

DUNG-TEMPERING? A LATE NORSE CASE STUDY FROM CAITHNESS

David R. M. Gaimster

Department of Medieval and Later Antiquities, British Museum, London

Summary

Large assemblages of Late-Norse vegetal-tempered pottery have been recovered in recent excavation and survey projects in Caithness. This paper examines the need for complementary experimental archaeology and refined scientific characterisation if our understanding of the organisation of local pottery manufacture is to be more clearly understood.

Introduction

The practice of vegetal tempering in hand-made earthenware - as opposed to grass 'marking' or wiping of vessel exteriors (cf. Ivens 1984, 77-79) - is a common trait in the Late Norse ceramic tradition. The presence of this material is well documented in northern and western Scotland, and forms a substantial component of the pottery assemblages from Jarlshof, Shetland (Hamilton 1956, 187-189), Kirkwall, Orkney (MacAskill 1982, 405-413), the Brough of Birsay, Orkney (Curle 1982, 89-90) and the Norse-period settlement at Freswick, Caithness (Curle 1939, 103-106). The Late Norse deposits at Jarlshof suggest a 12th century to early 14th century date for the material. The ascription of the vegetal-tempered wares from Freswick Castle, Caithness (Batey, Morris and Rackham 1984, 115), to the 11th to 13th centuries further emphasises the longevity of this tradition. The similar hand-made Craggan wares of the Hebrides and West Highlands of Scotland continued in production to as late as the mid-19th century (Quail 1979, 39-46), as the shortage of trees in these areas prevented the manufacture of wooden vessels common to the Scottish Lowlands.

A multi-season programme of field survey and excavation by a team from the Department of Archaeology, University of Durham, encompassing both Freswick and its immediate hinterland, has produced large assemblages of vegetal-tempered pottery from comparable Late Norse midden contexts (Batey *et al* 1983). This grass-, straw- or chaff-tempered material generally conforms in form to the cooking ware-type illustrated in Figure 1. Yet, despite large corpuses of published examples from the sites mentioned above, no study of the manufacture of this kind of pottery has been undertaken. The Freswick groups have at last provided the opportunity - in the light of recent ethnoarchaeological and experimental research - to examine this question in more detail.

The Fabric

The fabric is usually pink-brown or buff in colour with reduced grey cores and/or internal surfaces. It is hard, sandy and micaceous, with very fine to fine common translucent quartz grits. Virtually all sherds display chopped vegetal impressions, usually in the form of elongate voids, on both exterior and interior surfaces and are clearly visible within the clay matrix itself.

Out of a sample of 28 sherds submitted to J. Huntley of the Department of Botany, University of Durham, 26 were identified as containing distinct oat-grain impressions; and almost all had differing combinations of oat-, barley-, grass stem/leaf- and grass seed-shaped voids.

