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Excavation of a Bronze Age Funerary Cairn at Manor Farm, near Borwick, North Lancashire

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Microfiche pages 1-36

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The petrographic study of the ceramics.

P.M.Day

Summary

The fragmentary assemblage was analysed by various techniques, mostly based on petrographic methods, the results of which are summarised. The analyses generated data which are applicable to on-site spatial and chronological problems, in addition to those concerning characterisation and provenance study.

Method

Macroscopic examination of pottery from each individual scatter and ceramic spot finds was undertaken to establish the extent of variation within these apparently discrete spreads of material. This information was enhanced by data from microscopic techniques. The colour, surface treatment, size and temper of inclusions and any other observable fabric characteristics were recorded from the hand specimen. Surface and fabric traits were identified with the aid of a binocular microscope and colour readings were taken with reference to Munsell Soil Colour Charts. One sample from each scatter or spot find was refired, with the exception of SF182 and SF184 (both consisted of one small sherd, and were therefore only available for thin sectioning. The samples were fired to 1100^{o}c in an oxidising atmosphere, raising the temperature by 200^{o}c every hour, then cooled slowly. Any warping or cracking of the clay was noted and Munsell colour readings taken of the now fully oxidised

fragments.

Thin sections representing each scatter were made of a sample governed by the number of sherds and the observed variation within each concentration. Samples were chosen according to the thickness of sherd cross-section, but also included those which displayed the extremes of variability within one scatter. All samples were impregnated with araldite resin in a Gallenkamp vacuum oven, on account of their friable nature. These were then mounted and ground in the conventional manner. The thin sections were examined under a polarising microscope and the constituent minerals and rock fragments identified.

Further detailed characterisation was achieved by measurement of inclusion, void and clay matrix proportions, followed by grain size analysis. The proportions were measured by identification, at x100 magnification, of the nature of 200 randomly selected points, using the categories of Quartz/Other Clast/Void/Clay Matrix. This method has proved useful as a basic descriptive statistic in previous studies (Day 1983 and forthcoming ; Morris n.d.). Proportions derived from these counts are also expressed as inclusion-to-matrix ratios, thereby avoiding subjective categorisation of clasts as tempering material.

Grain size analysis of the ceramic fabric has been used to distinguish between sandy wares which lack diagnostic

mineral inclusions and to attempt to find their source (Peacock 1971; 1982). The technique applied to this assemblage provides the opportunity for an a standardised description of the fabrics, and an objective distinction between temper and natural inclusions.

One section from each concentration of pottery (two from SF61) was subjected to this analysis. A random sample of 100 grains was measured at x375 magnification (or x60 in the case of very large clasts) with a Filar micrometer eyepiece. The values obtained were classified according to the phi scale (Krumbein 1934) at half phi intervals and plotted as cumulative percentages on probability paper. In using an established geological mode of analysis, standardised procedures may increase valid comparison between assemblages. The temper in any vessel may be thought of as a sub-population of the overall ceramic fabric and therefore be equated with similar sub-groups in geological deposits. Sediments tend to a lognormal distribution of grain size and Krumbein introduced the phi (ϕ) scale of measurement to supplement the Wentworth size grades (1922). Subpopulations of sediments are 'most easily identified by sharp angular discontinuities in the cumulative curve' (Pettijohn 1972), and the identification of these discontinuities) is aided by plotting on probability paper (Spencer 1963). The resultant graphs may show the lower size limit of tempering material by such a change in gradient, although bi- or poly-modal sediments may affect interpretation, Within a geological environment dominated by glacial

till, caveats expressed by Howard and Tanner (below) must be heeded. Without detailed knowledge of variation of grain size in clays, or in past ceramic preparation techniques, a grain size analysis is unlikely to lead to a firm identification of source. Hand made pottery of the sort considered in this study is unlikely to give results which will be useful for comparison outside the assemblage. Grain size work may, however, isolate tempering materials and thus provide technological information.

Geology.

Borwick is situated at the edge of an extensive area to the north-east of Morecambe Bay, underlain by Carboniferous Limestone. Millstone Grit Series beds border on the southern and eastern limits of the area, forming a western extension of the Pennine chain, at a minimum distance of 1 km from the site. To the north-west and north-east, there are pre-Carboniferous formations, mainly Silurian flagstones, grits and slates, but also Ordovician deposits. These rise into the Howgill Fells at a distance of about 11 km from the site and the Lake District is bordered by similar Silurian beds which occur around 13 km away. There are beds of post-Glacial gravels and alluvium in the Morecambe Bay area, the nearest being within 1 km of the site at Manor Farm.

