSc

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Summary

The large multiperiod site at Easton Lane (SU 495304) adjacent to Winnal Down (Fasham 1985) is situated on the Middle Chalk Downland block to the east of Winchester.
The area was threatened by roadworks and was investigated during 1982-3 by P.Fasham and D.Whinney for the Trust For Wessex Archaeology and Winchester Archaeology Office respectively.
The site consisted of a plethora of archaeological features; ditches pits and postholes. This report deals with molluscan samples which have enabled the local environmental history from the later Neolithic period to be re-constructed. This data is then combined with other molluscan studies and a palynological sequence in the area to enable the landscape evolution from the Mesolithic onwards for this Downland block to be presented.

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ENVIRONMENTAL EVIDENCE

LAND SNAILS: THE ENVIRONMENT OF EASTON LANE, HAMPSHIRE.

Michael J. Allen

Samples were analysed from ditch and pit sections for mollusca which have allowed an almost complete site environment to be reconstructed. This data when reviewed with Mason's mollusc work at both Winnall Down (1982 & 1985) and Easton Down (1982) and Waton's palynological evidence from Winnall Moor (1982) provide a basis for evaluating the landscape history of Easton Lane and its environs.

Samples

Feature	Sample Nos.	Primary Phases	Feature
F 1017	451 - 444 125, 123-119	2 - 3 3 - 4	Pit
F 1810B	520 - 526	4 - 5	Ditch
F 176A	68 - 73	4 - 7	Ditch
F 990A	509 - 510	6	Ditch
F 971	2121	6	Ditch

Methodology

The methods of mollusc analysis employed follow Evans (1972, 40-45): soil being soaked and dissagregated in water and hydrogen peroxide (H_2O_2) and washed through a nest of sieves of 5.6mm, 2mm, 1mm and 0.5mm mesh aperature. Mollusca were extracted, identified and quantified using a x 10 to x 30 stereo-binocluar microscope. The residues were then weighed and the fraction calculated as a percentage of the initial sample weight (figs. 2 & 4)

The nomenclature for the mollusca follows Waldén (1976) and the sediment descriptions provided by the excavator were augmented by the author's quantitative descriptions which follow Hodgson (1976) -see Appendix 1-. The tripartite classification of ditch sediment (primary, secondary and tertiary) is that outlined by Evans (1972, 321-328) and Limbrey (1975, 290-300).

The results of mollusc analyses are shown in table 1 and graphically as histograms of relative abundance (figs 1 & 3) in which each species is plotted as a percentage of the total individuals, excluding the burrowing, and thus palaeoecologically insignificant, species Cecilioides acicula, which is recorded as a percentage over and above the rest of the assemblage.

The sieved fractions mentioned above were grouped into particles larger than 5.6mm, those between 5.6mm and 0.5mm and those smaller than 0.5mm and plotted graphically in figures 1 and 3. This data provides a crude index to the extent of weathering and rate of sedimentation and thus enables some evaluation of the suitability of conditions to mollusc life at the time.

The Mollusca

Phases 2 and 3. Later Neolithic pit F 1017

The pit which is in excess of 2m deep and c. 3m in diameter contained, at its base a fine calcareous mud which was overlain by a coarse vacuous rubbley primary fill above which was a Beaker burial (fig.....). The tertiary deposits sealing the burial were much finer and are probably ploughwash.

Although mollusca from pits are not ideal for palaeoenvironmental reconstruction because they may contain faunas enjoying the shadey pit micro-habitat or which had eroded from ancient soils through which the pit was cut (discussed in Thomas 1977a and Shackley 1976). The deposits, however seem quite unmixed and molluscan preservation uniform within each context.

The basal deposit reflects the pre-pit environment and contained high mollusc numbers (437) and the shade-loving assemblage was dominated by *Carychium tridentatum*, associated with high proportions of the predatory Zonitids, *Punctum pygmaeum* and the rupestral species *Acanthinula aculeata*. *Trichia hispida* also occurs in comparatively high numbers. The high mollusc numbers and large number of taxa present in the basal fill indicate a brief episode of stability. Although the pit micro-environment is partially reflected in the mollusc assemblage, *Carychium tridentatum*, *Discus rotundatus* and the predatory Zonitids indicate leaf litter and suggest the presence of a broadleafed deciduous woodland. Furthermore, the presence of *Ena montana*, today a species of old woodland, is surprisingly common in Neolithic and Bronze Age woodland where much human interference was clearly already present (Kerney 1968). This might account for both *Trichia hispida*, which although rare in woodland does occur in such in the pre-henge environment at Durrington Walls (Evans 1971) and *Vallonia costata* which occurs in open woodland. The overlying layer displays a similar assemblage but a significant increase in *Pomatias elegans* might reflect clearance.

The coarse rubbley primary fills contained very few molluscs probably due to the rapid weathering and infilling of this unit.

The finer secondary fill at c. 138 - 148cm contained an assemblage dominated by *Trichia hispida*, but otherwise not dissimilar from the basal fills. The absence of many rupestral species and the reduction in *Carychium tridentatum* indicate both a reduction in shade and leaflitter.