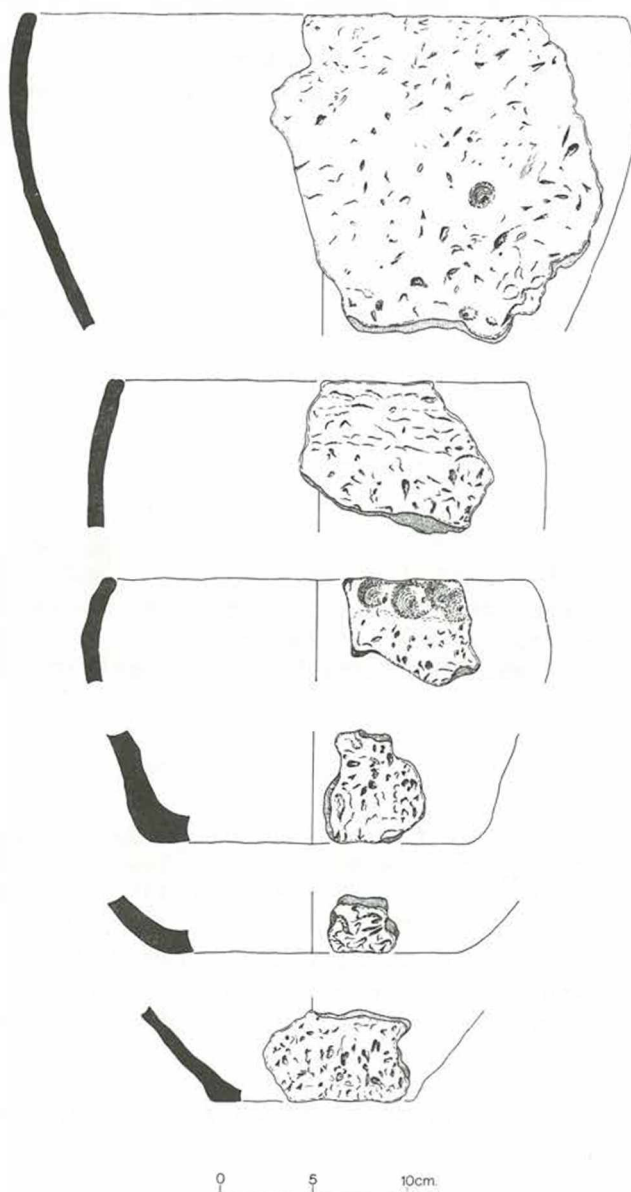


Fig. 1. Vegetal-tempered ware from Freswick, Caithness (scale 1:4).

Dung?

Until now very little, if any, scientific characterisation of vegetal tempering in archaeological ceramics has been carried out. In the case of the Freswick material, however, the size and nature of the burnt-out voids pointed to the possible incorporation of animal dung into the potting clay.

Ethnographic research in Central India (Miller 1985, 37, 212-214) and Eastern Europe (Filipović 1951, 157), for instance, has shown animal dung to be a common tempering agent in handmade domestic earthenware. In these two examples, dung (from a donkey in the former case) is seen as a convenient

source of chopped straw, improving the plasticity of the clay and thereby reducing the likelihood of fracture during firing. The identification of plant stems and root fragments in medieval bell-moulds from England and Italy (Blagg 1974, 133-149) also suggests the incorporation of animal dung as a binder. Once dried and crushed, its regular dimensions would have ensured its easy kneading into the clay matrix. Recent experimental firings (London 1981, 189-195) have further emphasised the efficiency of dung as a temper. In the case of thick-walled cooking vessels, such as those from Freswick, the openness of the walls allows the thicker zones of the pot to fire more efficiently.

Testing

Despite research into the potential of dung tempering, there has been no controlled comparison between experimental material and the pottery from archaeological contexts itself. Armed with J. Huntley's organic identification, Mike Stokes of the Herbert Art Gallery and Museum, Coventry, undertook to use a sample series from Freswick as a control in a programme of experimental vegetal and dung tempering.

A series of vessels were fired incorporating a combination of clay and raw dung (horse), dung with hay only and dung with oats only. A horse was stabled and its diet regulated to achieve this, so that the hay and the oats emerged 'part-processed'. It was clear from the resulting grain and husk impressions on the fired pots that those with the dung/oats filler were most akin to the Freswick sherds. Other vessels containing uneaten oats did not burn out as cleanly and left very indistinct surface evidence. The results of this experiment make it highly likely, therefore, that the Late Norse pottery from Caithness was made with a dung temper, the dung having been probably gathered from a stabled animal (to have produced such a quantity of grain impressions).

A degree of caution must be added here, however, as the factor of post-depositional change cannot really be assessed fully at present.

Further Work and Implications

The final publication of the faunal assemblages from Freswick will give us a much clearer idea of the species of animal being farmed and/or stabled in the Late Norse settlements. When this is known more specific experimentation will be possible. It is interesting to note, however, that of the Late Norse faunal remains at Jarlshof (Platt 1956, 212-215) and at Freswick (Platt 1939, 109) the pony bones were the best represented.

As yet the potential of phosphate analysis on organically-tempered ceramics has not been fully realised. It is hoped that further work will involve the use of scanning electron microscopy. The technique has the capability of isolating variations in elemental concentration in relation to identifiable organic impressions over very small areas of a sherd. Complementary scanning of purely vegetal-tempered wares should act as a control against the identification of gut-processed material.