The sequence of drift deposition in Lancashire, which affects the variability of the clay character, is not yet

fully understood, although a tripartite succession of Upper and Lower Boulder Clay separated by Middle Sands, provides the general basis for interpretation. It is clear that there may be additional sand layers or a truncated sequence on higher ground. There are also possible mineralogical differences between drift deposits on and bordering the Lancashire-Cheshire plain (Tanner 1970), defined by 'North-western Drift' and 'Local Drift' (Jowett 1914). It has been shown that a large proportion of the transported material in the lowland drift comprises igneous rocks, slates and Silurian rocks originating in the Lake District and Galloway (Binney 1852; Simpson 1960). The upland drift nearer to the Pennines tends to be of a more local origin, and the erratic suites of the Upper and Lower Boulder Clays may be similar in composition at any one point (Tonks et al. 1931; Simpson op.cit.). Grain size analysis, however, suggests marked differences in texture at a microscopic level (Tanner 1970). General trends such as the relative fineness of till in south Lancashire have become clear, although considerable caution should be exercised in the use of these methods. Samples from the same horizon taken in close proximity can show an 'apparently random variation from nil to 15% coarse material' (Tanner 1970, 3.24), and samples from different drift formations may be almost identical in thin section (Howard 1983, 260).

Descriptions of erratic types show that the Warton and Carnforth Soil Associations contain Carboniferous

Limestone in both solid and erratic form, and that there is also a varying proportion of Lake District and sometimes Pennine drift in the Carnforth and other Associations.

Catalogue: microscopic analysis

SF61. (section Numbers: MF82 61i,ii,iii,iv,v,vi.)

The optically anisotropic matrix is moderately micaceous, with both biotite and muscovite mica present, and there are common iron oxides up to 0.1 mm in size. Angular to sub-rounded quartz grains up to 0.4 mm are frequent. Discrete plagioclase, potash feldspars and biotite occur in some sections. Large angular micaceous siltstones (maximum length 3.5 mm) are present, with some smaller sub-rounded examples and occasional mudstones. The main inclusions are large, angular, devitrified volcanic tuffs and altered igneous rocks. The former are agglomerates of rock fragments with phenocrysts of feldspar in a devitrified matrix which contains microlites. Alteration products present in the matrix of the tuffs and altered igneous fragments include zeolithic and chloritic minerals. The euhedral feldspars show little sign of alteration. Most of the angular fragments in this scatter are tuffs, but the division between these and some altered igneous rocks is often obscure and, in terms of the provenance, not important. Some of the altered igneous fragments closely resemble examples present in SF77.

SF77. (Section Numbers: MF82 77i,ii,iii,iv.)

The optically anisotropic, moderately micaceous matrix displays only very sparse iron oxides. The angular to sub-rounded quartz grains are frequent and have an upper size limit of 0.4 mm. Discrete biotite mica and plagioclase feldspar fragments are present. The most frequent inclusions are large (up to 5.0 mm), angular, altered igneous and tuff fragments, The former predominate and, as in SF61, they display development of chloritic minerals and possibly zeolites; some also are masked by iron-rich minerals. Their microcrystalline matrix of quartz and feldspar is apparent; in some fragments there is epidote development within this matrix. Tuffs are present, similar in character to those in SF61, but some of the larger feldspars are altered to sericite.

SF102. (Section Numbers: MF82 102,i,ii,iii,iv.)

The sparsely micaceous, anisotropic matrix is cracked, which may be due to poor wedging, but on the evidence of refiring is probably a result of the fine clay matrix. It contains occasional iron oxides and iron rich concentrations. The sparse grounding of angular to sub-rounded quartz (up to 0.7 mm) also includes more rounded grains (over 0.3 mm diameter). Section 102,iii has a linear argillaceous concentration, which may also indicate poor wedging of the clay. Two sections contain angular, micaceous siltstones (to 5.0 mm), and discrete plagioclase feldspar is present. The most numerous inclusions are large angular fragments (up to 3.5 mm) of

altered igneous rocks and volcanic tuffs. The iron-rich material at times masks the fragments of microcrystalline altered igneous rocks. There are euhedral, porphyritic feldspars and marked epidote similar to that in SF108.

SF108. (Section Numbers: MF82,i,ii,iii.)
The sparsely micaceous matrix is anisotropic and contains moderately frequent iron oxides (up to 0.5 mm). The angular to sub-rounded quartz grounding has an upper size limit of 0.4 mm Section 108,iii contains an angular, thickly cemented, coarse siltstone, and there are discrete, angular feldspar and biotite fragments in Section 108,ii. The main clasts in this fabric are altered igneous rocks which have a marked epidote development, in some cases covering the whole fragment. The devitrified matrix has porphyritic feldspar in some case, and there are volcanic fragments displaying lathlike and microlitic texture.