A series of samples sequentially through the tertiary fills show a gradual increase in open conditions. The _overall_ decrease in shade-loving species (fig. 1) is not due to an actual reduction in these species, but to an increase in open country species and idividuals such as _Pupilla muscorum_, _Vallonia costata_ and _Helicella itala_. Two factors contribute to this trend; firstly the increasing effect of the open country habitat on the fauna and secondly, the reduction of the shadey pit-microhabitat by infilling. The uppermost context contains a very open country assemblage dominated by _Pupilla muscorum_, Vallonia and Helicellids and contains the Introduced Helicellids _Candidula intersecta_ and _Cernuella virgata_ indicating the onset of Kerney's (1977) mollusc biozone 'f', i.e. Medieval. The open country conditions that prevailed from at least the Middle Bronze Age (see below) are slightly obscurred and retarded by the pit micro-habitat affording shade.

Phases 4 - 7. Middle Bronze Age - Early Middle Iron Age ditches F1810B & F 176A

Two ditch sections and the primary fill of two further ditches were analysed (Allen 1985). The ditches, although constructed in the Middle and Late Bronze Ages, do represent an entire landscape record as their upper, tertiary, fills contain Medieval fauna (fig. 3).

Non of the coarse basal fills displayed any evidence of a troglophile mollusc fauna, characterised by _Oxychilus_, _Vitrea_ and _Discus_, typical of rock-rubble habitats (Evans & Jones 1973). Nor was any evidence for Evan's (1972, 331) 'Punctum group' (_Punctum pygmaeum_, _Euconulus fulvus_, _Nesovitrea hammonis_ and _Vitrina pellucida_) typical of early stages of ditch colonisation by plants, recognised. All the assemblages show very little ecological variation up profile and all represent a typical very open dry grassland dominated throughout by _Helicella itala_, _Vallonia excentrica_, _Pupilla muscorum_ and _Trichia hispida_ (fig. 3). The assemblage is a fairly specialised one being consistent with field boundary ditch and colluvial deposits recorded at the Bishopstone lynchet (Thomas 1977b), valley fills at Kiln Combe, Itford and Chalton (Bell 1983) and field boundary ditches at Cuckoo Bottom (Allen & Fennemore 1984) and Wharram Percy (Allen 1984), which ara all interpreted as resulting from arable and rastural regimes. These land snail assemblages represent continuous stable dry open Downland and suggest that limited short-grazed grassland episodes were interupted by arable activity.

Phases 8 - 10. Middle Iron Age - Medieval (Tertiary fills of F 1017, F 1810B & F 17

The tertiary fills of the pit and ditches discussed above represent the environmental history of these features which we know extends into the Medieval period because of the presence of the Introduced Helicellids (Kerney 1977).

The tertiary deposits of all the features produced a restricted taxa, almost exclusively of open country preference, and, with the exception of the Introduced Helicellids, undifferentiatable from the assemblages recovered from the Middle Bronze Age and later fills. Thus the open Downland suggested above can be seen continuing into the Medieval period.

Conclusion

In the later Neolithic contexts analysed environmental interpretattion is made more complex by the pit micro-habitat contributing to the molluscan faunas. However, it is clear that a deciduous woodland was probably cleared for the pit, though there is no evidence that this clearance was longstanding. Shadey conditions prevailed soon after construction of the pit indicating only limited, short-lived, Neolithic activity at Easton Lane. Although there is no environmental evidence for the Early Bronze Age, it is clear that the Middle Bronze Age linear ditches were cut into a well established pre-existing open Downland environment. It is therefore, in all probability, likely that the secondary woodland/shrubland was extensively cleared in the Early Bronze Age. The arable and short-grazed pastural grassland agronomy suggested by the molluscan evidence is attested by Maltby's faunal analysis and Monk's plant remains. Open Downland prevailed throughout later prehistory and the Medieval period until very recent times.

Summary Table

PHASE	PERIOD	ENVIRONMENT	ACTIVITY
1.	NEOLITHIC	-	-
2.	LATER NEOLITHIC	Deciduous woodland	
			Limited clearance
		Regeneration	
		Open woodland	
3.	EARLY BRONZE AGE	? Open woodland	? Extensive clearance
4.	MIDDLE BRONZE AGE	Open Downland	Arable and Pastural activities
5.	LATE BRONZE AGE	↓	↓
6.	EARLY IRON AGE	↓	↓
7.	EARLY MIDDLE IRON AGE	↓	↓
8.	LATE IRON AGE/EARLY ROMAN	↓	↓
9.	MEDIEVAL	↓	↓

