

Palynological investigations at two Bronze Age burial sites in Fife

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ABSTRACT

During the excavation of Bronze Age cists in eastern Fife, samples were obtained for pollen analysis. One cist, at Upper Kenly Farm, contained a Food Vessel from which scrapings were taken. Unlike such vessels at Ashgrove and North Mains, this one yielded no particularly informative pollen. Samples from the floor of the cist were no more productive. Material from similar locations, obtained from two cists at Dalgety Bay, yielded very low concentrations of damaged pollen from grass, plantain and, probably, hazel. In contradistinction, high concentrations of meadowsweet pollen, some of an immature nature, were recovered. This apparent aberrance cannot be explained by contamination of samples during the excavations. A probable explanation is that flowers of meadowsweet were deposited in the graves, as a ritual practice, at the time of burial. This raises the question of why the Kenly cists contained no such 'tribute'. The burials there could have been deposited in winter; thus it may be necessary to interpret the absence of floral tributes not as evidence of a lack of ritual practice but as a consequence of the time of death and interment.

INTRODUCTION

The discovery and excavation of two Bronze Age burial sites in Fife, at Upper Kenly Farm and Dalgety Bay, allowed palynological investigations to be undertaken on two different types of material. As all of it was dominated by a siliceous content, the samples were prepared for analysis by treatment employing hydrofluoric acid as well as Erdtmann's acetolysis (Faegri & Iversen 1989). Microscope slides for pollen examination were produced using silicone oil (12,500 cSt viscosity) as the mounting medium.

UPPER KENLY FARM (NO 571124)

At Upper Kenly Farm, the cist contained a Food Vessel but due to acidic conditions the burial had not survived (Proudfoot 1985). From the surface which formed the floor of the cist, seven samples of material were recovered and submitted to pollen analysis. The results of this analysis revealed an extremely restricted range of pollen taxa at very low concentrations (7 ×

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10^2 to 10×10^3 grains per cm^{-3} sediment). The dominant taxon from each sample was Gramineae (grasses) but in three samples this only amounted to one pollen grain in 0.5 cm^{-3} of material analysed. All of the pollen grains were badly folded and corroded and it is notable that the pollen taxa accompanying the Gramineae were *Corylus* (hazel), *Plantago lanceolata* (ribwort plantain), Compositae tubuliflorae and liguliflorae (dandelion, daisy family), Cruciferae (cress, charlock family), Filicales (ferns), *Alnus* (alder) and *Calluna vulgaris* (heather), all of which are extremely resistant to decay. It would seem, therefore, that the cist at Upper Kenly Farm was excavated to a depth below that to which most pollen had infiltrated during pedogenesis on the site. The cist, moreover, had been scrupulously cleaned out before burial took place or greater concentrations of pollen would have been encountered. One pollen grain which seemed to be aberrant was a single representative from a cereal, probably *Hordeum* (barley), a feature also met in a Bronze Age cist from Bridge of Don (K J Edwards pers comm).

As noted above, the cist held a Food Vessel which contained no organic detritus but on its sides there are some black stains. From such areas scrapings were taken to see whether there were any parallels with the vessels from Ashgrove (Dickson 1978) and North Mains, Strathallan (Barclay 1983), that had apparently contained honey or mead and a fermented drink respectively. The Kenly analysis was disappointing in this respect, yielding only 17 pollen grains from four separate scraped areas, with grass and hazel being the predominant taxa.

DALGETY BAY (NT 155834)

At the Dalgety Bay site, two cists were excavated. Both contained skeletons each of which lay on a pebble floor and one also yielded a bronze dagger (Proudfoot 1986). Samples were taken from material on the floor and from the clay luting in the corners and top edges of the cists. The latter material contained no pollen at all whereas the other samples produced pollen taxa similar in kind and in state of preservation to those recovered from the Upper Kenly Farm cist, again indicating pollen which had had a long sojourn in the soil. In addition to those pollen taxa, however, a further one was identified which raised interesting parallels with the Ashgrove and Strathallan burials. In four of the samples analysed, two from each cist, high concentrations (14×10^3 to 27×10^3 grains per cm^{-3} sediment) of *Filipendula* (meadowsweet) were present. The occurrence of this pollen taxon in the Ashgrove and Strathallan cists was hypothesized as being related to the fragrance of the flowers of this plant. In the Ashgrove case it is likely that the honey or mead may well have included meadowsweet in order to enhance its flavour, while at Strathallan the same effect would have been imparted to the fermented drink. At Dalgety Bay, however, another explanation for the presence of the pollen is required.

