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ROMAN CROPS AND GARDEN PLANTS FROM TIBBET'S CLOSE, ALCESTER.

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Summary

A selection of features were sampled for charred plant remains. Most of the material recovered represented cereals, chiefly spelt, barley and naked wheat, with some arable weeds. Some of the third century samples contained the seeds of plants which may have been garden plants including columbine (Aquilegia cf. Vulgaris), pea (Pisum Sativum) and asparagus (Asparagus officinalis). A medieval kiln/corn drier was also sampled, but the presence of glume wheat remains in this feature suggests that some of the material in it may be residual from earlier phases.

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By Lisa Moffett

About 30 features were sampled for charred plant remains during excavation, primarily with the simple object of seeing what was there. The charred plant remains from Roman Alcester are of interest not only as they relate to the developing town, but also because it is hoped eventually to be able to compare the results with two other, economically different, Romano-British sites in Warwickshire, one a village at Wasperton (Bowker, in Crawford and Bowker, forthcoming) and the other a town at Tiddington (Moffett in Palmer, forthcoming).

The samples from Tibbet's Close were taken from a variety of contexts in the different phases. Contexts were chosen for sampling purely on a 'judgement' basis (see van der Veen, 1984). Unfortunately, not all the sample sizes were recorded. The soil samples were processed by water flushing through a 1mm mesh sieve to remove sticky clay particles. The material retained on the sieve was dried and then 'bucket floated', decanting through a 0.7mm sieve, to separate the charred material from the mineral residue.

METHOD OF ANALYSIS

The site was too limited to attempt a distributional analysis of the charred remains. The emphasis, therefore, was on trying to obtain as complete a picture as possible of the species represented in the samples. Only items exposed to fire under reducing conditions will have been preserved and only some of those items will have been redistributed from the original place of charring into other contexts on the site. For practical reasons not all contexts were sampled and the samples taken were generally less than the complete deposit. These limitations typically apply to all sampling for charred plant remains on archaeological sites.

The samples were presorted by biotechnicians, and it was therefore possible to quickly scan through all the material that the samples contained. All the samples were scanned and 18 were selected for detailed analysis. The results are presented in Table BR. No attempt was made to present 'typical' samples, but rather to show the maximum amount of information while examining the minimum number of samples. The samples were chosen for detailed analysis for one of three reasons: (a) they had noticeably larger numbers of items (51/L/1, 46/1/1, 23/2/1), (b) they were contexts where the charred material could potentially have been *in situ* (hearth 44, and contexts 8 and 22 in the malting kiln/corn drier), or (c) they contained species not otherwise represented, or represented only by poorly preserved

specimens. This method of selection was possible because of the small number of samples and the relatively small number of items.

The malting kiln/corn drier from Phase IX was poor in charred remains. Context 8/8 was the earliest layer within the drying chamber of the kiln; 8/6 was part of the subsequent backfill. Contexts 22/4 and 22/7 were the lining walls of the flue, and their results were amalgamated for the sake of convenience.

THE PLANT REMAINS

Cereals. The majority of the plant remains found were the glume bases (the bases of the enclosing chaff parts) of wheat. Most of these were not identifiable beyond emmer/spelt (*Triticum dicoccum/spelta*) due to poor preservation and the morphological overlap between the two species. The glume bases that could be identified were all spelt. A few grains of hulled barley (*Hordeum* sp.) were also present. These two cereals are typical Romano-British crops and occur together on sites such as Ashville Trading Estate (Jones, 1978), Broad St., Abingdon (Jones, 1975) in the Upper Thames Valley, and elsewhere throughout southern England. A very large amount of spelt chaff was found in a layer at the Coulter's Garage site in Alcester (Colledge, in Booth, forthcoming) mixed with emmer chaff, a few club wheat rachis segments and a large number of wheat grains which could not be further identified due to germination. Although no emmer was found at Tibbet's Close, there are some free-threshing wheat grains which could correspond to the club wheat remains found at Coulter's Garage.

A single grain of possible rivet wheat (*Triticum* cf. *turgidum*) was found in the Medieval kiln. The grain is fairly short and plump, with a diagonally slanting embryo and a very high dorsal hump directly behind the embryo, which tails off in a curve down the back of the grain. These characters are typical of extreme forms of the free-threshing tetraploid group to which rivet wheat belongs (Hillman, pers. comm.). Rivet wheat has been found very infrequently on archaeological sites by comparison with bread wheat and the grains are usually extremely difficult or impossible to distinguish. This grain was identified tentatively as *turgidum* only because it exhibited extreme morphological characteristics and because a wheat of the *turgidum* group is known from its more characteristic rachis remains to have been present elsewhere in Alcester at roughly this period (Moffett, in Cracknell and Jones, forthcoming).