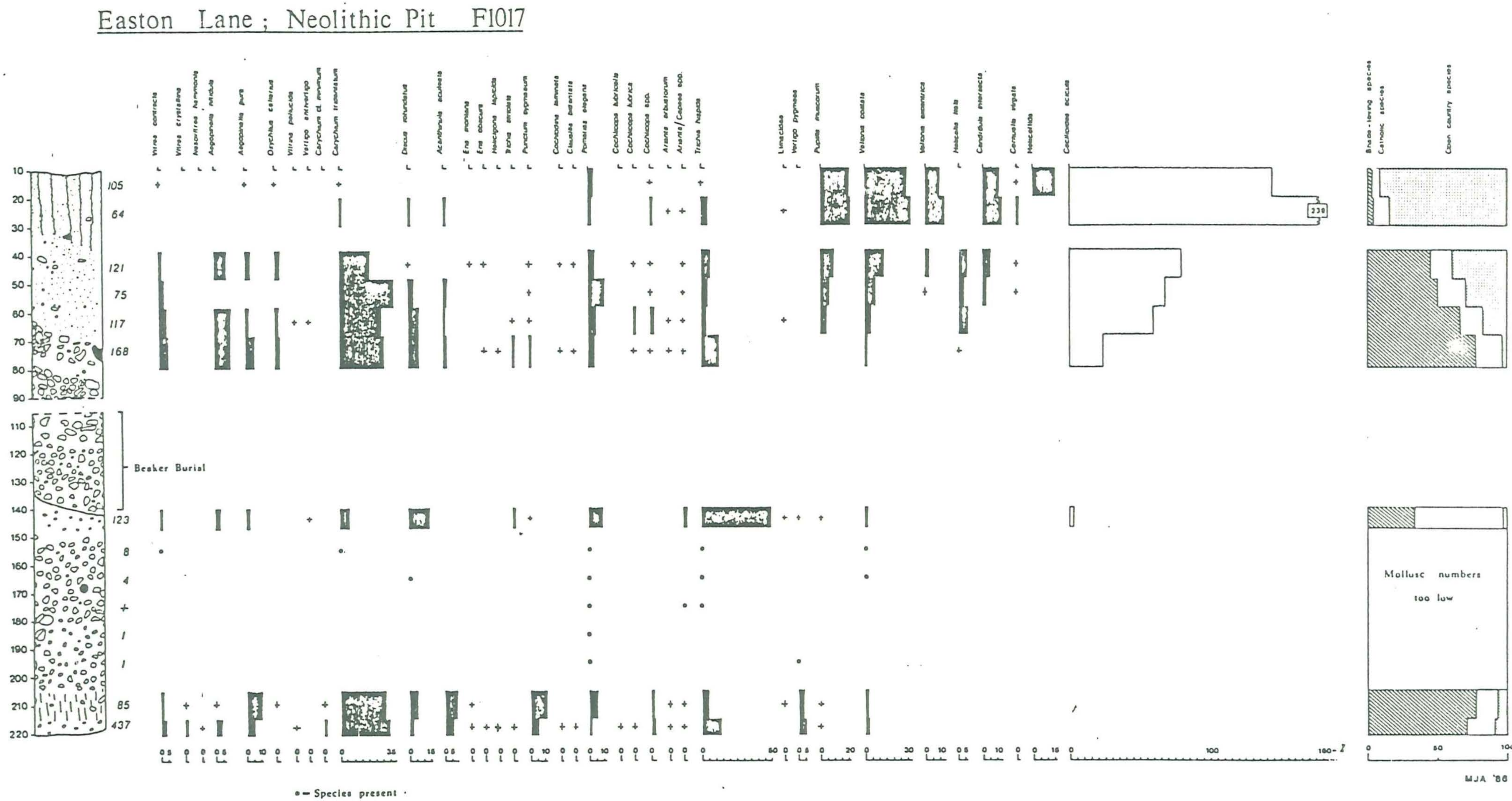


Figure 1. Histogram of relative mollusc abundance.

