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Summaries of papers, supplied by authors

Medieval carbonised plant remains

from the deserted village of West Cotton, Northamptonshire

Introduction

The excavation at West Cotton is one of several being carried out as part of the Raunds Archaeological Project (R.A.P.). Work had been taking place on archaeological sites in the area since 1975 when this project was set up in 1985. Both the Northamptonshire Archaeological Unit and the Central Excavation Unit are involved in excavating a number of sites within the project area over five years. These sites include a Bronze Age barrow cemetery at Irthlingborough, a Roman villa and associated settlement at Stanwick, a deserted medieval village at West Cotton and a medieval manor house complex in Raunds. I have been overseeing the day to day running of the environmental programme for the Project on the various sites in summer and sorting flots and identifying the carbonised seeds throughout the year.

West Cotton dates from the late Saxon/early Norman period through to the 15th century, when it was rapidly deserted. There is little later disturbance of the site. It is one of a series of deserted medieval settlements in this area of the Nene Valley known from documents and field survey. Associated with these villages are two manor houses in the extant village of Raunds: (i) Furnells, dug from 1977 to 1981, and (ii) Burystead, the excavations of which are continuing in 1987.

West Cotton is being excavated in advance of the construction of the new A45/A605 road and only the road 'corridor' was dug in the first two years. This resulted in the part-excavation of three plots fronting a green but as yet we have no complete view of any one plot. All the samples I have analysed therefore are from the buildings in the frontages of the plots. Further excavations now in progress should ensure that samples from the backage of at least one of these plots will be available by 1988.

A sampling policy was adopted to ensure a good representation of all types of context and feature. The policy had been devised so that the results from each site within the Project should be as closely comparable as possible. The carbonised plant remains were recovered by flotation and this was carried out locally to the site.

The crop plants

A range of cereals has been identified including both free-threshing hexaploid and tetraploid wheats, six-row barley, rye and oats. As seems usual for medieval sites, grains were the most abundant cereal remains.

The identification of a free-threshing tetraploid wheat Triticum turgidum/durum (rivet/macaroni wheat) is of particular significance. As there is no evidence that Triticum durum was ever grown as a crop in this country (and would presumably be an uneconomic, unsuccessful crop) it is assumed that the tetraploid wheat represented on this site is T. turgidum. This was identified from spikelet forks, with the help of Lisa Moffett of the University of Birmingham. In the samples from West Cotton where spikelet forks are identifiable to either the tetraploid or hexaploid form, the tetraploid type seems to predominate, but they are always outnumbered by spikelet forks that cannot be identified more closely than to Triticum sp. The grains of wheat recovered are mostly quite dumpy, high-backed forms which resemble compact-grained versions of free-threshing hexaploid wheat (Triticum aestivum s.l.). However Lisa Moffett has recently commented that differentiating free-threshing hexaploid from tetraploid wheat by the grain is very difficult and may not be possible. Nevertheless there remains the possibility that rivet wheat was the more important wheat, and therefore the dominant crop on site since wheat remains are the commonest crop remain so far. As the possible occurrence of T. turgidum in archaeological assemblages has previously rarely been considered, it is important to be aware of the possibility of its presence on other medieval sites.

There were three structures excavated which have been interpreted as malting ovens. From one, a quantity of sprouted grain was recovered - both barley and oats. The other two ovens did not have this high predominance of sprouted grain. All the ovens did show a range of other remains, however, including various cereal grains, legumes and Brassica sp.. The ovens also contained many chaff fragments and weed seeds. This has implications as to whether these structures had one use or a variety, one of which was malting. Each oven was rigorously sampled from front to back, including the rake-out, so that more detailed work on them can be undertaken if necessary.

The legumes mentioned above are present all over the site. A few of them have been identified as Vicia faba (field bean) and a few as Vicia sativa (common vetch). Unfortunately it is usually impossible to place most of the smaller ones in a more definite category than Pisum/Vicia/Lathyrus due to the lack of surviving hila. Nevertheless, the majority of them seem a bit small for peas and there remains the possiblility that Vicia sativa was cultivated as a crop. No legume processing waste was found on the site.

There is evidence of foods other than cereals and legumes. Brassica sp. seeds were abundant in one oven. They were also found mineralised in a cess pit at Furnells (Mark Robinson, pers. comm.). These occurrences suggest a specific use of these seeds rather than a presence simply as a weed. Brassica sp. does not seem to fit into the habitat types otherwise represented by the assemblage of weed seeds, which also raises the possibility that the Brassica was a cultivated crop. Even if the seeds are not Brassica nigra (black mustard) they could still have been used as a mustard flavouring.

Other indications of food are the presence of two apple (Malus sylvestris) pips from a floor level and occasional finds of fragments of hazelnut (Corylus avellana) shell.