The other two species listed as cereals may in fact be weeds. Only a single rye grain was found, and its status, whether as crop or weed, is unclear. It is impossible to distinguish between wild and cultivated oats without the flower bases, which were absent in these samples. Cultivated oat (*Avena sativa*) was identified at Coulter's Garage (Colledge in Booth,

forthcoming), and it is possible that the oats at Tibbet's Close were cultivated, but the grains are very small and it is perhaps more likely that they represent a wild oat (*Avena fatua* or *A. ludoviciana*). Wild oats are aggressive and successful arable weeds even under modern farming conditions and seem to have been frequent weeds of crops in the past as well.

Pea. Peas (*Pisum sativum*), like other legume crops, generally tend to be under-represented in the archaeobotanical record as the methods of processing them do not require exposure to fire, at least until cooking. Peas turn up occasionally on Romano-British sites although rarely in quantity. They can be cultivated either as a field or a garden crop. Like other legumes, peas are nitrogen-fixing and can be a valuable field crop to grow in rotation with cereals. At Goathill villa, however, the peas were considered as a garden vegetable (Branigan, 1976). More locally, peas have also been found at Tiddington (Moffett, in Palmer, forthcoming).

Apple. A single, small, rather poorly preserved apple pip (*Malus* sp.) was found. It is not possible to say if this represents a wild or a cultivated apple.

Asparagus. As far as the author is aware, this is the first time charred asparagus (*Asparagus officinalis*) seeds have been found in an archaeological deposit. The natural habitat of wild asparagus is on dunes and coastal areas. The probably native British subspecies, ssp. *prostratus*, is rare. The cultivated subspecies, ssp. *officinalis*, occurs wild today as a garden escape, mainly on dunes and waste places, and this has made it difficult to determine if it has also ever occurred as a native (Clapham, *et al*, 1962). The presence of asparagus at Alcester, far from its preferred habitats, can be taken to indicate its deliberate cultivation as a vegetable.

The history of cultivated asparagus is rather obscure. Pliny mentions asparagus both as a vegetable and as a medicinal herb (Bostock and Riley, 1856). Cato gives careful instructions for the cultivation of asparagus (Hooper, 1936). Among these instructions he states that the asparagus bed should be burned over in the autumn after the asparagus has finished and gone to seed. Columella, writing in the 1st century, roughly three centuries after Cato, gives very similar instructions (Ash, 1977). Although both authors also say that the seed should be gathered first, it is possible that some of the seed-bearing fruits might be missed or the seed not collected every year if it were not needed. In that case seeds could become charred in the burning over of the asparagus beds and this would account for the presence of charred asparagus seeds in the soil. It is also possible that the

asparagus stalks were cut after they had run to seed and were burned as litter, perhaps in the hearth. It is interesting to note that Pliny, whose directions for the cultivation of asparagus are chiefly taken from Cato, concludes that the great care which Cato gives to this subject means that it was new to him, though it would not necessarily follow that asparagus cultivation was new in the Roman world.

Columbine. Columbine (*Aquilegia* cf. *vulgaris*) is mainly a plant of calcareous woodland. It occurs only rarely in Warwickshire today and is considered to be a garden escape (Cadbury, *et al*, 1971). Although there are calcareous clays within five kilometres of Alcester, the soils in the immediate vicinity of the town are less likely to have provided suitable habitats for the plant if it were growing wild. This suggests that columbine too may have been a garden plant.

Aquilegia is a rare find on archaeological sites. A single specimen was found in a late Saxon context at Winchester Cathedral Green (Monk, as cited in Green, 1979 p.122) and was interpreted as a garden plant. On the Continent, columbine has been found in later Medieval contexts at Neuss (Knorzer, 1968), and at Braunschweig and Gottingen (Willerding, 1984), again interpreted as a garden plant.

The columbine seed occurs in the hearth, which also contains four asparagus seeds. It is a great temptation to suggest that garden rubbish may have been burned in the hearth. The quantity of remains is not great, however, and this must remain speculation. At most, the association of columbine and asparagus in the hearth may provide some further support for a suggestion that columbine was a garden plant in Britain as early as the third century.

Arable weeds. Most of the non-cultivated species found are weeds of arable and disturbed ground. These were probably mostly harvested with the cereal crop. Even a wet ground species as *Ranunculus* cf. *lingua* could have grown in poorly drained areas of the crops field or in ditches at the field margins.

DISCUSSION

Most of the material in the various contexts is probably residual. Even features such as the hearth and the kiln which might have been expected to produce larger amounts of charred remains were poor in terms of numbers of items, and even in amount of wood charcoal, suggesting that little remained of any *in situ* burning.