Easton Lane F1017

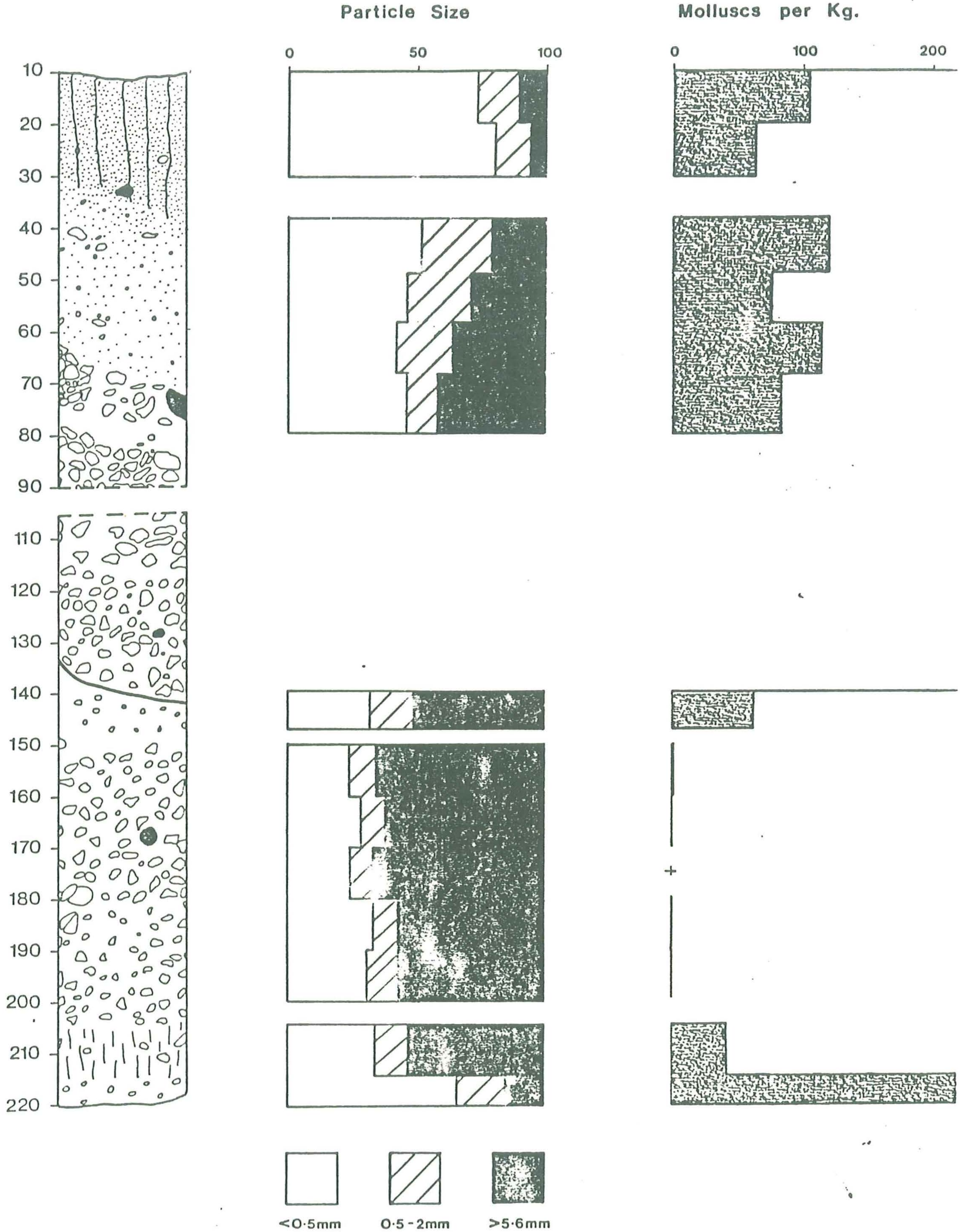


Figure 2 Particle size and Mollusc frequency data