A few carbonised seeds of flax (Linum usitatissimum) were recognised. The importance of this crop at West Cotton is emphasised by the discovery of waterlogged flax-retting debris from test bore holes into a silted former river channel adjacent to the site.

Preliminary ecological interpretation

Carbonised seeds have been identified from a fairly large proportion of the samples taken from the medieval levels on this site and preliminary work has started on interpreting the plant communities represented by the weed seeds present and how they reflect the soil types in use. This work is based on information about the British ecology of the plants from Clapham, Tutin and Warburg (1952), Silverside (1977) and Mark Robinson's extensive knowledge.

Taken as a whole, the plant assemblage appears to be one associated with arable cultivation, especially of autumn-sown cereals and on soils of relatively low fertility (Order: Centauretalia cyani Tx.).

Apparently at least two major soil types are represented:

(i) heavier calcareous claylands, suggested especially by the presence of Anthemis cotula (stinking mayweed) and Odontites verna (red bartsia) which are of common occurrence in most of the samples; and

(ii) sandy, or sandy-loam soils of a circum-neutral nature as indicated by the presence of Medicago lupulina (black medick), Spergula arvensis (corn spurrey) and Rumex acetosella (sheep's sorrel). The last two species represent an acidophilous component of the flora of these soils. The absence of a full range of acid-ground weeds, however, suggests that the cultivated area did not include acidic soil.

There is also the possibility that a light, well-drained calcareous soil type is represented, but disguised by the other two assemblages.

It appears that cultivation extended up to the edge of wetter, marshy land as evidenced by the persistent presence of low amounts of Eleocharis palustris (common spike-rush) nutlets - both silicified and carbonised. It is suggested that this indicates wetter land on the edge of fields as opposed to waterlogged furrows in ridge and furrow cultivation because, when the latter are cultivated nowadays Mark Robinson (pers. comm.) has noted that Polygonum persicaria (persicaria) is often the most abundant weed. In the remains at West Cotton, P. persicaria is almost completely absent.

Identification notes

Fruits (mericarps) of a large-fruited umbellifer from West Cotton which had proved very difficult to identify were eventually tracked down to Scandix pecten-veneris (shepherd's needle). These fruits had been noted but not identified from several Roman and medieval waterlogged sites (e.g. Robinson in Miles 1986, 34). They were thought possibly to be an alien species of Chaerophyllum until it was realised by Mark Robinson that the plant grown as S. pecten-veneris in several British botanic gardens which had supplied archaeobotanists with reference fruits was in fact S. australis, which has rather smaller fruits. The archaeological specimens were only correctly identified when compared with herbarium material of S. pecten-veneris, where the identity of the plants could be checked.

The carbonised fruits of S. pecten-veneris had usually fragmented, but they could still be recognised by their large size, their ribs and the fact that, unlike most umbellifer fruits when charred, the dorsal surface is convex along its length and the ventral surface is longtudinally convex on either side of the median furrow.

References

Clapham, A. R., Tutin T. G. and Warburg E. F. (1952). Flora of the British Isles. Cambridge: University Press.

Miles, D. (ed.) (1986). Archaeology at Barton Court Farm, Abingdon, Oxon. London: Council for British Archaeology.

Silverside A. J. (1977). A phytosociological survey of British arable-weed and related communities. Unpublished Ph.D. thesis, University of Durham.

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Plant remains from a late-Roman site in Bulgaria

The site of Nicopolis ad Istrum lies in Northern Bulgaria, 30 km south of the River Danube. The early Roman town, founded by Trajan, is thought to have been abandoned in the late 3rd century A.D., and occupation transferred to the strongly fortified enclosure or castellum, to the south-east. Literary sources indicate the survival of the town till at least the 7th century. Since 1985, British archaeologists have been carrying out a programme of research and excavation in the area of the castellum (Poulter et al. forthcoming). The aim is to provide information on the character of late-Roman urbanism in the region.

The areas excavated have been selected on the basis of results from geophysical and topographical surveys carried out in the first two seasons. Preliminary archaeobotanical

results show the presence of a wide variety of economic taxa, both as carbonised and mineralised remains. Fourth-century deposits contained evidence of einkorn (Triticum monococcum L.), durum wheat (T. durum Desf.), bread/club wheat (T. 'aestivo-compactum'), six-row barley (Hordeum vulgare L. var hexastichum), rye (Secale cereale L.) and millets (Panicum spp.). The pulses identified so far are lentil (Lens culinaris Medic.), pea (Pisum sativum L.) and bitter vetch (Vicia ervilia (L.) Willd.). Also present are remains of grape (Vitis vinifera L.), walnut (Juglans regia L.) and olive (Olea europaea L.). The olives found are likely to have been imported since the winter temperatures in this area were unsuitable for local cultivation. A site reference collection is being compiled to aid the identification of the weed seeds.

