Report 2075

LONGBRIDGE DEVERILL COW DOWN : SECOND PRELIMINARY REPORT
ON THE PETROLOGICAL EXAMINATION OF POTTERY

Examination by thin section of a further nineteen sherds of Iron Age ware allowed the following divisions on the basis of temper inclusions:

Fabric 2 (cont.)

Nos. 35, 44, 50, 51, 52 and 54.

Fabric 3 (cont.)

Nos. 33, 61 and 63.

Fabric 4 (cont.)

No. 65.

Fabric 6 (cont.)

Nos. 59 and 62.

Fabric 11

Nos. 66, 67, 68 and 69.

Uniform inclusions of subangular quartz, average size 0.20mm., and a number of grains of collophane.

Fabric 12

No. 60.

Large inclusions of fossiliferous shell together with fragments of limestone. A small amount of subangular quartz, average size below 0.10mm., is also present.

Fabric 13

No. 64.

Inclusions of fossiliferous shell and subangular quartz, average size 0.30-.40mm., together with a large piece of grog.

Fabric 14

No. 43.

12 July 1976

Inclusions of fossiliferous shell, limestone and subangular quartz, average size 0.20-.30mm.

Fabric 15

No. 42.

Inclusions of subangular quartz, average size 0.20-.40mm. A small number of grains of collophane are present.

In order to see if the local Gault clays to the north-west of the site were being utilized for some of the Cow Down wares, a sample of Gault was obtained from the neighbourhood of the Crockerton mediaeval kiln (Hurst,1968), some one and a half miles from Cow Down, together with samples of pottery recovered from the kiln. The sample of Gault was baked and sectioned for study under the petrological microscope in the same way as the pottery.

In thin section both the sample of Gault and pottery from the kiln revealed an optically anisotropic matrix containing uniform inclusions of subangular quartz grains, average size below 0.10mm., and muscovite. Also present in both sections are a number of grains of collophane, which may be associated with phosphatic nodules present in the Gault (Reid,1903,39). The mineralogy thus suggests that the local Gault was used in the production of the Crockerton mediaeval wares.

A re-examination of the Cow Down sections revealed that Fabrics 1, 2 3, 9, 11 and 15 also include grains of collophane in varying amounts. In addition, the inclusions of quartz in those sherds making up Fabric 1 are of a similar size to these in the Gault and pottery sections from Crockerton, and may suggest an origin for this group in that area.

The other Fabrics mentioned above may also be made from the local Gault clay, though with a different temper employed in each case. It should be pointed out, however, that collophane is a fairly common mineral, and a different clay or clays might equally well have been used for all the fabrics mentioned here.

The fossiliferous shell inclusions of Fabrics 12, 13 and 14 indicates the Jurassic ridge as a likely source for the clay. The nearest Jurassic outcrop to Cow Down lies some five miles to the west of the site.

Discussion

If the collophane noted in the sections above is an indication that the vessels concerned were made from the local Gault clay, then it seems likely that all the fine wares and about half of the coarse jars from the earlier deposits were made at or near the site (this includes the scratched cordon bowl, no. 35, Fabric 2; comparative samples from Danebury and Gussage not yet available). Moreover, Houses I and II share a common origin for much of the pottery, Fabrics 1, 2, 3 and 4 containing samples from both Houses. The petrological results of the haematite wares from Cow Down and Eldon's Seat, Dorset, where local production was also suggested (Cunliffe and Phillipson, 1968, 206-207), indicates in both cases a domestic industry producing for local requirements. This view contrasts with the analysis of haematite pottery from Meon Hill and All Cannings Cross, where due to the presence of ferruginous grit, these wares were not thought to have been made at either site and, moreover, were suspected of having a common origin (Liddell, 1937, 23).

The situation of a number of local centres producing haematite wares on the one hand, and some mechanism of trade on the other hand which allowed some of these distinctive wares to enjoy a relatively wide distribution, seems to be confirmed by the analysis of haematite pottery from Gussage (Wainwright, forthcoming). The majority of the haematite wares

were considered mineralogically to have been made locally, however, there were a small number characterized by oolitic inclusions which were in all probability made at some distance from the site.

It would also seem likely that the fine pedestal jars and medium jars from Pits 37 and 41, and the saucepan pot from Pit 22 were made locally. The samples from Pits 5, 31 and 41 can for the most part be differentiated in temper inclusions from the pottery from the Houses, the exception being Fabric 6 which contains two coarse jars from House II as well as two coarse (?) jars from Pit 37.