Easton Lane

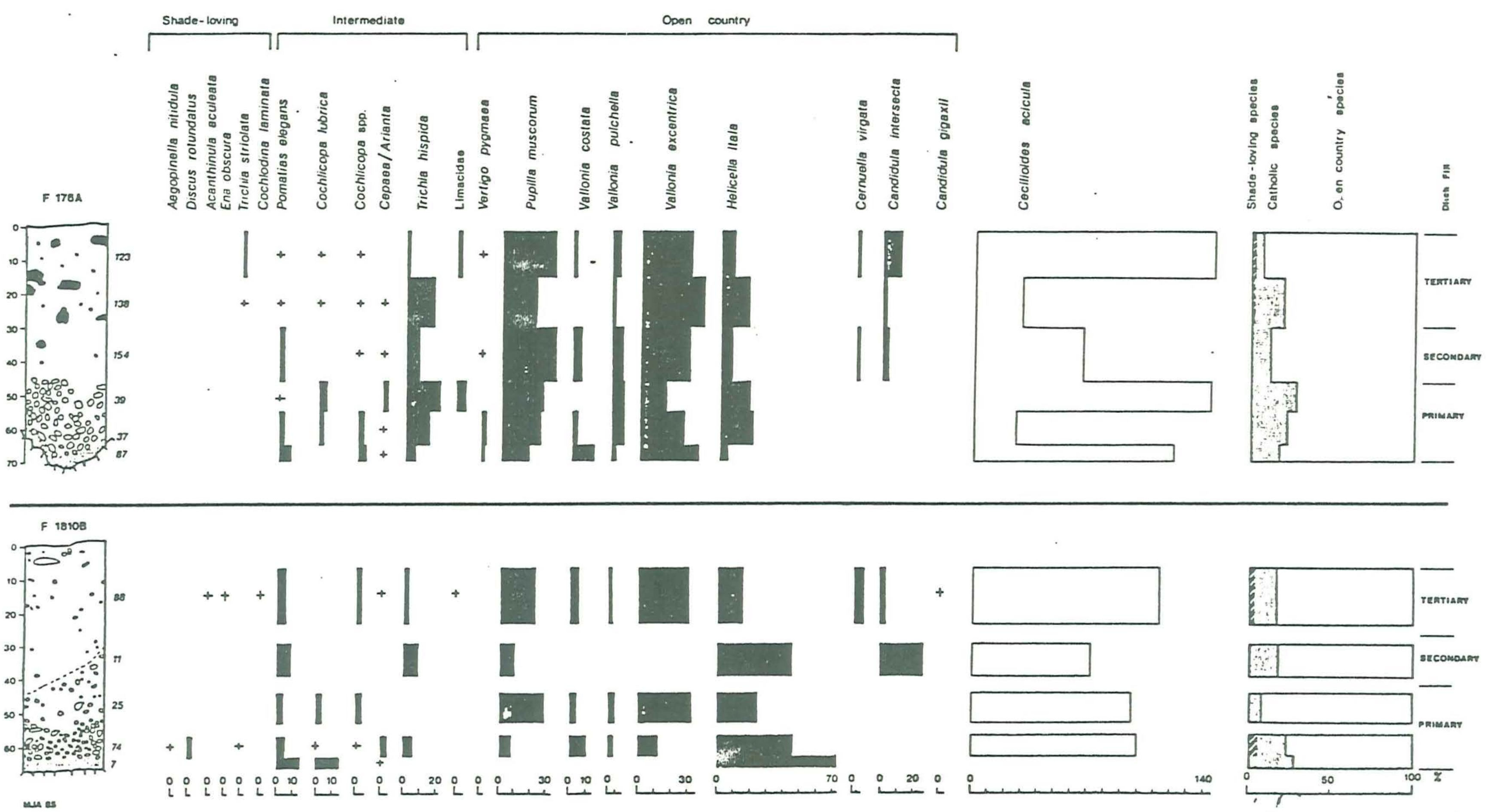
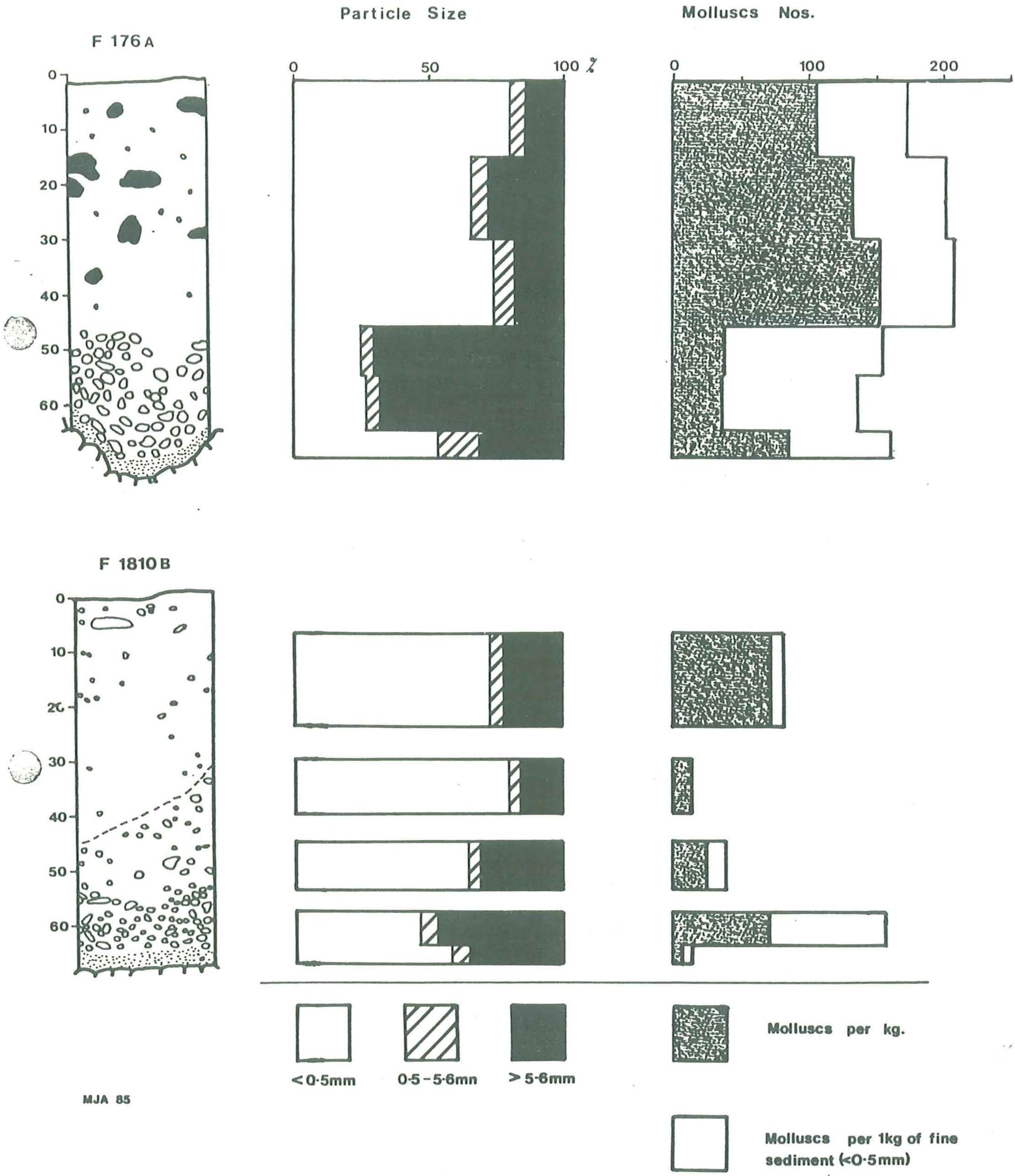