The greatest concentration of remains came from the lower part of the Phase II layer, context 51. This had a considerable number of prime wheat

grains and unidentifiable cereal grains which were probably mostly wheat as well. There were also some glume bases, a rye grain, a few barley grains and a few weed seeds. This seems to be a somewhat mixed assemblage, but most of it may have originated as a processed and cleaned or semi-cleaned storage product which was accidentally burned, then dumped, and subsequently disturbed and redistributed by cultivation or other disturbance, since there was no recognisable deposit.

The assemblage in pit 46 may also be derived chiefly from a cleaned or semi-cleaned product, again probably wheat, but in this case less than half of the grains could be identified. By contrast, the material in pit 23 is mainly glume bases and might represent the 'fine sievings' by-product of glume wheat (in this case, spelt) processing (see Hillman, 1981 and 1984). The other contexts contain a scatter of material which has probably been redistributed from other deposits, although some of the hearth and kiln material may be primary.

It is unfortunately impossible to deduce a function for the Medieval kiln from the few plant remains present. The presence of glume bases suggests that some of what little material there is probably is residual from the Romano-British period, as there is, so far at least, no evidence that the glume wheats were grown in Britain in the post-Conquest Medieval period.

CONCLUSION

The cereals present in Romano-British contexts at Alcester, spelt and hulled barley, are practically ubiquitous on Romano-British sites in southern England. It is suggested that the material in two of the samples may have been derived chiefly from a cleaned, or semi-cleaned, spelt crop. Another sample, consisting mostly of chaff fragments and weeds with only a few grains, may be the by-product of a sieving process used to separate the grains from the smaller chaff fragments and smaller weed seeds. The limited amount of material, however, can only confirm the use of these crops and is not evidence of crop processing on, or immediately near, the site.

The presence of asparagus outside its native habitat suggests its deliberate cultivation as a garden vegetable, and it is likely that peas and columbine were also garden cultivars in third century Alcester. Although Roman horticulture is better known from documentary sources than from the archaeobotanical record, the number of garden species found on archaeological sites is increasing all the time and will doubtless continue to do so as more sites are investigated.

Phase:	II	III	III/IV	III/IV	III/IV	IV	V	VI	VI	VI	VI	VI	VII	VIII	IX	IX	IX	
Type of context:	layer	ditch	pit	pit	small hole	sill beam	layer	hearth (backfill)	hearth (burnt)	hearth (burnt)	hearth lining	small hole	pit	pit	kiln fill	kiln fill	kiln flue walls	
Context no.:	51/L/1	55/1/1	46/1/1	49/2/1	61/2/1	40/1/1	50/1/1	44/2/1	44/2/1	44/3/1	44/7/1	31/1/1	23/2/1	11/8/1	8/6/1	8/8/1	22/4&7	
Size of sample (litres):	9	5	6	*	*	10	*	10	*	*	7	8	9	*	*	8	7	Common name
	*=unknown																	
CEREALS																		
Triticum cf. turgidum type grains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	rivet wheat
T. dicoccum/spelta spikelet forks	7	-	-	-	-	-	2	-	-	-	-	1	2	-	-	-	-	emmer/spelt
T. dicoccum/spelta glume bases	26	5	2	2	-	6	2	-	5	5	-	3	30	-	3	6	3	
T. spelta rachises	-	-	-	-	-	-	-	-	-	-	-	-	1cf.	-	-	-	-	spelt
T. spelta glume bases	6+5cf.	-	1	2	-	2	1	1	5	1	1	-	10	2	4	2	-	
Triticum sp. free-threshing grains	-	4	2	-	-	1	-	-	-	-	-	1	-	1	-	2	-	naked wheat
Triticum sp. grains	89	2	9	4	1	2	4	1	-	1	-	7	-	-	5	2	1	
Triticum sp. germinated grains	8	-	-	-	-	-	-	-	1	-	1	-	-	1	-	-	-	
Triticum/Secale grains	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	wheat/rye
Secale cereale grains	1cf.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	rye
Hordeum sp. hulled grains	3	-	-	-	-	-	1	-	-	-	-	-	-	1	1	2	-	hulled barley
Hordeum sp. indeterminate grains	3	-	1	-	-	1cf.	-	-	-	-	-	-	-	1	-	-	-	
Avena sp. grains	1	-	-	-	-	-	-	-	1cf.	-	-	1cf.	-	-	-	-	-	(wild?) oat
Cereal indet. grains	80	4	17	4	1	4	4	2	3	5	1	-	3	1	2	3	2	
Cereal/Gramineae coleoptiles	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	sprouts
POSSIBLE GARDEN SPECIES																		
Aquilegia cf. vulgaris	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	columbine
Pisum sativum	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	pea
Malus sp.	-	-	-	-	-	-	-	-	-	-	1cf.	-	-	-	-	-	-	apple
Asparagus officinalis	-	9	-	-	1	-	-	1	-	3	-	-	-	-	-	-	-	asparagus
WEEDS																		
Ranunculus cf. lingua	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	great spearwort
Ranunculus sp.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	buttercup
Raphanus raphanistrum	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	wild radish
Chenopodium album/suecium	-	-	-	-	-	-	-	-	-	[illegible]	-	-	-	1	-	-	-	fat hen
Atriplex sp.	-	-	-	-	-	1	-	-	-	[illegible]	-	-	-	-	-	-	-	orache
Malvaceae indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1?	-	? mallow family
Medicago/Melilotus/Trifolium	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	medick/melilot/clover
Vicia hirsuta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	hairy tare
Vicia/Lathyrus	2	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	vetch
Polygonum aviculare agg.	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	-	-	knotgrass
Rumex acetosella agg.	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	sheep's sorrel
Rumex sp.	-	1	-	1	-	-	-	-	-	-	-	-	1	-	1	-	-	dock
Veronica hederifolia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	ivy-leaved speedwell
Galium aparine	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	cleavers
Galium cf. spurium	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	false cleavers
Anthemis cotula	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	stinking mayweed
Tripleurosperumum inodorum	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	scentless mayweed
Carex sp.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	sedge
Bromus sp.	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	brome
Gramineae indet.	6	-	4	1	-	3	2	1	-	-	-	1	1	-	2	2	1	grasses
Unknown	1	-	1	-	1	-	3	2	1	-	1	-	-	-	1	-	-	

