

# Colchester Archaeological Group



## Annual Bulletin

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## Colchester Archaeological Group

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### **Chairman's Introduction**

It is pleasing to report that, by any objective standards, the group has had another successful year. Membership has remained at or near its all time high, and the winter lecture programme has continued to be well attended and to attract interesting speakers on a wide range of topics. Increased revenue from subscriptions and events has meant that despite the continued rising cost of room hire, speakers and insurance, for the first time in several years we have been able to generate a small but significant cash surplus. The numbers taking part in the summer evening walks could justifiably be reported as hordes. Both the weekend visit to the South Coast, and the entire programme of summer activities were well attended, and we are grateful to those members who worked hard to organise these events and to ensure they were a success.

The wide range of field work activities undertaken has increased the opportunity for more members to become actively involved. Of particular importance has been the completion of the survey of the graffiti in Colchester Castle. This has occupied a determined if dwindling group of members for more than three years, and has resulted in a detailed archive of photographs, drawings and interpretative texts being handed over to the Museum. Our thanks are due to all those who worked so hard to make this project a success.

When one project stops another tends to start. With the help of significant grants from the Local Heritage Initiative and Colchester Borough Council, we have been able to start work on the World War II project. Under the guidance of Fred Nash from Essex County Council, members have begun the task of finding and recording over 150 sites which were known to exist within the rural borough of Colchester. The project is expected to last about two years, and will result in a complete record of exact position and condition of all the sites.

These, and the other activities reported in detail below, confirm the continuing contribution the group makes to local archaeology, and we must continue to show vigour and enthusiasm in responding to the opportunities offered us. The future, as they say, is bright, the future is.....well, if not exactly orange, at least a sort of earthy muddy brown colour.

John Mallinson  
Chairman

### **Editor's Note**

This is the first edition of the Bulletin to be produced digitally and you have chosen to receive this year's publication in that format. I hope you enjoy the advantages that the CD-Rom version brings. This includes the extended article on the geophysical survey at Gosbeck's by Tim Dennis, which appears in the printed publication in a much reduced version. There is also room to include more images in the digital Bulletin, and, as you will see, many of them are in colour. I think you will agree that seeing Tim and David in full technicolour on page 11 is alone worth having the CD-Rom.

If you are interested enough in a particular article to want a printed copy, then you may, of course, print it from the CD yourself. If you decide that you would like the whole printed version, then you may buy a copy for £3. Please contact the editor for further details.

Anna Moore  
Editor  
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### **Colchester Young Archaeologists' Club Report 2004-2005**

Pat Brown would like to thank all those involved in a range of activities over a very successful year.

In October we had a session identifying Roman pottery with Pauline Skippins, and in November finds from the Marks Hall fieldwalking exercise were identified, entered on a grid, and incorporated in Pat's report. Our Christmas party had an Anglo-Saxon flavour with appropriate food, a visit from Adrian and Susan Hutson in costume and a discussion on the clothes being worn and their significance. In January Jerry Bowdery, Curator of Natural History for Colchester Museums brought animal bones which were identified and drawn, and we put together a plastic pig skeleton. In February Sally Whelton led a pottery session, making Roman antefixes and lamps, in March a 17<sup>th</sup> century re-enactment group brought replica artifacts to represent the way of life for both rich and poor, together with clothes for dressing up. In May we made and played ancient board games. June brought an Anglo-Saxon theme again with a session led by Susan Hutson on textiles. Everyone got involved in tablet weaving and some good braids were produced. We spent a very pleasant day in West Stow in July.

YAC had displays at the Oyster Fayre and the event on a Second World War theme at St. Botolph's. We also had a display at the 'Park-It' event in September where the two sandpits containing a variety of artefacts were dug up with great speed and enthusiasm by children of all ages. Pauline and some of our older members helped them to identify the finds, while the rest of the team were kept busy instructing on proper use of trowels and re-burying artefacts at intervals. Everyone found something and the visitors got as much fun out of assisting us with the re-burying of artefacts as they did in discovering them! The day was a great success and judging by the interest in our activities we should have quite a few new members at our next meeting.

Blanche Anderton has taken over from Pat Brown as the Colchester Young Archaeologist Representative for the Council for British Archaeologists Young Archaeologists' Club purposes. She will also carry out administration of the Colchester Young Archaeologists with regard to membership, organization of trips, and communication with the CBA. Pat will continue to liaise with individuals and groups for our programme of activities.