Figure 3. Histogram of relative mollusc abundance,

Easton Lane



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FEATURE	F 1017														F 176A						F 1810B					F 990A		971
CONTEXT	3231	2798	2763					3233	1042	1019			1018		808	427		411	352		1825	1824	1823	1822		2120		2121
Sample	451	450	449	448	47	446	445	444	125	123	122	121	120	119	68	69	70	71	72	73	520	521	522	523	524	509	510	517
MOLLUSCA / wt.	2000g	2000g	2000g	2000g	2000g	2000g	2000g	2000g	2000g	1000g	1000g	1000g	1000g	1000g	1000g	1000g	1000g	1000g	1035g	1150g	1000g	1000g	1000g	1000g	1200g	1000g	1000g	1000g
Pomatias elegans (Müller)	10	5	1	+	1	+	+	12	8	7	9	6	2	4	6	1	+	4	+	+	1	4	1	1	4	+	+	1
Carychium cf. minimum (Müller)	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carychium tridentatum (Risso)	131	18	-	-	-	-	1	9	40	24	22	12	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carychium spp.	25	9	-	-	-	-	-	-	13	9	7	14	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cochlicopa lubrica (Müller)	3	-	-	-	-	-	-	-	1	2	-	1	-	-	-	1	2	-	2	1	1	1	1	-	-	-	-	-
Cochlicopa lubricella (Porro)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cochlicopa spp.	15	2	-	-	-	-	-	-	1	3	2	1	1	1	4	1	-	1	1	1	-	1	-	-	3	-	-	-
Vertigo pygmaea (Draparnaud)	10	-	-	-	-	-	-	1	-	-	-	-	-	-	2	1	-	1	-	1	-	-	-	-	-	-	-	-
Vertigo antivertigo (Draparnaud)	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vertigo spp.	16	3	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pupilla muscorum (Linnaeus)	1	1	-	-	-	-	-	1	-	5	5	12	14	22	15	9	10	52	29	41	-	5	7	1	19	9	2	15
Vallonia costata (Müller)	10	2	-	-	-	2	-	2	4	6	10	17	21	27	11	1	-	7	-	3	-	7	1	-	4	-	-	15
Vallonia pulchella (Muller)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	11	3	6	-	2	1	-	2	-	-	-
Vallonia excentrica Sterki	-	-	-	-	-	-	-	-	-	-	1	3	9	10	23	13	6	45	52	37	-	9	8	-	26	1	3	32
Vallonia spp.	1	-	-	-	-	-	1	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acanthinula aculeata (Müller)	26	8	-	-	-	-	-	-	5	2	2	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Ena montana (Draparnaud)	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ena obscura (Müller)	1	-	-	-	-	-	-	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Punctum pygmaeum (Draparnaud)	26	10	-	-	-	-	-	1	4	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Discus rotundatus (Müller)	13	5	-	-	-	1	-	18	13	9	3	1	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Vitrina pellucida (Müller)	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vitrea contracta (Westerlund)	15	2	-	-	-	-	-	2	12	7	3	3	-	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-
Vitrea crystallina (Müller)	10	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vitrea spp.	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nesovitrea hammonis (Strom)	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aegopinella pura (Alder)	25	1	-	-	-	-	-	4	11	3	-	5	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aegopinella nitidula (Draparnaud)	16	9	-	-	-	-	-	5	20	13	-	11	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Oxychilus cellarius (Müller)	-	1	-	+	-	-	-	-	6	3	-	5	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limacidae	-	1	-	-	-	-	-	1	-	1	-	-	1	-	-	-	2	-	-	2	-	-	-	-	1	-	-	-
Cecilioides acicula (Müller)	-	-	-	-	-	-	1	3	41	67	51	96	153	151	22	45	56	101	40	178	-	81	24	8	99	61	25	85
Cochlodina laminata (Montagu)	1	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Clausilia bidentata (Ström)	4	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Candidula intersecta (Poriet)	-	-	-	-	-	-	-	-	-	-	2	7	9	13	-	-	-	6	3	13	-	-	-	3	3	-	-	-
Candidula gigaxii (Pfeiffer)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Cernuella virgata (da Costa)	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	3	-	3	-	-	-	-	5	-	-	-
Helicella itala (Linnaeus)	-	-	-	-	-	-	-	-	1	8	3	7	-	-	17	2	7	11	23	10	5	34	6	5	13	3	3	4
Helicidae	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichia striolata (C. Pfeiffer)	4	-	-	-	-	-	-	2	3	1	-	-	-	-	-	-	-	-	1	2	-	1	-	-	-	-	-	-
Trichia hispida (Linneaus)	60	4	-	-	+	1	4	60	21	4	4	9	3	1	5	5	8	12	23	3	-	4	-	1	3	1	+	7
Arianta arbustorum (Linneaus)	1	+	-	-	-	-	-	-	+	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Helicigona lapicida (Linneaus)	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cepaea/Arianta spp.	1	1	-	+	+	-	-	4	1	1	1	1	+	-	1	+	1	1	1	-	+	3	-	-	1	1	-	-
TOTAL	437	85	1	+	1	4	8	123	168	111	75	121	64	105	87	37	39	154	138	123	7	74	25	11	88	17	8	75
TAXA	25	19	1	-	1	3	4	15	18	19	15	21	11	13	10	9	8	12	9	12	3	12	7	5	16	6	3	6

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\+ = non-paical fragment

Table 1. The mollusc data

DISCUSSION and GENERAL OBSERVATIONS

ENVIRONMENTAL HISTORY OF EASTON DOWN AND WINNALL DOWN, HAMPSHIRE.

The mollusc evidence from Easton Lane when reviewed with Mason's work at both Winnall Down (1982; 1985) and Easton Down (1982) and the palynological evidence from Winnall Moor (Waton 1982) provides a basis for interpreting the landscape evolution and environmental history of the Downland block of Winnall Down and Easton Down (fig. 5).

Palynological evidence from Winnall Moors (SU 485 799) situated to the west of Winnall Down in an area of fen to the north of Winchester in the Itchen Valley (Waton 1982) provides the longest complete environmental record from the area. However the pollen is not sensative to local minor activities which are recorded in the molluscan sequences but does provide a good corrobory. The palynological squence show that during the Boreal and early Atlantic periods this area did not differ greatly from non-calcareous regions elsewhere in Britain. That is to say a mixed deciduous woodland with high proportions of Ulmus (elm), Quercus (oak) and Tilia (lime) flourished.

Although there is niether direct archaeological nor environmetal evidence for Mesolithic activity, Smith (1970) has suggested that areas of woodland, such as those discussed here, might themselves represent regeneration from Mesolithic clearance; and it has been shown that such clearance is often underestimated (Radley & Mellars 1964). Indeed it has been suggested that the Boreal Corylus maxima (such as seen at Winnall Moor) might be attributed directly, or indirectly, to anthogeny (Scaife 1982). Such Mesolithic and earlier Neolithic localised clearances would also account for the 'woodland' mollusc assembalges seen at Easton Lane (Allen 1986/this volume).