In his analysis of the Ashgrove site, Dickson (1978) suggested, besides the honey/mead hypothesis, two further possible reasons for the presence of the *Filipendula* pollen, and these must also be considered for the Dalgety Bay occurrence. The first of these highlights the palynologist's continuing nightmare that the analysed samples had been contaminated by modern pollen from locally growing plants during the excavation period. This explanation, as for Ashgrove, is extremely unlikely. Not only is the pollen degraded but the excavation took place at a time when *Filipendula* was not in flower. Deposition of the pollen grains by natural dispersion during the digging of the grave is also unlikely as the pollen of other taxa is extremely sparse, especially of Gramineae which release large amounts of pollen. An extremely important feature in this whole consideration is the nature of the *Filipendula* pollen in the cist. Among the pollen identified as meadowsweet are large percentages (up to

50%) of immature pollen grains which suggests that the pollen came from plants in the early stages of their flowering. This brings into focus the second reason put forward by Dickson, ie that flowers were placed in the grave for sentimental or other reasons, perhaps of a ritualistic nature. Dickson quotes examples from continental Europe where such practices seem to have taken place. On the other hand, Dimbleby, in his work on the palynology of archaeological sites, wrote that *Compositae liguliflorae* pollen found in a Late Bronze Age barrow in the New Forest has 'in lighter moments' been suggested as 'a floral tribute of some sort laid at the construction phase of the barrow', and that that is the nearest he had come to finding pollen evidence of the last rites (Dimbleby 1985, 149). The suggestion being put forward here is that the *Filipendula* pollen at Dalgety Bay provides much surer evidence. The placing of flowers in graves as part of funerary rites has been commented on from the palynological aspect by Renault-Miskovsky (1989) and is a practice which has very early antecedents, as is shown by the well-known example from Shanidar discussed by Leroi-Gourhan (1968; 1975).

DISCUSSION

Two main conclusions may be drawn from the palynological investigations of the Upper Kenly Farm and Dalgety Bay cists. First of all, despite the lack of positive pollen results from the Upper Kenly Farm cist, it should be regarded as routine excavation practice to take samples from the floors of cists for pollen analysis. Secondly, it must be asked why, if meadowsweet or other flowers were put into graves as some sort of floral tribute during the Bronze Age, the cists at Dalgety Bay show evidence of that custom while that at Upper Kenly Farm does not. Is it a sign of variation in funerary practice? Or is there a more prosaic reason than that? It is conceivable, and perhaps most likely, that the people buried at Dalgety Bay died during the period when meadowsweet was in flower whereas the interment at Upper Kenly Farm took place outside the period May to August. If that is the case then time of death, in some circumstances, can perhaps be more accurately pinpointed than has been previously thought possible.

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REFERENCES

- Barclay, G J 1983 'Sites of the third millennium BC to the first millennium AD at North Mains, Strathallan, Perthshire', *Proc Soc Antiq Scot*, 113 (1983), 122–281.
- Dickson, J H 1978 'Bronze age mead', *Antiquity*, 52 (1978), 108–13.
- Dimbleby, G W 1985 *The Palynology of Archaeological Sites*. London.
- Faegri, K & Iversen, J 1989 *Textbook of Pollen Analysis*. 4th edn. Chichester.
- Leroi-Gourhan, A 1968 'Le Néanderthalien IV de Shanidar'. *Bulletin de la Société Préhistorique Française*, CRSM, 3 (1968), 79–83.
- Leroi-Gourhan, A 1975 'The flowers found with Shanidar IV, a Neanderthal burial in Iraq'. *Science*, 90 (1975), 562–4.
- Proudfoot, E V W 1985 Upper Kenly Farm (Kingsbarns parish) *Discovery Excav Scot*, (1985), 15.
- Proudfoot, E V W 1986 Dalgety Bay (Dalgety Bay parish) *Discovery Excav Scot* (1986), 9.
- Renault-Miskovsky, J 1989 *Spores & Pollen*. La Duraulié, Cabriés.