Inclusions of fossiliferous shell, ooliths and limestone, pointing to an origin in the Jurassic ridge, are found in pottery from both Houses and from the four Pits. During the earlier periods these inclusions are confined to the coarser vessels.

D.F. Williams, Ph.D.,

Department of Archaeology,

University of Southampton.

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Wainwright, G.J. (forthcoming) Gussage All Saints

TABLE I

	Enclosure II, House I. 8th c.	Enclosure II, House II. 6th c.	Pit 5. 5th c.	Pit 37 5th c.	Pit 41 5th c.	Pit 22 2nd c.
Fabric 1*	1,3,5,13,15,16,17,20, 21,22,24,26	55	–	–	–	–
Fabric 2*	7,8,9,11,18,23,35,44	49,50,51,52,53,54,56	–	–	–	–
Fabric 3*	27,28,29,31,32,33	61,63	–	–	–	–
Fabric 4**	4,30,34	65	–	–	–	–
Fabric 5**	–	–	36	37,38	–	–
Fabric 6**	–	59,62	–	39,40	–	–
Fabric 7**	–	–	–	41	–	–
Fabric 8**	45,46	–	–	–	–	–
Fabric 9*	–	47,48	–	–	–	–
Fabric 10	–	58	–	–	–	–
Fabric 11*	–	–	–	66	67,68,69	–
Fabric 12**	–	60	–	–	–	–
Fabric 13**	–	64	–	–	–	–
Fabric 14**	–	–	–	–	–	43
Fabric 15*	–	–	–	–	–	42

* Gault(?)

** Jurassic

LONGBRIDGE DEVERILL COW DOWN : A PRELIMINARY REPORT

Examination by thin section of forty- one sherds of Iron Age ware allowed a division into ten fabric varieties:.

Fabric 1.

Nos. 1,3,5,13,15,16,17,20,21,22,24,26,55 (Plus Peter Partridge's three samples A,B,C). Numerous grains of subangular quartz, average size about 0.06-0.1mm. A small amount of muscovite is also present.

Fabric 2.

Nos. 7,8,9,11,18,23, 49,53,56.

Abundant grains of subangular quartz, ranging in size from about 0.1mm. to 0.4mm. Also present are small amounts of flint and muscovite.

Fabric 3.

Nos. 27,28,29,31,32.

Rounded quartz grains average size 0.2-0.55mm., also some very large fragments of flint.

Fabric 4.

Nos. 4,30,34.

Numerous grains of quartz, average size below 0.01mm. , although a few larger pieces (up to 1.1mm.) are also present. Some quartzite, a little muscovite and an occasional large fragment of flint are to be found. The fabric is distinguished by the presence of limestone.

Fabric 5.

Nos. 36,37,38.

The predominant temper is shell, and it is possible to see some recrystalization of calcite suggesting it is fossiliferous. Ooliths are also present, and small quantities of sandy limestone and quartz occurs within the clay matrix.

Fabric 6.

Nos. 39,40.

The temper consists entirely of fossiliferous shell, with a small quantity of quartz occuring within the clay matrix.

Fabric 7.

No. 41.

Fossiliferous shell occurs in some quantity, together with numerous grains of subangular quartz, average size between 0.1-0.2mm.

Fabric 8.

Nos. 45,46.

Frequent inclusions of ooliths, with small quantities of sandy limestone and quartz.

Fabric 9.

Nos. 47,48.

Subangular grains of quartz, average size between 0.3-0.5mm.

Fabric 10.

No. 58.

Quartz, reasonably rounded, average size below 0.2mm.

Little can usefully be said at this stage regarding the possible origins of the sand tempered wares, however, the remaining fabrics containing either limestone, fossiliferous shell or ooliths, all indicate the Jurassic ridge as a likely source for the clay. The nearest Jurrassic outcrop to Longbridge lies some five miles to the west of the site.

It is clear from the above results that the answers to certain problems can be put forward :

Problem 1 a) The fabric of the fine bowl wares does vary within each location's bowl-sherds (Fabrics 1 & 2).

b) It also varies to some extent from one location to another (Fabric 9, House 2), but there are fine bowls from Houses 1 & 2 in Fabrics 1 & 2.

Problem 2 Of the ten samples analyzed from the series of large fine ware jars (nos. 13-26), nine belong to Fabric 1 and one to Fabric 2. We can assume, therefore, that the agencies making the fine ware bowls also produced the large fine ware jars.

In addition, the pottery from pits 5 & 37 is quite different in fabric from that of the Houses, the former (nos. 36-41) being characterized by it's shell tempered nature (not flint as suggested).