But why the need for such precision? Let me answer this by suggesting that the refined characterisation of organically-tempered wares offers the only means by which we can understand the organisation of this type of pottery manufacture. The use of animal dung - especially that from a stabled animal,

as the seed and stem impressions on the Freswick samples seem to suggest - has enormous implications for the interpretation of Late Norse ceramic production and consumption. The poor durability of the ware, evident in the extreme fragmentation of the Freswick assemblages, suggests that this was a domestic product and almost certainly not imported into the region. Dung, available all year round from the stable or byre (whereas other organic materials are frequently confined to certain seasons of the year), was minimal in cost and preparation. Its use may possibly have mitigated against the need for a local potter in such small communities.

Acknowledgements

The author wishes to thank Dr C. E. Batey of the Department of Adult Education, University of Leeds, for permission to publish this material in advance of the final report. The work was undertaken as part of a post-excavation programme at the Department of Archaeology, University of Durham, financed by the Ancient Monuments Inspectorate, Scottish Development Department. Many thanks are also due to Mike Stokes, Assistant Field Archaeologist at the Herbert Art Gallery and Museum, Coventry, for examining samples of pottery from Freswick and for permission to use the results of his experimental work, to Mavis Bimson, Department of Scientific Research, British Museum, who advised on the potential of phosphate analysis, and to Jacky Huntley, Department of Botany, University of Durham, who identified the seed and grass impressions.

REFERENCES

- Batey, C.E., Jones, A.K.G., Morris, C.D., Rackham, D.J. and Rains, M.J., 1983. Freswick, Caithness. Excavations and Survey at Freswick Links, 1981-82 (Durham)
- Batey, C.E., Morris, C.D. and Rackham, D.J., 1984. 'Freswick Castle, Caithness: report on rescue excavations carried out in 1979', Glasgow Archaeological Journal, Vol. II, 83-118
- Blagg, T.F.C., 1974. 'The Bell Casting', in T.F.C. Blagg, H. Blake and A.T. Luttrell, An Umbrian Abbey: San Paulo di Valdiponte Pt. 2, Papers of the British School at Rome, Vol. XLII, 99-178
- Curle, A.O., 1939. 'A Viking settlement at Freswick, Caithness', Proc. Soc. Antiqs. Scot, 73, 71-110
- Curle, C.L., 1982. 'Pictish and Norse Finds from the Brough of Birsay 1934-74. Soc. of Antiquaries of Scotl Number 1
- Filipović, M.S., 1951. 'Primitive ceramics made by women among the Balkan peoples'. Serbian Academy of Science Monograph of the Ethnographic Institute, Vol. 181, Pt. 2 (Belgrade) 157-70
- Hamilton, J.R.C., 1956. 'Excavations at Jarlshof, Shetland', Ministry of Works Archaeological Reports, No. 1 (Edinburgh)

- Ivens, R.J., 1984. 'A note on grass-marked pottery'. The Journal of Irish Archaeology II, 77-79
- London, G., 1981. 'Dung-tempered Clay', Journal of field Archaeology, Vol. 8, no. 2 (Boston) 189-195
- MacAskill, N., 1982. 'The Pottery', in N.A. McGavin, 'Excavations in Kirkwall, 1978, Proc. Soc. Antiqs. Scot., 112, 392-436
- Miller, D., 1985. Artefacts as categories: a study of ceramic variability in Central India (New Studies in Archaeology) (Cambridge)
- Platt, M.I., 1939. Report on the Animal Remains, in A.O. Curle, 'A Viking Settlement at Freswick, Caithness', Proc. Soc. Antiqs. Scot., 73 (1938-9), 71-110
- Platt, M.I. (the late), 1956. Report on the Animal Bones, in J.R.C. Hamilton, 'Excavations at Jarlshof, Shetland', Ministry of Works Archaeological Reports, No. 1 (Edinburgh)
- Quail, G., 1979. 'Craggan Ware', Scottish Pottery Society Archive News No. 4, 39-46