Rita Bartlett

### **Graffiti Recording in Colchester Castle - A Final Report**

Mary Coe

The project to record the graffiti in the Castle has finally been completed, the last recording taking place on 13 July 2005. Two weeks later, on 27 July, Don Goodman, Janet Harrison and myself met up with Philip Wise in the Charles Gray room in the Castle, to hand over the record. The large number of photographs and record sheets will now be kept in the Resource Centre. What will happen next is yet to be decided, but it is possible that CAG members may be asked to undertake some of the analysis and research.

The project was done following a request from Peter Berridge and the first items of graffiti were recorded on January 2002. The whole of the interior of the Castle has been checked including the ground and upper floors, the vaults, the prisons and the two staircases. The only areas of the exterior included were those around the entrance and the roof, near the sycamore tree.

While the Museum was closed to the public in May 2005 we were given access to the two prison cells. This allowed us to have additional lighting and to work without disturbance to, or from, any visitors. Without this opportunity these cells may have had to be left out of the record which would have been disappointing, as some interesting items were found. At one time, after the prisons were no longer in use for their original purpose, the walls of the cells were whitewashed, perhaps covering some important graffiti. One cell had then been opened to visitors as can be seen by the amount of modern, ie post 1950, graffiti. Because of the lack of time available to us, and the similarity of many of the items, only a few sample areas were recorded.

The modern brick walling in the vaults was covered in graffiti, nearly all of it just initials or names, with or without a date. As with the prison cell this was all post 1950, with nothing that could be dated to the time when the vaults were used as an Air Raid Shelter. Half of one wall was fully recorded, but to do the rest would have taken a lot of effort with little reward. Because of this the remaining walls were only sampled by recording two bricks on each wall.

I would like to express my thanks to Don for co-ordinating this project, and to all the CAG members who have been involved. My thanks also go to the Museum staff who have been extremely helpful and shown an interest in the work. Finally, a big thank you to Peter Berridge for initiating this project. It has been a fascinating exercise, with the result that I can no longer enter a Church, Castle or other old building without scrutinising the walls.

## A geophysical survey at Gosbecks, Lambart's Farm area

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### Introduction

The section of Gosbecks Archaeological Park east of Oliver's Lane is less well-known than the area round the Temple and Theatre, but aerial photography shows that it too has a rich array of crop marks comprising ring ditches, linear features and more modern remains of former field boundaries.

A group of two of the ring ditches, one concentric, were selected as the target of the practical component of an archaeology course run by Howard Brooks of Colchester Archaeological Trust for the Learning Partnerships section at the University of Essex, the work to be conducted under English Heritage licence. Two one-day sessions were scheduled for early July 2005, with the aim of giving the students hands-on experience using a soil resistance meter and magnetometer. A preliminary magnetometer survey over the rings was done before the main sessions, which showed that the concentric ring set at least could be detected, but at low contrast. Topology surveys, both single-line and area, were also carried out by the students.

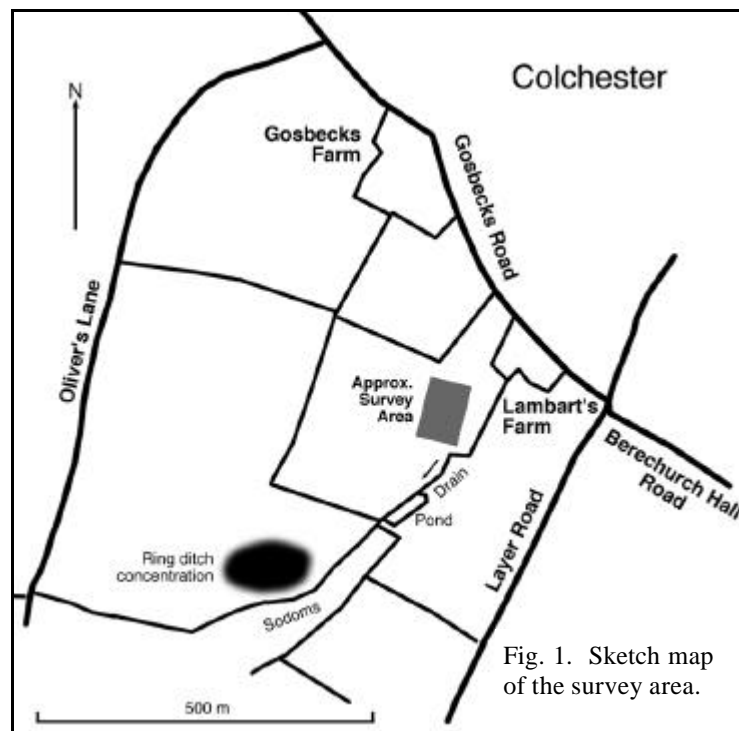


Fig. 1. Sketch map of the survey area.