D.F. WILLIAMS Ph.D.

An Examination of the White Inlay on the Pottery

An X-ray power diffraction examination was made on a sample of white inlaid decoration taken from a large haematite-coated jar (for an explanation of the method involved see Bimson, 1969). The pattern formed from this sample reasonably matched the A.S.T.M. Calcite standard (File no. 5-0586). No indication of the presence of phosphate was given (Cunnington, 1923,33), though the exposure may have been too faint to pick up an amount below 10%. In view of this possibility a phosphate spot test was also undertaken (Schwarz, 1967), but recorded a negative result, indicating that phosphate was not present in the sample. In this respect it is apparent that the Longbridge sample is similar to nos. 5 and 6 from All Cannings Cross (ibid., 198), which also showed the white inlay on certain Iron Age vessels to be composed almost entirely of calcite.

A.S.T.M. American Society for Testing Materials.

Bimson, M. (1969) 'The examination of ceramics by X-ray power diffraction', Studies in Conservation , vol. 14,(1969), 85-89.

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D.F. WILLIAMS Ph.D.

LONGBRIDGE DEVERILL COW DOWN, WILTSHIRE

Sherds for Petrological Analysis

Enclosure II, House 1 (Probably 8th century BC)

Furrowed bowls, haematite coated

1. PH 63 - Black furrowed bowl sherd, ?burnt, still shiny outside.
2. PH 139 - Base sherd of fine furrowed bowl, surfaces weathered (Fig.3
3. PH 151 - Base sherd of furrowed bowl, surfaces weathered
4. PH 151 - Base sherd of coarse furrowed bowl, surfaces weathered, visible flint inclusions.
5. PH 152 - Base sherd of fine furrowed bowl, interior eroded, exterio haematite and polish survives.
6. PH 152 - Base sherd from thick furrowed bowl, or large jar?
7. PH 154 - Base sherd from fine furrowed bowl, slightly burnt, purplis haematite outside and in.
8. PH 154 - Rim and neck sherd of furrowed bowl, blackened but not much weathered.
9. PH 154 - Rim and neck sherd of large furrowed bowl, thick, weathered inside and out, with visible flint.
10. PH 154 - Sherd from neck of furrowed bowl, burnt and blackened, surfaces damaged.
11. Topsoil - Rim and neck sherd from large furrowed bowl, surfaces weathered, visible flint.
12. Topsoil - Shoulder sherd of furrowed bowl, haematite survives on exterior and interior surfaces.

Large fine-ware jars, exteriors haematite coated and decorated with excised geometric patterns inlaid with white paste

13. PH 154 - DN 2, fig. 47. Body sherd with border stripe.
14. PH 151 - DN 3, fig. 43-4,46. Body sherd, blackened by fire.
15. PH 151/2 - DN 4, Fig. 56-9. Blackened body sherd
16. PH 151 - DN 4a, Blackened body sherd with border stripe.
17. PH 151/2 - DN 5, fig. 37-8. Sherd from neck angle, haematite surfac remains outside, blackened inside.
18. PH 152 - DN 6. Weathered body sherd. Visble flint. From near base of vessel.
19. PH 154 - DN 7, fig. 48,51. Weathered body sherd.
20. PH 152/3 - DN 8, fig. 50,54-5,48. Rather weathered body sherd with diagonal stripe.
21. PH 152/3 - DN 8, fig. 50,54-5,48. Blackened sherd with stab pattern and border stripe, plus some white inlaid material survitin
22. PH 42 - DN 11, fig. 49. Blackened body sherd.
23. PH 151- DN 15, fig. 52-3. Body sherd with some haematite, partly blackened.
24. PH 165 - DN 25. Neck sherd, slightly weathered.
25. PH 129 - Body sherd with haematite and border stripe with white inla
26. PH 237 - DN 27. Two body sherd with reamins of decoration and ? white inlay?, haematite surface remains.

Jars in coarser fabric

27. PH 154 - DN 1. Piece of base with heavy gritting and flint. Weathered. Best preserved parts of vessel were coated with haematite outside.
28. PH 235 - DN 3. Body sherd from thick coarsely gritted jar, ? the same as that from PH 154? Weathered.
29. PH 151 - Coarse body sherd from jar with finger-tip decoration.
30. PH 151 - Body sherds from 'gritty' jar once perhaps with haematite on exterior.
31. PH 153 - shoulder sherd from very coarse jar, weathered; much grit all sorts.