SF112. (Section Number: MF82 112.)
The matrix is optically anisotropic and sparsely micaceous, with iron oxides present (up to 1.0 mm). The sparse quartz grains are angular to sub-rounded and have an upper size limit of 0.25 mm. The ware appears to be grog tempered, but the grog frequency and its similarity to the matrix make distinction between the two difficult. There are also two small angular fragments of a microcrystalline, altered igneous rock (up to 0.7 mm) in the matrix.

SF118. (Section Numbers: MF82 118,i,ii,iii.)

The anisotropic, sparsely micaceous matrix contains few iron-rich opaques. The matrix contains a sparse grounding of small. angular to sub-rounded quartz (up to 0.25 mm), some of which appear semi-composite. This fabric is heavily tempered with frequent, sub-angular grog fragments up to 5.0 mm, which contain larger quartz inclusions than are present in the matrix. All three sections of this vessel contain angular fragments of biotite and potash feldspar (under 0.8 mm). Some of these appear as rock inclusions in combination with the quartz. The grog has more frequent, larger examples of these minerals. Sections 118,ii and iii contain angular siltstones, which vary from being sparsely to moderately micaceous and have a maximum length of 4.0 mm. Small fragments of medium to fine sandstone are also present, in addition to voids from burnt out vegetable matter.

SF182. (Section Number: MF82 182)

An optically anisotropic, micaceous, iron-rich matrix with a sparse grounding of small, angular, sub-rounded quartz (maximum length 0.25 mm). The matrix is markedly fine. The section contains altered igneous rock (up to 1.8 mm). In one of the latter inclusions, the matrix of feldspars displays a relict texture of larger rounded grains and there are spherulitic, iron-rich minerals, possibly siderite, which have developed within this matrix.

SF184 SF276.(Section Numbers: MF82 184 and 276,i,ii,iii.) A very distinctive fabric with an optically anisotropic and carbonaceous matrix. There is a very sparse mica and iron oxide. The moderately frequent angular to sub-angular quartz grains have an upper size limit of 0.25 mm. Argillaceous material is also present in SF184, in the form of mudstone, and as sub-angular, thickly cemented, micaceous siltstone in Section 276,i. The dominant feature of the fabric, however, is the very frequent rhomboidal voids which are either the vestiges of burnt or leached out calcite, or, more probably, dolomite crystals.

Refiring

Six of the seven samples were of similar colour after refiring, and remained undistorted. These were all reddish brown (2.5 YR 4/4), varying to light reddish brown (5 YR 6/4) and red (2.5 YR 5/6) in SF61 and SF108, and red (2.5 YR 5/6) in SF112. SF102 was fired to a deeper more vitrified finish ranging from dark reddish brown (2.5 YR 2.5/4) to dusky red (10 YR 3/2). This sherd warped and developed enhanced cracking, ostensibly because of the fine nature of the matrix. SF182 was not refired.

Fabric proportions. (Table 1)

Table 1 illustrates the general data provided by the Quartz/Other clast/Void/Clay matrix proportions, with the inclusion to matrix ratio. Sections were considered

unsuitable when they were either too small to obtain a valid sample, or when they were too thick. The sparse grounding of quartz in SF102 and SF182 is clearly shown. Rhomboidal voids were counted as clasts in SF184 and SF276, showing the high proportion of both dolomite temper and quartz in this sample. The abundant quartz grounding in SF77 is also clearly shown. SF61 and SF108 have similar proportions, but the variation which exists within one scatter (eg. SF61) is also emphasised.

Grain Size Analysis.

The grain size analysis successfully provided standardised textural characterisations, some of which are graphically represented in figure 1. Examination of the curves up to 20% cumulative frequency reveals the size distribution and limits of the added temper, Differences in individual points and the curve gradient in this section are especially sensitive to variation between samples. This results from the scaling at either end of the probability axis and the relatively large differences in size between -1 0 ϕ (2 and 1 mm respectively) on a logarithmic scale, compared with 7 and 8 ϕ (0.0111 and 0.0078 mm respectively). Between 20% and 90% cumulative frequency, the general size distribution of the matrix can be seen. Beyond 90% frequency, aberrations from an extrapolation of the distribution tend to be exaggerated by the probability scale. The upper pivot of the curves has tended to vary according to section thickness, and thus to the minimum size limit likely to be measured in the sample. Investigation is

currently in progress into the effects of this, and the temper grain frequency, on the graph produced by such a closed system analysis. The characterisation and technological information produced by this analysis is summarised below.

Figure 1 illustrates the distributions of a sample from SF276, 112 and 118, and the variations of readings from the igneous and volcanic tempered wares. The latter group has some consistency, even though it contains varying fabrics (eg. the relatively coarse SF61, together with SF102 and SF182, both of which have a fine matrix and fewer inclusions). Within the igneous/volcanic group, the discontinuity in distribution occurs between 2ø (0.25 mm) and 4ø (0.0625 mm). This should reflect the lower limits of the temper size. However, the lognormal distribution of the matrix, shown by the straight line, does not develop until 4ø. Further work may demonstrate whether all or some of the grains between the measurements defined above were added, or whether they may be explained as a sub-population within the natural clay.