The survey area lies west of the road junction between Gosbecks Road and Layer Road. A shallow valley contains a small stream, now partly underground, that runs from Gosbecks Road past what was Lambart's Farm, through a strip of woodland named on maps as Sodons or Sodoms, to the Roman River. Aerial photography shows that the western slope of the valley is particularly well-endowed with ring-ditch cropmarks, some of which appear in CAR-11 (Hawkes and Crummy 1995, Figs. 5.1 and 6.1). They are mainly concentrated about 200m southwest of the survey.

Fig. 1 is a sketch map of the survey area, based on 1950s maps that show locations of field boundaries and the former Lambart's Farm.

### The surveys

Three main survey methods have been used: magnetometry and ground resistance as discussed above, and subsequently ground penetrating radar. The latter became possible as the result of the kind decision of CAG to fund the hire of a ground penetrating radar (GPR) system for a survey of parts of the Colchester Circus, the

results of which are still undergoing examination at the time of writing. A condition of the funding was that the machine should if possible also be used to survey areas of interest elsewhere. There being no other suggestions, and a site licence being active, the decision was taken to use it on the double ring ditch; as far as is known, this is the first time GPR has been used on a feature of this type in the Colchester area, and the opportunity to evaluate its comparative performance is hence especially valuable.

Previous surveys using one or more of the other techniques on ring ditches, assumed or actual, have given mixed results. At a Bronze Age burial site at Teybrook Farm, Great Tey, good magnetometer results were obtained in a survey by A. and D. Black (Fawn, 2003). However, on the Bronze Age ring-ditch complex at Birch Pit (Holloway and Spencer, 2005; Crummy 2004), a magnetometer survey by T. J. Dennis was unable to detect the ditches, even under the most favourable conditions of stripped topsoil and with the features clearly visible in contrasting soil colour. Similarly, a magnetometer survey at Wigborough Henge on Abbots Hall Farm (Black 2003) also produced no indication of a ditch, in spite of a clear cropmark image and obvious tumulus on the ground. At the Lexden Tumulus, Colchester, magnetometer and resistance surveys both failed to locate evidence of an assumed-circular ditch located by the Laver brothers during their excavation in 1924 (Laver, 1927). An early magnetometer survey circa 1979 on the ringditch complex at Ardleigh produced negative results (Brown, 1999).

The geology at the site, like much of the plateau southwest of Colchester, is Glacial Sand and Gravel overlaying London Clay. Head deposits are shown to extend up the stream valley to within a few metres of the survey site (Geological Survey, 1982). Boreholes towards the Roman River at Kings Ford Farm and southwest of Oliver's Farm show the gravel layer thickness above London Clay to be 3.4m and 11m respectively (Ambrose, 1974). Temporary sections about 300m northeast of the site show the gravel layer to be about 3m thick (Ellison and Lake, 1986, p. 31).

Fixing the precise location of the survey is possible following the installation of permanent site markers on a 100 m square grid that is an extension of the main grid west of Olivers Lane, laid-out during the 1990s. A number of the original markers were measured into the Ordnance Survey coordinate system by long-average differential-corrected Global Positioning System (GPS) recording during 2001-02, a process that enables the OS coordinates of any of the others to be calculated. There was some concern that the considerable distance of the new marker set – around 700 m east – from the reference points would magnify the effects of errors in the observations, but in practice using a hand-held GPS receiver to get to the predicted coordinates will usually locate any of the markers to within a radius less than 5m.

## 1. Magnetometry

The magnetometer is a Geoscan Research type FM 18. The survey was conducted mostly in 30 x 30m blocks, at a sample density of 4 per metre along a traverse, with traverses spaced at 1 m. Zig-zag scanning was used. Signal processing software minimises distortion due to artifacts present in the raw data, from such effects as thermal drift, directional or operator bias. A spatial filter selectively enhances the contrast of large-area features, to which the instrument is inherently less sensitive, while limiting the contrast of fine-detail features that typically have a high random noise content. The magnetometer is actually a gradiometer, in that it measures the gradient of the vertical component of the earth's magnetic field to a sensitivity of 0.1nT. (For comparison, the absolute value of the vertical field in the Colchester area is about 44700nT.) Positive anomalies in the gradient are usually of most interest, as they indicate a locally-thicker layer of topsoil, for example because of a filled-in ditch, or pit. Topsoil typically has a higher humus content, and therefore magnetotactic bacteria, than underlying strata, and the earth's field above a deeper layer of it will be detectably stronger than the surroundings. Natural phenomena can produce the same effects, and identifying those due to human activity is not always straightforward.