32. PH 225 - Sherd from upper body of medium coarse store jar, ? second period.

33. PH 151 - Medium coarse handle fragment. (To be returned)
34. PH 235 - sherd from the rim of a barrel or bowl shaped vessel, to be returned.
35. PH 235 - Sherd of scratched cordon bowl, an intruder in this period. (NB potentially the latest haematite type from the site). To be returned.

Enclosure II, pit 5 (probably late fifth century).

36. pot 2 fig 1 - rim sherd from shallow bowl, shell gritted, smooth surface.

37.

pit 37 (probably late 5th century).

37. pot 5 fig 1 - body sherd of shallow bowl, shell gritted, smooth coated
38. pot 1 fig 6 - body sherd of large flint gritted store jar.
39. pot 4 fig 4 - body sherd of large black jar.
40. pot 3 fig 5 - buff sherd, body of flint gritted coarse jar.
41. pot 2 fig 7 - body sherd , buff flint gritted jar.

pit 22 (probably 2nd century)

42. pot 1 - body sherd, black saucepan pot.
43. pot 3 - body sherd, black decorated bowl.

LONGBRIDGE DEVERILL COW DOWN, WILTSHIRE

Sherds for Petrological Analysis,

PART II

Enclosure II, House 1 (continued)

44. PH 151 - Base sherd from haematite-coated jar with furrowed rim (Fig.1)
45. PH 151 - Rim sherd, medium coarse ware
46. PH 152 - Base sherd from friable coarse vessel

Enclosure II, House 2 (Shape No ?)

47. PH 134 - Sandy-textured tall-necked haematite-coated bowl (Fig.1)
48. PH 134 - Furrowed sherd from sandy-textured haem.-coated bowl (Fig.2)
49. PH 137 - Rim sherd of tall-necked furrowed " " " bowl (Fig. 15)
50. B XXIV - Neck sherd of furrowed bowl (Fig.7)
51. PH 126 - Furrowed shoulder, probably from bowl fig.13.
52. PH 137 - Rim sherd from tall-necked furrowed bowl, fig.9.
53. B XXIV - Rim sherd from tall-necked bowl, fig.25.
54. PH 126 - Plain body-sherd from tall-necked furrowed bowl, fig.12
55. PH 137 - " " " " " " " " , fig.10
56. PH 135 - Furrowed sherd from tall-necked bowl, DN/3
57. PH 126 - Base sherd from tall-necked furrowed bowl, fig.6
58. PH 135 - Sherd from very large coarse bowl, fig.27

LONGBRIDGE DEVERILL COW DOWN, WILTSHIRE

Sherds for Petrological Analysis

Part III

Enclosure II, House 2 (Probably 6th century)

Jars in coarser fabrics

59. PH 137 - Big f-t dec jar, smooth fabric, ?shell/limestone temper. Fig. 44

60. PH 137 - Yellowish f-t dec jar, smooth texture, ?shell/limestone temper. Fig. 54

61. PH.126 - Medium coarse jar, ? flint/limestone temper. Fig. 37

62. PH 147 - Small f-t dec. jar, apparent;y shell tempered. Fig. 2[illegible]

63. BXXIV(2) - Big, coarse, f-t dec. store jar, visible flint grits. Fig. 38.

64. PH 204 - Small f-t dec. jar, medium coarse, ? shell/limestone. Fig. 30

65. PH 136 - Base of large coarse f-t dec. jar, visible quartz, flint and ?limestone grit.

Enclosure II, Pit 37 and 41 (similar forms and fabrics, prob. 5th c.)

66. PIT 37 (3) - Sherd from fine pedestal jar, (cf. the eg. from Pit 5 now at Devizes)

67. PIT 41 (1) - Sherd from fine pedestal jar, as above. Fig. no. [illegible]

68. PIT 41 (1) - Sherd from medium jar. Fig. no. 2.

69. PIT 41 (1) - Sherd from medium jar. Fig. no. 3

Purbeck Shell Bed Samples

C.D. 60 SFNo. 15

C.D. 58 B X WH2

8.12.1975

Longbridge Deverill Cow Down

Pottery Samples for Analysis

PROBLEMS
For Solution

Problem 1 We have fine wares, viz. rilled bowl sherds, from Houses 1, 2, 3, 4, Pit complex 5 (?=House 5), WH3, and II Enclosure Ditch filling; also scattered other locations. Does the fabric of these bowl wares vary: (a) within each location's bowl-sherds, and (b) from one location to another?