The gradients are similar within this set, but cumulative frequency at the 7ø stage varies from only 57%, in the finer sample (SF182), to 78%, 89% and 91% in the cases of SF61, 77 and 108 respectively.

SF112 and SF118 produced similar curves, and although they are composed of different fabrics, they are both

grog tempered. These frequent fragments show an approximate lower limit of 0.5ø (0.71 mm), and are quite distinct from the natural clay matrix, the distribution of which starts around 3ø (0.125 mm). The graphs display the difference in size and frequency of temper between these and other samples, and also demonstrate that the gradient of that part of the curve interpreted s being natural, is similar to that of the igneous/volcanic group.

The grain size analysis of SF276 included the measurements of the rhomboidal voids. This sample produced a quite different curve, which displays discontinuity at around 4ø (0.0625 mm). The added dolomite or calcite temper appears to have a size distribution approaching lognormality, and when added to clay matrix, has produced an apparently bimodal distribution. This pattern may be applicable to many tempering materials, but is disclosed in this particular sample as a result of the high frequency of the inclusions.

TABLE 1: FABRIC PROPORTION AND CLAST MATRIX RATIO

Thin Section No			Q	C	V	M	Clast/Matrix Ratio
SF	61	i	15	14	2	69	19 : 81
	61	ii	11	8	1	80	19 : 81
	61	iii	12	23	2	63	36 : 64
	61	iv	17	17	4	62	35 : 65
	61	v	12	20	1	67	32 : 68
	61	vi	Not analysed				-
SF	77	i	21	19	1	59	40 : 60
	77	ii	23	13	1	63	36 : 64
	77	iii	21	28	2	49	50 : 50
	77	iv	Not analysed				-
SF	102	i	Not analysed				-
	102	ii	6	14	1	79	20 : 80
	102	iii	Not analysed				-
	102	iv	12	16	4	70	29 : 71
SF	108	i	Not analysed				-
	108	ii	23	15	2	60	39 : 61
	108	iii	14	19	2	65	34 : 66
SF	112		6	28	3	63	35 : 65
SF	118	i	10	39	3	48	51 : 49
	118	ii	Not analysed				-
	118	iii	6	43	2	49	50 : 50
SF	182		8	14	1	77	22 : 78
SF	184		28	26	3	43	56 : 44
SF	276	i	26	22	2	50	49 : 51
	276	ii	23	23	1	53	46 : 54

Q = Quartz
C = Other Clasts
V = Voids (except those dolomite voids in 276/184)
M = Clay Matrix