Fig. 2 shows the results. The plan axes are metres relative to an arbitrary site grid origin of (1000, 1000). Site markers are indicated, and also affect the magnetometer because of their ferrous content. The dynamic range is  $\pm 4$  nT (nanotesla) meaning +4nT is black and -4nT white. This is a high-sensitivity setting, leading to significant artifact distortion, but even so the ring ditches are only just detectable in the block whose southwest corner is at coordinates (1770, 1440). The whole site has a scatter of small-area or point anomalies; where these are bipolar, this is almost certainly an indication of a near-surface iron or steel artifact, most likely of recent agricultural origin. Proximity to a wire fence causes the 'glow' at the southeast corner. A broad curved feature of low contrast links M46 to M47, then continues off the survey area to the west. Other extended features match ones that are very much more distinct as cropmarks. A broad band of low-level positive anomalies extends diagonally SW-NE both sides of the ring ditches, whose immediate vicinity has a significantly higher density

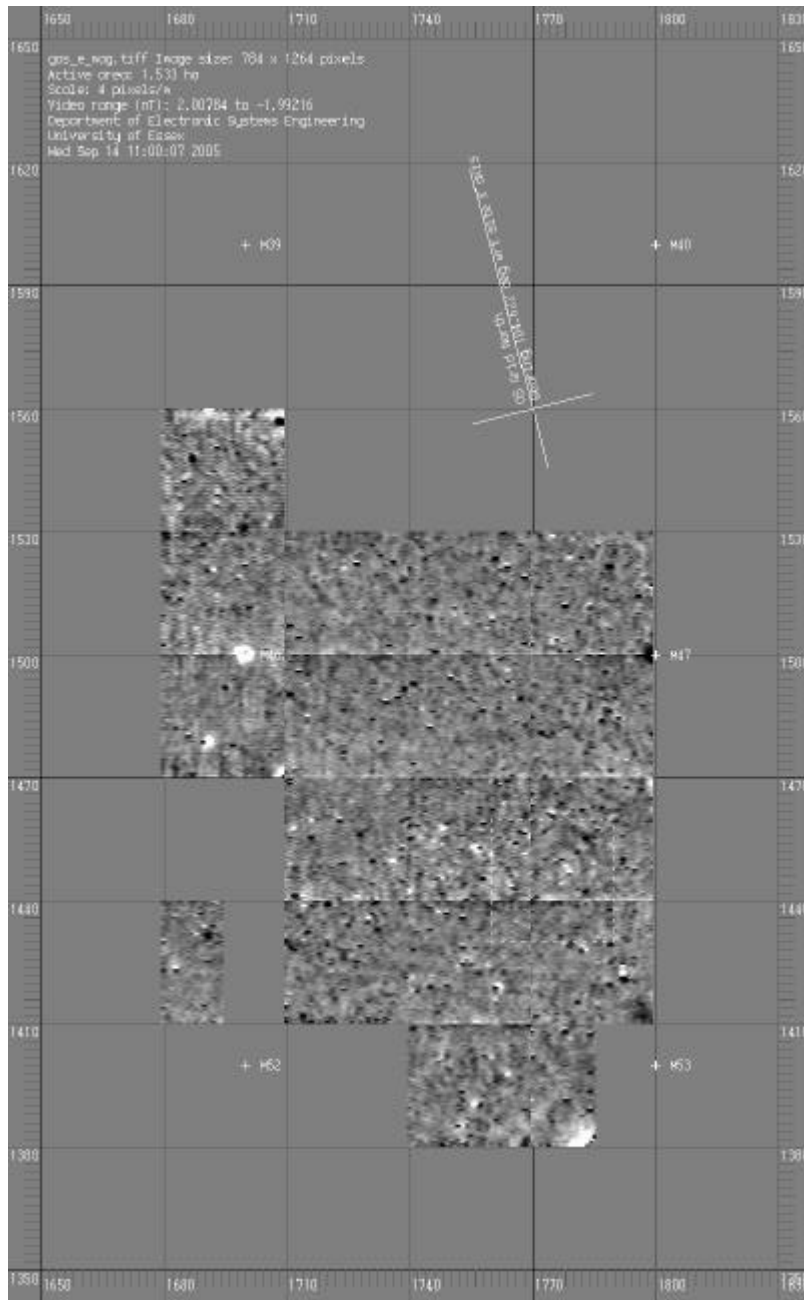


Fig. 2. Magnetometry image. The box in this and Fig. 3 locates the ground penetrating radar survey. Grid lines on this and other illustrations are spaced at intervals of