The pollen record shows dramatic, permanent, clearance of the woodland during the early Neolithic (3680$\pm$ 90 bc) which is complimented by a corresponding decrease in Corylus and increase in Graminaea and the occurence of cereal-type pollen (Waton 1983, fig 2.). Although the radiocarbon date for clearance and the appearance of cultivars may be biased towards the earlier period due hard water error (Shotton 1972), its credance as a Neolithic date is not in doubt. From clearance onwards the pollen evidence only records open grassland which is not reflected in all the molluscan data.

The earliest dated molluscan sequence is that from the Winnall Down ring ditch (Fasham 1982), however Mason states that there were inadequate numbers of snails to interpret the Neolithic environment. Nevertheless, a comparable, although later, ring ditch on Easton Down did provide molluscan evidence indicating that in the later Neolithic open grazed Downland exsisted. However at Easton Lane woodland, albiet secondary woodland, survived until it was cleared locally for the activities associated with a pit. Thus we can see a complex mosaic of landuse in the Neolithc (fig. 5).

During the Late Neolithic/Early Bronze Age woodland regeneration is indicated by the mollusca from both Easton Down and Easton Lane. Interestingly this coincides with a period (c. 2575 - 1700 bc) of temporary absence of cultivars in the pollen diagram.

Although we have no direct evidence for clearance of woodland in the Early Bronze Age it is clear that the Middle Bronze Age ditches at Easton Lane were constructed in a longdtanding pre-exsisting open Downland with short grazed grass probably interupted by arable activity (Allen 1985). Evidence for extensive clearance at some time in the Bronze Age is also indicated by the molluscan data from Easton Down (Mason 1982). The earliest evidence from Winnall Down, although Iron Age, does show a stable open country environment, and thus we can infer that clearance was Early Bronze Age and was, unlike that of the Neolithic, both extensive and permanent.

All the evidence records that the open Downland with arable and pastural activity remained from the Bronze Age through until the present.

The mollusc data seems to be consistent amoung sites and if we can see the presence/absence of cultivars in the pollen record as a crude index of anthropogenic activity, this too broadly corroborates the hypothesis of landscape deterioration in the Early Bronze Age. The Itchen Valley however seems to have remained open, perhaps acting as a thorughfare, though the land itself not being exploited for arable resources in the Early Bronze Age. The Itchen Valley itself provides a separate ecological niche within the landscape and is of particular value today for its fenn, carr and herb-rich meadows and by comparison with the Sussex valleys, such resources probably exsisted in the Medieval period (Brandon 1971, Holden & Hudson 1981). However, the prehistoric landscape, like that at the Ouse and Cuckmere valleys (Scaife & Burrin 1983; 1985), must be considered a buried archaeological resource and thus an important component of the landscape that is presently, both archaeologically and environmentally, unavailable for incorporation into any landscape and settlement models (Allen in press).

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Summary of Environments by Phase

	EASTON LANE (Allen 1985; 1986)	WINNALL DOWN (MASON 1982; 1985)	EASTON DOWN (Mason 1982)	WINNALL MOORS (Waton 1982)	LANDSCAPE SUMMARY
0. MESOLITHIC				Mixed deciduous woodland ?some Mesolithic clearance	Mixed deciduous woodland ?some mesolithic/late Neolithic localised clearance.
1. NEOLITHIC			dry grassland in an arable/pastural regime regeneration Open woodland 3070 bc	Major clearance 3680 bc	Large scale clearance in the Itchen valley - cereals grown Localised intensive clearance on the Chalk Downlands.
2. LATER NEOLITHIC	Open woodland ↓ localised clearance ↓ woodland regeneration				regeneration ↓ some localised clearance on the Chalkland, some localised regeneratation ↓
3. EARLY BRONZE AGE	Clearance			Temporary absence of cultivars	Localised regeneration. Temporary abscence of cultivars in the Itchen valley ↓ Major exensive and permanent clearance
4. MIDDLE BRONZE AGE	Open dry grassland; permanent pasture and arable regimes	?	Open dry grassland arable/pastural landscape		Permenent open grassland in arable/pastural landscape
5. LATE BRONZE AGE		Open dry grassland; permanent pasture and arable regimes			
6. EARLY IRON AGE					
7. EARLY MIDDLE IRON AGE					
8. MIDDLE IRON AGE					
9. LATE IRON AGE/ ROMANO-BRITISH					
10. MEDIEVAL					

Appendix 1.

Sediment descriptions

F 1017

10 - 35cm context 1018	Mid brown silty loam with common rounded small and medium chalk pieces, rare medium flints. Samples: 119 & 120.
35 - 66cm context 1019	Mid brown calcareous loam with common rounded medium chalk pieces and medium - large flints. Samples: 121, 122 & 123.
66 - 79cm context 1042	Abundant medium - large sub-rounded chalk pieces and rare medium - large flints in a mid brown loam. Sample: 125.
138 - 148cm context 3233	Light/mid brown silty loam with common small and medium rounded chalk pieces. Sample: 444.
148 - 205cm context 2763	Medium - large sub-angular and sub-rounded chalk lumps with rare large flint nodule in a mid grey calcareous matrix. Samples: 445, 446, 447, 448 & 449.
205 - 214cm context 2798	Calcareous silty clay chalk mud with common medium chalk pieces. Sample: 450.
214 - 221cm context 3231	Calcareous mid brown silty clay loam with rare small and medium chalk pieces. Sample: 451.

F 1810B

0 - 41cm context 1822	Mid brown silty loam with common medium and small rounded and sub-rounded chalk pieces. Samples: 524 & 523.
41 - 56cm context 1823	Highly calcareous silty loam with abundant medium sub-rounded and sub-angular chalk pieces. Sample: 522.