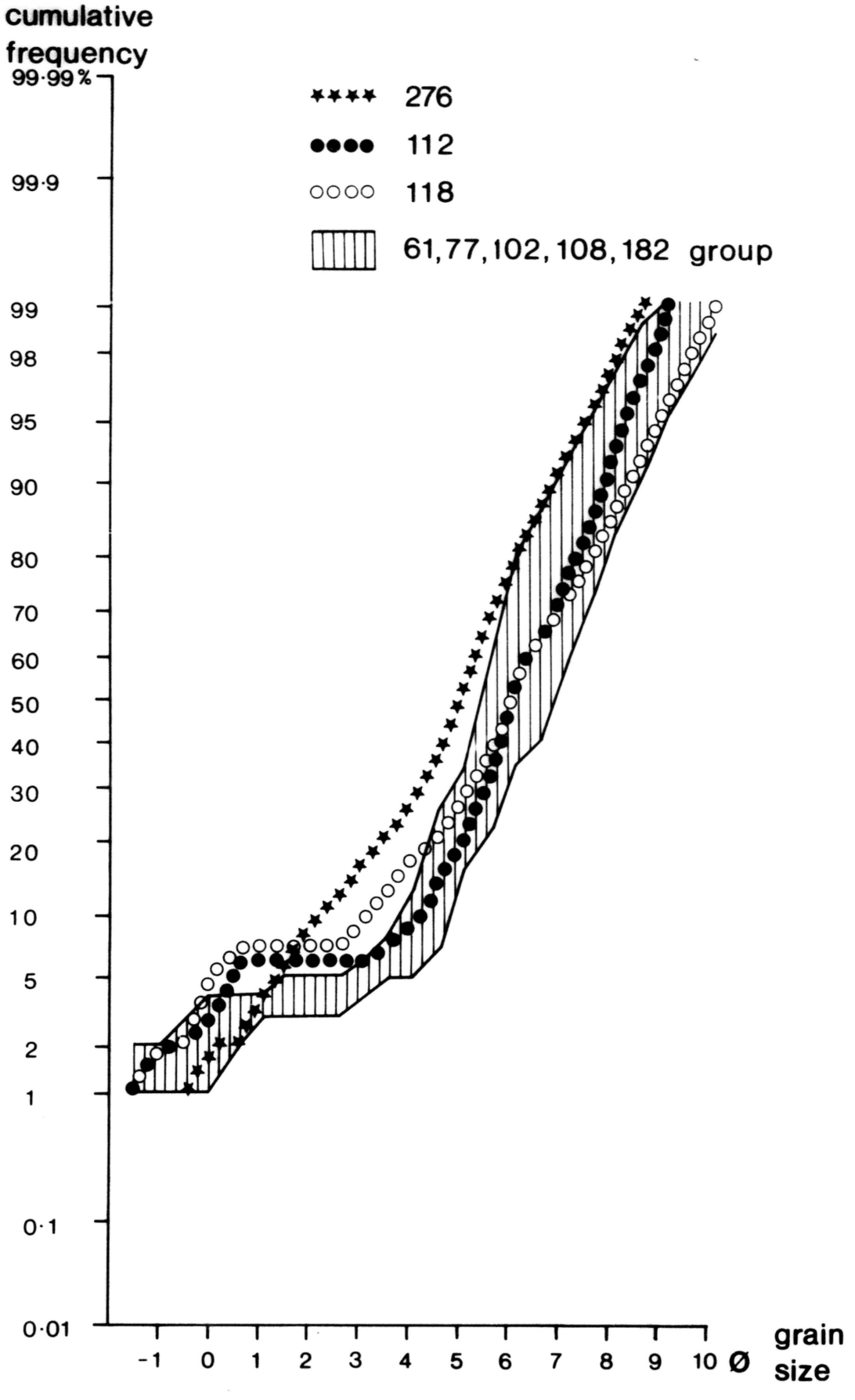

Figure 1.
GRAPH OF GRAIN SIZE OF FABRIC GROUPS.
CUMULATIVE FREQUENCY ON PROBABILITY SCALE.

The lithic industry: fieldwork and surface collections in the Borwick area.

T.Clare[20]

Observations at Dock Acres: 1967-1973

The area known as Dock Acres, almost immediately due west of Manor Farm, Borwick, was variously reputed to have been the site of a Roman dock, Medieval castle and/or Medieval dock. Initial field survey when the area was still permanent pasture was carried out in advance of gravel extraction by Mr B.J.N.Edwards.[21] Subsequent observation of the first stages of quarrying was undertaken by the author (as a student) and led to the recovery of some lithic material. It is perhaps worth noting in passing that observation of a later stage of mineral extraction by the author and the newly formed Moorholme Local History Society led to the recording of the vestigial remains of the Medieval castle.

The lithic material was recovered from the top and in the vicinity of the largest topographical feature; a flat topped mound some 150 m by 50 m. This 'mound' was separated from a similar more extensive area to the south by a broad channel whilst flat, low lying ground lay to east, north west and north where there were two small rectangular mounds.

Observation of quarry sections in the side of the main mound suggested that all the features revealed including possible post-pipes were natural in origin and were

specifically connected with ice decay. A number of finds were recovered from the surface of the mound after the turf had been removed by machine. This material was generally quite recent in date, but also included some probably fourteenth century pottery, as well as a quantity of worked flint and chert. Unfortunately, it was not possible to record accurately the location of these finds. Observations during the excavation of the lowlying area (by grab line) were hampered by the high water table, and the presence of large dumps of dredged material similar to the in situ subsoil. Amongst this dredged material was a flint flake lying in close proximity to what may have been the remains of a cooking place (an area of peat and small grey stones interspersed with a mass of charcoal).

Fabric Analysis

Fabric analysis of the gravel lenses and layers which formed the main mound was undertaken in order to demonstrate that the feature was indeed natural and not a Roman or Medieval construction. Since 1930, the orientation of stones in Pleistocene deposits has generally been regarded as an indication of the mode of deposition. In any deep layer of till the orientation of the longest axe of stones tends to be parallel to the direction of ice movement; conversely, in narrow band tills, stones lie transverse to the direction of movement. Fluvial deposits, however, exhibit no such marked orientation although the stones do possess an

upstream dip. Roundness of stones provides a further indication of the origin of deposit: angular stones produced by periglacial weathering contrasting with the well rounded product of the various processes of fluvial erosion. The roundness of stones may be plotted against their numbers, and the resultant histogram for an unknown environment of deposition compared with that of a known environment (Tricart and Schaeffer 1950).

At Dockacres a random sample of 100 limestone pebbles from the area was made, and the roundness index calculated. The orientation of some 50 stones was measured and plotted. Whilst the sample was of limited statistical validity the results tended to confirm the deposits were of fluvioglacial origin, but until the fabric of man made deposits has been analysed it cannot be demonstrated with confidence that the dip/orientation recorded here was characteristic of only natural deposits. The archaeological sterility of the strata observed during quarrying does, however, suggest and reinforce the probable natural origin of the mound from which the flints were recovered.