of

pit-like features than elsewhere on the site.

Immediately to the west of the ground radar survey area, indicated by a dashed box, a group of curved anomalies can be interpreted as at least segments of another double ringditch somewhat smaller than the main one.

## 2. Ground Resistance

The resistance meter used is the model sponsored by the Council for Independent Archaeologists, and manufactured by TR Systems. It is the twin probe type, with mobile probes spaced at 0.5m; this gives an approximate depth penetration of 0.75m (Clark 1996). The remote probes need to be placed at least 15m from the nearest part of the current survey block; in practice a 100 m remote probe cable is used to allow the largest possible area to be covered in a single block - this greatly minimises block boundary artifacts in the final image. The main signal processing task is to remove the mean level from each block, which then becomes mid grey on the display: only spatial changes in measured resistance are of interest. To minimise residual boundary effects, mean levels of data from the edges of adjacent blocks are measured, and appropriate offsets applied to equalise



them on the picture. On this site, the resistance values have ranged quite widely from 150 to 600 ohms and good contrast is obtained generally.

The survey has been conducted on a square grid in overlapping blocks of up to 80 by 31 samples, spaced at 1m in both X and Y directions. The overlap is 1m, and further reduces boundary artifacts.

Fig. 3. Soil Resistance image.

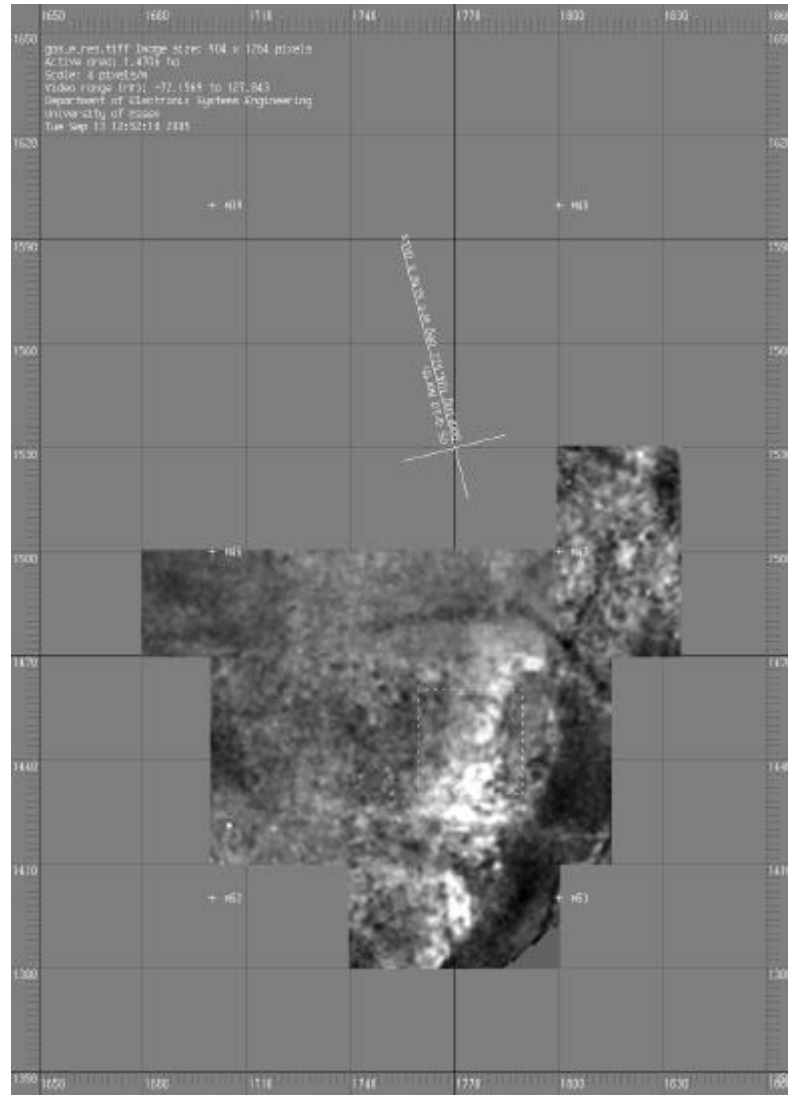


Fig. 3 shows the results, which cover a total area of about 1.47ha. The students initially surveyed the blocks containing the ring ditches, but at this time the site had a relatively thick covering of grass. Results identified the ring ditches more clearly than on the magnetometry, but not as well as had been hoped from the quality of the aerial photograph. The grass was later cut, and working conditions greatly improved, so coverage was progressively extended to the area shown in Fig. 3, which uses the results of a resurvey of the ring blocks giving significantly improved quality. (The dashed box again shows the area of the ground radar survey, which is discussed in detail below.)

The dynamic range of the resistance values, as mentioned above, is quite large. White areas represent high resistance, or soil that has low electrical conductivity, and black areas are low resistance. The most significant feature is the irregular sharp-edged band of high resistance separating an area of low-contrast activity at mid-resistance to its northwest from a much lower resistance band to the southeast. There is no obvious surface feature corresponding to the boundary, but a gentle slope (Fig. 7) takes the ground level to a flat region bordering the stream. The low resistance is most probably associated with a change in soil type in the stream valley. There is strong correlation with a dark band next to the stream in aerial photographs, and the ultimate origin of all the 'natural' features is most likely periglacial: many structures indicating probable alluvium-filled drainage channels of this kind are visible on aerial photographs from this area.