NB that (a) The series as a whole, allowing for time-gaps within it, is obviously C14, agreeing with archaeological expectation, to span at least 3 centuries of absolute time.

(b) The series of bowl-forms represented, though keeping throughout the idea of a drinking-bowl, -cup, and also keeping throughout the haematite coating that simulates bronze, yet shows distinct variations: most of all in the height of the rim, and angle of eversion of this, but also in the number and quality of execution of the rillings.

Problem 2 House 1, unlike the site's other houses, has not only its series of the bowls/-cups, considered under Problem 1, but also large jars with incised and white inlaid ornament, cut into their surface which itself has been haematite-coated. Their fabric appears very similar to that of the bowls/-cups; and though their mean thickness of wall may be somewhat greater, it yet approximates closely to that of the larger bowl/cup specimens. Is this visual observation confirmed by the fabric-analysis? Sparse inclusions of grit from pounded flint can be seen in the jar-sherds; yet these can also be seen in the larger bowl-sherds. As a whole, this House 1 pottery gives the impression of a single 'service', for people whose ideal was a 'service' in bronze, so were upper-class people, supplied by specialised potters.

We must append to Problem 2, and therefore call Problem 2a, the identification of the white material inlaid in the jar's decoration. On the similar-looking material so inlaid at All Cannings Cross, Mrs. Cunnington did a special Note, ACX (1923) pp.197-8. The material must have been applied as a paste, before the firing of the jars; and she refers to her p.33, describing some perforated pot-bases, incrusted inside with a white material, residue of ancient contents - in some cases exuded through the perforations on to the outside, and sometimes not confined to the base but present on the whole interior. She states (still p.33) that analysis shows the material 'to consist of calcium carbonate, with a considerable quantity of calcium phosphate, traces of iron oxide and alumina, and a small amount of finely-divided silica' '(does not show any organised structure under the microscope)'. She therefore says 'It is probable that the deposit is 'a bone residue'. Its appearance 'almost exclusively on vessels with perforated bases' makes her think it was placed in these 'to drain off superfluous fluid'; so her Note on p.197 indicates the probability that the vessels were 'used in the preparation of the inlay for the ornamented pottery'. Having previously surmised that these pottery jars were made on site, from clay brought from a distance (see her pp.29-30), she suggests that this inlay-preparation confirms that they were made on site. She gives the analysis-results obtained by her chemist on six samples of the inlay, from six fragments where this had remained in place (pp.197-8): nos. 1-3 were 'practically identical' with the deposit on the perforated pots; no. 4 had the calcium phosphate in small amount only, nos. 5-6 had none of it. Firing of the jar could remove or at least would diminish the phosphate, diminished no doubt already by the burning of bones to use in the material - i.e. (as her chemist told her, p.197) the heat-treatment would send a lot of it off as volatile phosphorus.

So her conclusion seems to have been that the inlay was mostly chalk powdered in with bone-ash; the chalk gave the white coloration, the bone-ash also the necessary glutinous adhesiveness. On the continent, where white inlay was similarly used in the same broad period - Late Bronze to Hallstatt Iron Age, notably in Switzerland (lake-side dwelling-sites) and adjacent E. French and S.W. German areas - though the tradition goes right back to the Neolithic, I have a reference to bone-ash shown by analysis for a Swiss Neolithic inlay; this was of 1946, and there may be others more recent. The problem is therefore (2a) whether anything more can be said from our Longbridge samples, to add to or modify the findings from All Cannings Cross, or anywhere else, so that Longbridge results could perhaps be offered as definitive.

[illegible]

PROBLEMS FOR SOLUTION

Problem 3 In Houses 1-4 and 4B we have variable quantities of medium to coarse fabrics in addition to the fine bowl wares. Were they using the same clay with different backing?

Problem 4 With pit 37, 41 and 5 we start our 'B' or Middle Iron series of fabrics. Superficially all the fabrics appear different from what has gone before. Does this appear in analysis.

Problem 5 The latest pit on the site is Pit 22, and perhaps contemporary is the pottery from the Enclosure III primary ditch silt. Between pit 37 etc., apparently 5th c. and 22, apparehtly 2nd, we have a limited series of transitional forms. At some point we should perhaps test whether the fabrics in these three centuries vary at all significantly.

Problem 6 How many, if any of these wares, were industrial products imported from a distance. It has been suggested, for example, that the so-called scratched-cordoned bowls, were just subh a group. We have, alas, only the one sherd from this phase, your sample no 35. It would just be interesting to know how it compares with similar bowl fabrics from Gussage and Danebury.