Yealand

The Victoria County History for Lancashire contains a map (between pages 210 and 211 of vol.1) showing two 'Neolithic Floors and Chippings' west of the A6 some 2-3 km north of Dock Acres. Unfortunately no further information seems to exist for these sites. When,

therefore, a small pipeline was put through the area indicated in the VCH the opportunity was taken to look for more 'flints'. Whilst the numbers recovered was minimal the work did suggest that further sites might well lie beneath the permanent pasture which is the predominant land use in this area.

Sedgwick and Levens Park

The construction of the M6-A6 Link Road south of Kendal in the early 1970s provided an opportunity to look for further scatters of flint in the area. The first indications of the potential of the area were revealed by David Sturdy's archaeological excavation of a complex Beaker site in Leven's Park (Sturdy 1972). Beneath the site and extending over the whole excavated area were several thousand flints (David Sturdy's estimation). While some of the flints were collected by the excavator and await analysis and publication by him, others were collected after termination of his work by the author, Mr J.Cherry and Miss H.Robertson.

The actual construction of the Link Road subsequent to the completion of David Sturdy's work revealed more lithic material on a hillside some 200 m from the Leven's Park site (which was situated on a natural terrace above the River Kent).

Catalogue of human bone.

Janet D. Henderson

SF35 Context 002

An inhumed mandibular right second molar from the permanent dentition. There was slight polishing of the occlusal surface which indicated that it came from an adult individual.

SF37 Context 002

1. Two fragments of inhumed human cranium, one of them from the parietal bone. Both fragments could be aged as adult but it was not possible to say whether this represented more than one individual or not.

2. A few fragments of inhumed human long bone shafts.

SF42 Context 002

A fragment of inhumed parietal bone from the cranium of an adult individual.

SF43 Context 002

1. A small sample of inhumed human bone; fragments of long bone shaft, skull, rib, right lunate (hand), phalanges (hands) and metatarsal shaft were identified. All of the material could be aged as adult, but it was not possible to say whether this represented more than one individual or not.

2. A small sample of inhumed teeth, identified as a

maxillary right first premolar; a maxillary left second incisor; a mandibular right second molar and two unidentifiable mandibular premolars. All of the teeth exhibited slight polishing of the occlusal surfaces and could be aged as adult. Given the condition of the teeth it was considered likely that these all came from the same individual although this could not be confirmed on the available evidence.

SF44 Context 002

1. A small sample of inhumed human bone from the same individual.

   Sex: ?Female: Discriminant function analysis of the right talus, skeletal size.

   Age: Adult

It was noted that in addition to the adult skeletal remains, there were three fragments of inhumed foetal bone present.

2. There were 26 teeth present altogether, all from the permanent dentition (three maxillary incisors, three mandibular incisors, four canines, eight premolars, six molars and two unidentifiable fragments). All of the teeth showed a severe degree of occlusal wear and on one, a mandibular left second molar, there was a carious lesion present at the level of the cemento-enamel junction. Given the amount of dental wear observed, it was suggested that these teeth came from an individual aged approximately 45 years or more.

SF45 Context 002

1. A very few fragments of human bone including one fragment of metacarpal shaft.

2. Five inhumed human teeth from the permanent dentition (two canines, one premolar and two molars). There was a moderate degree of occlusal wear present on the molars, on the basis of which it was suggested that they came from an individual aged approximately 40 years or more.

SF46 Context 002

1. A fragment of inhumed human cranium.

2. A small sample of inhumed human bone; fragments of long bones (in particular the femur), two metacarpal shafts, ribs, phalanges (feet) and a pelvic fragment were identified. All of the bones could be aged as adult.

3. Four inhumed human teeth from the permanent dentition (a mandibular fight first molar, two mandibular incisors and a canine). There was a slight degree of occlusal wear present, on the basis of which it was suggested that they came from an individual aged approximately 20-25 years.

SF52 Context 002

A very small sample of inhumed human bone, all of it

in a fragmentary condition. The evidence of the teeth suggested that the material came from an adult individual.

SF55 Below context 002

A small sample of inhumed human bone, all of it in very poor condition. Examination of the teeth showed that there were a minimum of two individuals present, although one was only definitely represented by a single tooth. There were also a few fragments of burnt bone identified as probably human, but not conclusively so.

Individual 1

Sex: ?Female: skeletal size (femur and scapula fragments).

Age: 35-45 years: dental wear.

Individual 2

Sex: -

Age: 7-9 years: dental development.

SF56 Context 002

An adult mandibular premolar tooth with a moderate degree of occlusal wear.