Although all blocks in Fig. 3 have the same dynamic range setting, there is an obvious difference in the contrast of fine detail between blocks on the upper left side, and the ones at lower, and especially upper right. The explanation is most likely that the former were surveyed in July 2005 shortly after heavy rainfall, while the latter, done late August/early September, were in drier conditions. High water content, especially in upper soil layers, tends to mask the effects of deeper features.

The main target feature, the concentric ring ditch, is very clearly identified, with the second to its upper right visible, but much less clearly. Measuring to the mid-points of the ditches, their diameters are:

Concentric outer: 19.0m  
Concentric inner: 10.2m

Single: 16.8m

Centre to centre the two ditches are 25.5m apart.

Leading from the upper left quadrant of the double rings is a sequence of seven lower resistance patches, possibly pits, of diameter about 2m and spaced 5.6m on average. The rings are bordered on their right side by a semicircular arc, diameter 39m, of marginally higher resistance than the local. This may form the right side of an otherwise rectangular enclosure 68 by 45m. Immediately south of the rings is a linear feature that extends into the low resistance region on the right. On aerial photographs this is visible more clearly as a straight former field boundary that overlays one part of a slightly meandering trackway.

Like the magnetometry, the resistance image is most active in the area around the double ditch, and there is evidence of another with a broken outline about 34m to its southwest. The second ringditch suggested by the magnetometry is not present.

On the north side, the pattern of cropmarks is accurately replicated, with the single ditch lying within the angle of one of them. The cropmarks are all 'darker' than the surrounding areas, indicating greener or more vigorous plant growth, which suggests the soil within them is wetter and/or contains greater nutrient content than the surroundings. With some exceptions, the resistance image shows lower resistance on the lines of the cropmarks, again suggesting a relatively wetter material with higher ion content.

### 3 Ground penetrating radar

The GPR system was an Utsi Electronics type GV1, which operates in the frequency range 200-600 MHz. Transmit and receive antennas have an effective horizontal separation of 0.3m and are fitted within skids that are loosely mounted to follow undulations in the ground surface. Fig. 4 shows the system in use on the site. In operation, the transmitter emits a series of broadband radio frequency pulses at a relatively low rate of a few tens of kilohertz. A sampler operating on the 'strobe light' principle reconstructs the received response for a period of up to 80ns ( $80 \times 10^{-9}$  second) by taking single samples from 256 transmitted pulses. A sense wheel and shaft encoder drive the recording process, and on this survey was set to take samples at 0.1m intervals. Combining all the responses from a single traverse gives a cross sectional view of the signal pattern, Fig. 5 being a typical example. The horizontal axis is distance in metres along the traverse, traveling south to north, while vertical is the received signal converted to a greyscale image, time delay increasing downwards to a maximum of 60ns. The signal is corrected for the reduction in amplitude with increasing delay/depth, which accounts for the graininess along the lower edge of the picture. Effects of the unvarying spurious signals that appear near zero delay, due to direct transmit to receive antenna coupling, are removed by subtracting the 'horizontal' average of each row of samples.

