

A. R. Hall, H. K. Kenward, D. Williams and J. R. A. Greig, *Environment and Living Conditions at Two Anglo-Scandinavian Sites*. The Archaeology of York: The Past Environment of York 14/4. Council for British Archaeology, London 1983. 83 pages, 1 plate, 21 figures, numerous tables, 1 microfiche.

The joint authors of this publication which is a fascicule of volume 14 of The Archaeology of York series of the York Archaeological Trust, have attempted a comprehensive analysis of the plant – both pollen and macrofossil – and animal – especially insect – remains from two small excavations in the rich Anglo-Scandinavian town of York. (Detailed accounts of larger fauna are awaited.) The excavations in question – 5–7 Coppergate and Pavement – were small in scope and conducted in cellars under conditions of extreme difficulty. The Coppergate sondage was a c. 4 × 3 m trench dug by workmen beneath a cellar floor which revealed some wattle and post-and-wattle remains and rich organic matter. The Pavement excavation consisted of four small trenches, also in cellars, which revealed a succession of post-and-wattle buildings. Only one, Trench IV, was fully bottomed and eleven phases were noted. Regrettably, no complete houseplan was established. It was one of the hopes of the archaeologists that environmental evidence would give a key to interpreting the sites that excavation failed to provide.

Because of the comparative haste with which the excavations had to be conducted, the sampling methods for environmental material proved with hindsight to have been less than satisfactory for the demands which the authors of the present volume were subsequently to make of them. Some block samples were found to have poorly preserved pollen. At the Pavement site, the environmental samples taken layer by layer, were not more precisely located – their representativeness therefore may well have been questionable. One of the great services performed by the authors is the unanswerable case which they state for the close integration of the work of the environmentalist and archaeologist and the clear indications, which they give, of the limitations of the evidence of biological sciences for archaeological interpretation without further study on open sites with clearly defined structures. On such excavations for example, the faunal evidence of ancient exteriors and interiors may be established and compared. Insects associated with rotting matter were found inside the Pavement structures. Conditions outside however may have been more foul. Despite the careful and impressive integration of faunal and floral evidence, the authors were unable to provide a substitute for the shortcomings of the archaeological evidence.

The authors were faced with a difficult task given the limitations of the excavations and the variety of imponderables with which they had to reckon. York is situated at the confluence of two rivers, the Ouse and the Foss. There was marshland adjacent to the Anglo-Scandinavian settlement. Inevitably there was constant interaction by way of trade and exchange with the hinterland and the sea coast. There were, within the town, beasts and fowl depositing dung. Human beings were responsible for the build-up of the rich deposits of organic matter so characteristic of the early medieval towns of northern and northwestern Europe. They were contributing to it both as living organisms and as industrial workers – the detritus of whose activities was dumped nearby – and as importers of feed and litter for beasts. An especially import-

ant part of the study (Table 55, p. 194) is a summary of a tentative model of the deposition of material – mineral and organic – on the floor of an early medieval building. Even in its summary form, it cannot be seen as other than a complex process raising problems for the environmentalist and archaeological excavator alike. The rate of decay of timbers bedded in rich organic soils is considered (p. 190) and the likely life-span is judged to have been quite short. This conclusion must be challenging to archaeologists who excavate in similar conditions and who have argued for longer occupancies of houses. The discussion of the incorporation of cereal grains in straw thatch is just one of the arresting points of detail which should inspire caution in the future in dealing with evidence of potential food remains (pp. 207–208). Nevertheless, cereals were consumed as the evidence of a coprolite of human origin showed (reported on in an appendix by A. K. G. Jones). This interesting note demonstrates that at least one early medieval inhabitant of York suffered from an infestation by two species of intestinal worm – somewhat severe by modern standards 'but well within the limits of human tolerance'.

The value of this study does not stand or fall by whether the authors were able to establish in any detail the use of the structures partially uncovered at the Pavement site or to shed significant light on human activity at the smaller Coppergate trench. They are candid in their concluding remarks in stating that while 'environmental archaeology is essential to the full understanding of urban sites its full effectiveness depends upon extensive excavation and close co-operation between excavators and environmental archaeologists throughout'. They insist on the need for a clear understanding of the relationship of a sample to a layer and the use of appropriate sampling strategies. They look forward to the application of their results to the larger, open Coppergate site. The environmental report on that excavation will be eagerly read.

Dublin

Michael Ryan