SF62 Context 002

A small sample of cremated human bone; fragments of skull, teeth and proximal phalanx (hand) were

identified. There was no evidence for the presence of more than one individual.

Sex: -

Age: Adult.

Colour: Mostly white with a small amount of blue-grey.

Total weight: 130g

SF63 Context 002

1. Three inhumed human teeth (all canines) from the permanent dentition. The state of the teeth suggested that they came from an adult individual.

SF73 Below context 002

1. A small sample of inhumed human bone; fragments of skull, long bone shaft, one radius shaft, and femoral shaft were identified.

   Sex: ??Male: bone robustness.

   Age: Adult.

2. Eight inhumed human teeth from the permanent dentition (one incisor, four premolars and three molars). There was a severe degree of occlusal wear present, on the basis of which it was suggested that they came from an individual aged approximately 35-45 years.

SF76 Context 002

1. A very small sample of inhumed human bone from an adult individual.

2. Seven inhumed human teeth from the permanent dentition (one canine, two premolars and four molars). There was a severe degree of occlusal wear present, on the basis of which it was suggested that they came from an individual aged approximately 45 years or more.

SF77 Context 002

1. A small sample of cremated bone; fragments of skull, teeth, long bones and proximal phalanx (hand) were identified. There was no evidence for the presence of more than one individual.

   Sex: -

   Age: Adult.

   Colour: White.

   Total weight: 310 g.

2. Three inhumed human teeth, two of them from the deciduous, and one from the permanent dentition.

   Sex: -

   Age: a) 6-8 years: dental development.

   b) Adult.

SF81 Context 002

1. A few bone fragments, possibly animal rather than human.

2. Six inhumed human teeth from the permanent dentition (one incisor, one canine and four molars). There was

a moderate degree of occlusal wear present, on the basis of which it was suggested that they came from an individual aged approximately 20-30 years.

SF102 Context 002

A small sample of cremated human bone; fragments of skull and long bones were identified only. There was no evidence for the presence of more than one individual.

Sex: -

Age: Adult.

Colour: Mostly white with a small amount of blue-grey.

Total weight: 240g.

SF105 Context 002

A very small sample of cremated human bone; one fragment of skull was identified. There was no evidence for the presence of more than one individual.

Sex: -

Age: -

Colour: Mostly white with a small amount of blue-grey.

Total weight: 70g.

SF108 Context 002

A small sample of cremated human bone; no specific bones could be identified. There was no evidence for the presence of more than one individual.

Sex: -

Age: -

Colour: Mostly white with a small amount of blue-grey and black

Total weight: 330g.

SF109 Context

A single inhumed human tooth (premolar) from the permanent dentition. There was a moderate degree of wear present on the occlusal surface, which suggested that this came from an adult individual.

SF110 Context 002

A single inhumed human tooth (canine) from the permanent dentition. The degree of wear suggested that this came from an adult individual.

SF111 Context 002

1. A very small sample of inhumed bone from an adult individual; fragments of scapula, metacarpal and phalanges (hands and feet) were identified. All of the material could be aged as adult.

2. Five inhumed human teeth from the permanent dentition (two incisors, one canine and two premolars). There was a moderate degree of occlusal wear present, on the basis of which it was suggested that they came from an adult individual.

SF112 Context 002

A small sample of cremated human bone; fragments of

teeth, long bone and phalanges were identified. There was no evidence for the presence of more than one individual.

Sex: -

Age: Adult.

Colour: Mostly white.

Total weight: 220g.

SF114 Context 002

A small sample of cremated human bone; fragments of skull and long bone shaft were all that could be identified. There was no evidence for the presence of more than one individual.

Sex: -

Age: -

Colour: Mostly white with a small amount of blue-grey.

Total weight: 210g.

SF117 Context 002

1. A very small sample of inhumed human bone

2. An inhumed mandibular first premolar tooth from an adult individual.

SF127 Context 002

A single fragment of inhumed human bone and a canine tooth from an adult individual.

SF128 context 002

A small sample of inhumed human bone; fragments of

skull, vertebrae, rib and a phalanx were identified.

Sex: -

Age: Adult.

SF130 Context 002

A very few fragments of inhumed human bone and a fragment of molar tooth; all from an adult individual.

SF212 Context 002

A very few fragments of inhumed human bone from an adult individual.

Miscellaneous cremated bone, Context 002

Various fragments of burnt bone, probably all of human origin although there were no specifically identifiable fragments to support this.

The Molluscs

by Christine Howard-Davis

A small sample of snail shells were retained from context 002. It represented the complete, or almost complete shells of not less than 172 individuals. From this samples six common and widespread species were identified and two further species recognised but not identified.

The best represented species was Cepaea, with both C.hortensis (represented largely by its yellow unbanded form) and C.nemoralis present. Helix aspersa, Cernuella virgata?, Oxychilus allianus and Trichia hispida? were also represented; of these H.aspersa was present in the greatest numbers.