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REFERENCES

Ash, B. H., 1977, (trans.) *Columella, De Re Rustica*, Loeb Classical Library, Heinemann.

Bostock, J., and Riley, H. T., 1856, (trans.) *The Natural History of Pliny*, vol. *IV*, Bohn.

Bowker, C., forthcoming in Crawford and Bowker, Wasperton excavation reports, *Transactions*.

Branigan, K., 1976, Villa Settlement in the West Country, *The Roman West Country*, Branigan and Fowler (eds.), David & Charles.

Cadbury, D. A., Hawkes, J. G. and Readett, R. C., 1971, *A Computer-Mapped Flora*, Academic Press.

Clapham, A. R., Tutin, T. G. and Warburg, E. F., 1962, *Flora of the British Isles*, 2nd ed., Cambridge University Press.

Colledge, S., forthcoming in Booth, *Store Buildings from Roman Alcester*.

Green, F. J., 1979, *Medieval Plant Remains: Methods and Results of Archaeobotanic Analysis from Excavations in Southern England with Especial Reference to Winchester and Urban Settlements of the 10th-15th Centuries*, unpub. M. Phil. thesis, Southampton University.

Hillman, G., 1981, Reconstructing Crop Husbandry Practices from Charred Remains of Crops, *Farming Practice in British Prehistory*, Roger Mercer, (ed.), Edinburgh University Press.

Hillman, G., 1984, Traditional Husbandry and Processing of Archaic Cereals in Recent Times, Part I: The Glume Wheats, *Bulletin of Sumerian Agriculture*, vol. *I*, Cambridge University Press.

Hooper, W. D., 1936, (trans.) *Cato and Varro, De Re Rustica*, Loeb Classical Library, Heinemann.

Jones, M., 1975, in Parrington and Balkwell, Excavations at Broad St., Abingdon, *Oxoniensia*, vol. *XL*

Jones, M., 1978, in Parrington, *The Excavation of an Iron Age Settlement, Bronze Age Ring-ditches and Roman Features at Ashville Trading Estate, Abingdon, (Oxon.) 1974-76*, CBA Research Report *28*.

Knorzer, K. H. and Muller, G., 1968, Mittlelalterliche Falklien-Fassgrube mit Pflanzenreste aus Neuss, *Rheinische Ausgrabungen 1*.

Moffett, L., forthcoming in Cracknell and Jones, Medieval Kiln Debris from School Road, Alcester (AL 13), *Transactions*.

Moffett, L., forthcoming in Palmer, Excavation report on the Romano-British village at Tiddington, *Transactions*.

van der Veen, M., 1984, Sampling for Seeds, *Plants and Ancient Man*, van Zeist and Casparie (eds.), Balkema.

Willerding, U., 1984, Palao-ethnobotanische Befunde und schriftliche sowie ikonographische Zeugnisse in Zentraleuropa, *Plants and Ancient Man*, van Zeist and Casparie (eds.), Balkema.