Reflections occur whenever there is a discontinuity in dielectric constant of the material, in the same way that light is partially reflected off a sheet of glass. Interpreting GPR images of this type is complicated by the characteristic hyperbolic pattern produced by small-area reflecting objects: this is caused by the relatively wide beam-width of the antennas, which means signals are received from an object not only when the system is vertically above it, but also for a significant distance each side. The exact shape of the hyperbolae is, however, useful in calibrating the propagation velocity within the soil: in this case we get approximately  $0.12\text{m.ns}^{-1}$  compared with  $0.3\text{m.ns}^{-1}$  for air, which in turn allows the approximate depth of a reflecting boundary to be estimated. Another characteristic of the received signals is their oscillatory nature, appearing as series of dark and light bands; this can be caused by a metallic reflecting object resonating at a frequency within the passband of the system, and the finite bandwidth of the antenna systems themselves. There is a good example of a hyper-



Fig.4. Ground penetrating radar survey in progress.

bola at about 19m into the traverse of Fig. 5.

The most effective way of viewing GPR data is the 'timeslice' method, where a sequence of horizontal slices derived from all the survey traverses is constructed. This is scaled to the same sample density in both directions, allowing direct comparison with the other survey methods. The best method of viewing timeslices is to convert them to an animation and then use media player software that allows manual scanning up and down the sequence. For hardcopy presentation either a 'filmstrip' format has to be used, or single frames.

## Results

In Fig. 5, the earliest strong responses occur at an undulating level of around 30-40% maximum delay, or 18 - 24ns, which at  $0.12\text{m.ns}^{-1}$  is a depth range of about 1 - 1.4m. The pattern through all traverses is similar, and probably indicates the boundary between topsoil and undisturbed underlying gravel (Ellison and Lake, 1986; Dalton 1880). This is greater than seems to be observed from agricultural work, where gravel starting at 12 inches (30cm) below surface is reported in the Gosbecks area generally (David Barbour, pers. comm.). Fig. 5 is from the traverse located over the centre of the double ditch, and the white bars at the lower edge mark the approximate positions of the four ditch crossings, as estimated from the ground resistance image. It is difficult to make any obvious connection between the bars and the radar image, but the first returns may be slightly later than normal within the inner ditch..

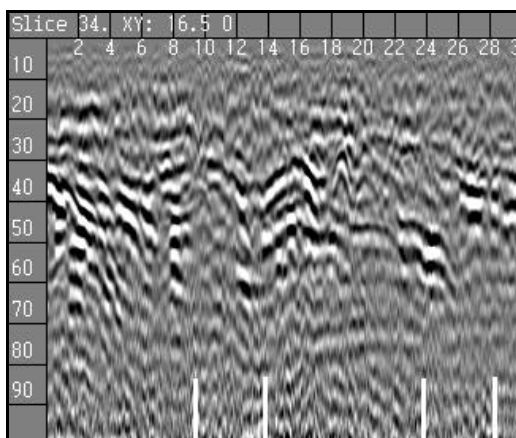


Fig. 5 Output from a single GPR traverse. The horizontal axis is the distance in metres along the traverse from its southern end. Vertical is time delay as a percentage of 60 ns.

Figures 6a-g are representative frames from the timeslice sequence.

Fig. 6a (frame 35, depth 0.47m) is from the first part of the sequence. It shows a series of low-contrast lines running at an angle of 5-6 degrees to the horizontal, but they actually begin close to the start of the sequence, at zero depth. On average, the spacing between adjacent light bands is 1.84 m which is very close to 6 feet. Another less distinct set runs at 75 degrees to the horizontal.

In Fig. 6b (56, 0.77m), there is a different set of sharper striations, now inclined at 19 degrees to the horizontal. Some have a distinct curve, see for example the lower right corner. Their spacing, averaged over 12 of them, is 1.508m, which is slightly less than 5 feet. These could be the result of sub-soiling, a process designed to break-up the hard impervious plough-pan layer by a deep-working single or double-tined cultivator (David Barbour, pers. comm.) However, it seems more likely that they are the result of a mole drainage system: the signals are characteristic of a long thin discontinuity, and the breaks would indicate where the tunnels are blocked. The spacing is somewhat less than the modern recommendation of 2m, but the depth is within the typical range (Armstrong and Rose, 2001). A mole drain system is also compatible with the local topology: Fig. 7 shows the contour pattern over the rings; the downward slope is to the lower right. The straight line is at 19 degrees to the horizontal, and fits the line of steepest descent reasonably well.