All of these species are now widespread and occupy a wide range of habitats.

C.hortensis and C.nemoralis were common species in the Sub-boreal and are often found in association on Neolithic and Bronze Age sites, although their modern distribution suggests that they are now in competition (Evans 1972). They occupy a wide range of habitats, from high plateau downland and limestone grassland to woodland, hedgerow and marsh.

O.allianus, although rare in the South at this phase, was more widespread in the North and is now ubiquitous, favouring a woodland habitat.

Although C.virgata is known to be an alien species the date of its arrivalis archaeologically uncertain and thus no conclusion can be drawn from its presence. H.aspersa is also an introduced species and its arrival can be attributed to deliberate introduction by the Romans in the first century AD (Evans 1972).

The widespread distribution of the species identified from the sample and their catholic range of habitat, can add little to any attempted reconstruction of the landscape surrounding the monument at Manor Farm, and the presence of H.aspersa in fairly large numbers must presumably indicate that the snails entered the overlying cairn subsequent to its construction, either finding the loosely piled stones a desirable habitat or after death, carried in the soil.

Report on the buried soil.

Helen C.M.Keeley [22]

Present-day soils in the Borwick area form the Carnforth Association, i.e. freely drained gravelly brown earths, some calcareous brown earths and peaty gleys and peaty soils in hollows. pH is normally 6 to 7, with some soil pH higher than 7.

The buried soil beneath the cairn was a truncated stagnopodzol with a pH of 7.35. The Eag, Bf and Bs horizons were present but the lack of a topsoil and relatively high pH suggested that pollen analysis of the soil would be unproductive. Similarly, detailed soil analysis was unlikely to add to the interpretation of the site and was therefore not pursued. The development of podsolised soils on such gravels is not unusual and may indicate that the vegetation at the time the cairn was constructed was acid grassland or moorland. The soil pH would have been on the acid side at this stage, rising subsequently due to downward leaching of the calcium carbonate from the overlying limestone of the enclosure.

The plant remains.

Marijke van der Veen [23]

The absence of earth-filled structural features or easily identifiable graves precluded any systematic sampling programme for environmental evidence. However, two samples for the analysis of carbonised plant remains were collected from each of the two in situ inhumations (SF55 and SF73). The samples consisted of the sediment associated with the burials which included the matrix of the overlying cairn (context 002), and were processed using manual flotation into an 0.5 mm mesh sieve. The sample sizes and results are given in Table 1.

The evidence was minimal: only three fragments were found, none of which could be adequately identified. In sample 1, one grass seed was found, but it was badly preserved and could not be identified to genus. In sample 2, one cereal grain was found, again too badly preserved to distinguish it as either wheat or barley. The Polygonum sp. seed from sample 4 again is too fragmented to allow an identification to species level.

The relevance of the analysis of plant remains from burial sites as against habitation sites, can be rather limited, as the origin of the material is often poorly understood. However, so little is known about the crop-plants from the early Bronze Age, that even simple presence/absence data are useful at this stage. It was therefore considered important to collect flotation

samples from these two burials, Unfortunately, the evidence was too sparse to allow interpretation.

Reports on the plant remains from burials of only three other British sites are known to the writer: Whitton Hill, Northumberland (Van der Veen 1985), late Neolithic; Trelystan, Powys (Hillman 1982), early Bronze Age; and Abingdon, Oxfordshire (Jones 1978), middle Bronze Age. All three concern cremation burials. In the samples from Whitton Hill and Abingdon, cereals were present in addition to seeds of wild plants. In the Trelystan sample no crop remains were present, but a large quantity of charred culm nodes and rhizome fragments of grasses with seeds of wild plants were found. In this last case, the plant remains are thought to have derived from grass and other plants growing beneath the pyre, or from grass used as tinder to light the pyre (Hillman 1982). The plant remains from Abingdon and Whitton Hill (site 1) are usually interpreted as having derived either from the burning of the pyre, or from other ritual practices, and not from domestic activities near-by (Balkwill 1978, Jones 1978, Van der Veen 1985).

Whilst it is possible to envisage several activities that may produce carbonised plant remains on cremation sites, this is more difficult for inhumation sites. On the latter sites one is more likely to deal with residual plant material. The very abraded nature of the few seeds found at Manor Farm points in that direction. So far too

little work has been done on either cremation or inhumation sites to be able to assess whether or not the near absence of plant remains in the Manor Farm samples is a common feature on inhumation sites.

TABLE 1: CARBONISED SEEDS FROM MANOR FARM

Context	SF 55		SF 73	
Sample	1	2	3	4
Volume (in litres)	36	28	36	16
Species				
Gramineae indet.	1	-	-	-
Cerealea indet.	-		-	-
Polygonum sp.	-	-	1	-