56 - 66cm context 1824	Large and medium chalk lumps within a fine silty loam calcareous matrix. Sample: 521.
66 - 69cm context 1825	Mid brown silty clay loam with small common chalk pieces. Sample: 520.

F 176A

0 - 29cm context 352	Mid brown silty loam with common medium and small rounded chalk pieces and rare medium flints, some of which are burnt. Samples: 72 & 73.
29 - 45cm context 411	Mid brown calcareous silty loam with common medium rounded chalk pieces and rare medium flints. Sample: 71.
45 - 67cm context 427	Medium sub-angular chalk lumps in a calcareous silty loam matrix. Samples: 69 & 70.
67 - 73cm context 808	Mid brown calcareous silty clay loam with common small and very small chalk fragments. Sample: 68.

F 990A

70 - 90cm context 2120	Loosely packed small and medium rounded, sub-rounded and sub-angular chalk pieces in a calcareous loam matrix. Samples: 509 & 510.

F 971A

30 - 40cm context 2121	Large to medium sub-rounded chalk fragments in a light brown chalky loam. Sample: 517.

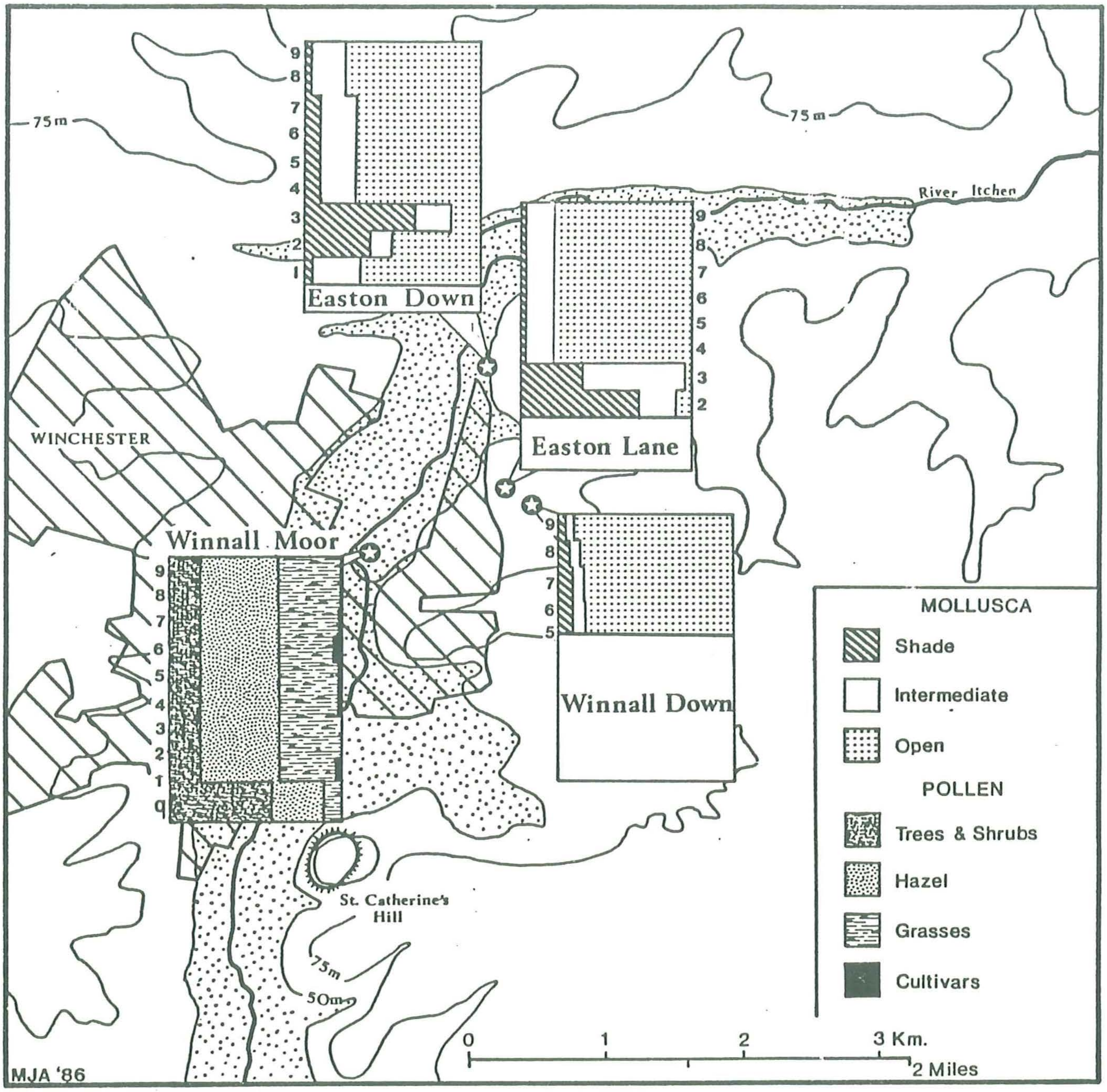

Figure 5. Summary of Environmental sequences in the Easton Down and Winnall Down Landscape. O= Mesolithic, 1= Neolithic, 2= Later Neolithic, 3= Early Bronze Age, 4= Middle Bronze Age, 5= Late Bronze Age, 6= Early Iron Age, 7= Early Middle Iron Age, 8= Middle Iron Age, 9= Late Iron Age/Early Roman.