One of the problems of working in this area is that there is little comparative evidence available from other sites. Indeed, a second aim of the project is to provide well-stratified sequences of all classes of evidence to act as a standard for other excavations in deposits of this period. The only other site in the territory of Nicopolis to have produced plant remains from the 4th century A.D. is Krivina, on the Danube (Hajnalová 1982). However, there is no indication of any representative sampling strategy having been adopted at that site and the conclusion that rye was the predominant cereal consumed there is open to question.

Initial results have provided information about the history of plant use at Nicopolis. Further work should provide a more detailed picture of the past agricultural economy of this site and its territory and it is hoped that this will prompt studies at other sites in the region.

References

Hajnalová, E. (1982). Archäobotanische Funde aus Krivina. Pp. 207-35 in K. Wachtel et al., Iatrus-Krivina 2. Berlin: Academy of Sciences of the DDR.

Poulter, A. et al. (forthcoming). Interim report on excavations at Nicopolis. Submitted to Antiquaries Journal.

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The archaeological remains of flies

For determining fly puparia, I use mainly the shape and disposition of the posterior spiracular slits and the shape of the anal sclerite, since these require minimal preparation so that a considerable number of puparia can be examined quickly. The use of cuticular characters would greatly reduce the number that could be processed and, though it might help with some specific determinations, there is no certainty that this would result in more information on habitats and conditions. Records of larval habitats are often scanty and when there are many records they often indicate a wide choice of habitats.

Musca domestica L., the house fly, is the most numerous species in Roman, Anglo-Scandinavian and medieval deposits from various levels from excavations at 16-22 Coppergate and 24-30 Tanner Row, York. It has been recorded from a great variety of habitats and Oldroyd (1964) describes it as 'characteristic of household garbage in a primitive community'. I have found it associated with Stomoxys calcitrans (L.), a 'stable

fly'. This association has been recorded in modern populations, and appears to result from oviposition by M. domestica females in a mass of decomposing material, and by S. calcitrans in cracks in the drying surface of the mass. In the Coppergate material a large number of puparia was found in a mass of stem fragments of dyer's greenweed (Genista tinctoria L.). About 60% of these puparia were whole, i.e. the adults had not emerged (which activity involves pushing off the end of the puparium). It seems probable that the addition of new plant material to the deposits resulted in the deaths, perhaps by 'drowning', of puparia. Any larvae present would not have left recognisable remains, while adult flies emerging but unable to escape would not have left whole puparia.

Teichomyza fusca Macquart is another species that has been found in some numbers. The larvae live in cess pits, latrines etc. They have been reared rather unsuccessfully on urine-soaked sawdust, but did much better when faeces were also supplied (Vogler 1900). I have found this species attached to faecal concretions and associated with the sepsids Nemopoda sp. or Themira sp. or both, and with some species of Leptocera. It seems probable that all these can be taken to indicate really foul conditions. There has been confusion in the past between T. fusca and Leptocera zosterae; it appears, however, that both taxa occur in archaeological deposits.

Eristalis tenax (L.), the larvae of which are rat-tailed maggots, is another inhabitant of cess-pits and privies. I have found very few puparia, but considerable numbers of the mystery objects depicted on the cover of Circaea 3(1) (1985), which appear to be anterior spiracular processes from puparia of this or related genera, have been recorded during sorting for insect and plant remains. These puparia are not heavily tanned and are not usually preserved unless mineralised.

I have found a number of puparia of Melophagus ovinus (L.), the sheep ked. This is a wingless fly that passes its whole life history on the sheep, feeding on its blood. The female lays full-grown larvae which immediately pupate. Thus, the presence of puparia of this species must indicate some stage of wool processing, probably an early one, which results in combing them out.

There are a few puparia of Spilogona sp., whose larvae live in moss. These may indicate the use of moss as anal wipes and again be associated with privies, etc.

Finally, I have found no puparia of Calliphora sp. (blow flies) and only one of Sarcophaga sp. (flesh flies). The larvae of these flies live in flesh and their absence may indicate that no meat remains were allowed to lie about until larvae could pupate. Possibly such meat fragments were eaten by dogs or pigs.

References

Oldroyd, H. (1964). The Natural History of Flies. London: Weidenfeld and Nicholson.

Vogler, C. H. (1900) Beiträge zur Metamorphose der Teichomyza fusca. Illustrierte Zeitschrift für Entomologie **5**, 1-4, 17-30, 33-6.

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(Note added in proof: The identification of Eristalis anterior spiracles is discussed further by Hakbijl and Phipps in Miscellany in this issue of Circaea.)