On Fig. 6b there is a concentration of small-area features, some apparently having geometric structure, in the region of the ring ditches.

Fig. 6c (66, 0.92m) and frames around it, contain the best indication of the ring-ditches in the form of very low-contrast concentric features, together with a scatter of small-area reflections both within and on the periphery. Extended linear features also appear. The diameter of the outer ditch is 18.9 m, calculated from the least-squares best-fit of a circle to a set of 11 points selected manually. The same process on the inner ditch produces 9.6 m.

In Fig. 6d, (73, 1.02 m), there is a strong concentration of returns that straddle the central ditch. Another cluster appears near the left edge of the picture.

Fig. 6e (119, 1.67 m,) has a broad region of returns running diagonally across it. There appears to be little geometric structure, but the strongest returns may be related to the inner ditch. In Fig. 6f, the returns resolve into two lines, one running across the whole view, the other approaching from upper right to meet the first at the centre. These returns become progressively more confined, until by around frame 166, depth 2.34m, Fig. 6g, they are represented by a scatter of point returns, a group of which may relate to the inner ditch, and could possibly be due to deeply-excavated post-holes.

Figures 6a to 6g are representative frames of the GPR timeslice sequence. An MPEG version of it can be downloaded from [http://privatewww.essex.ac.uk/~tim/ARCH/GOS\\_EAST](http://privatewww.essex.ac.uk/~tim/ARCH/GOS_EAST)

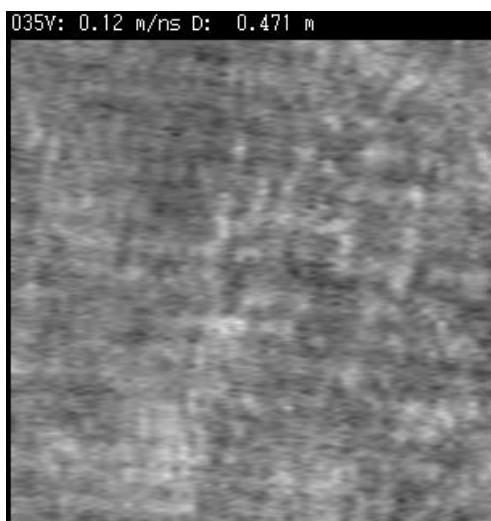


Fig 6a

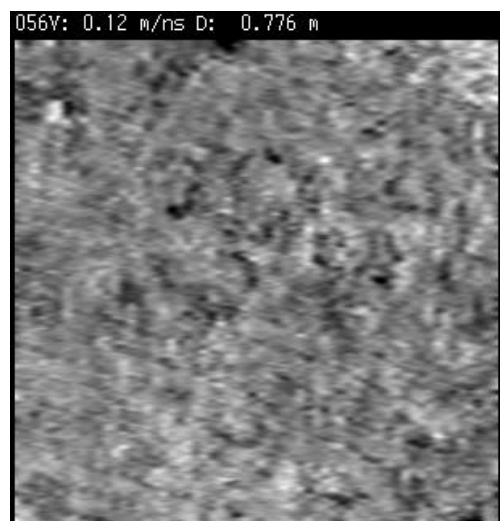


Fig 6b

CAG 45

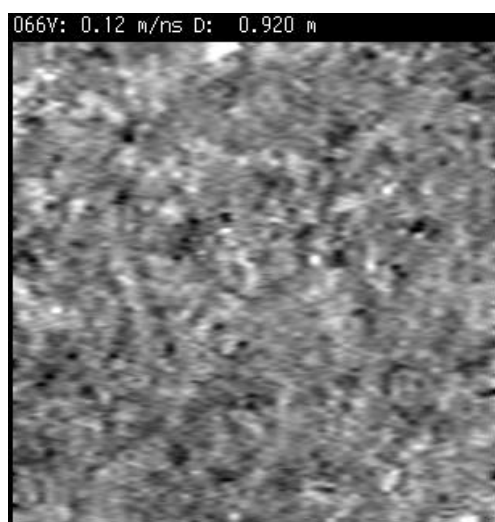


Fig 6c

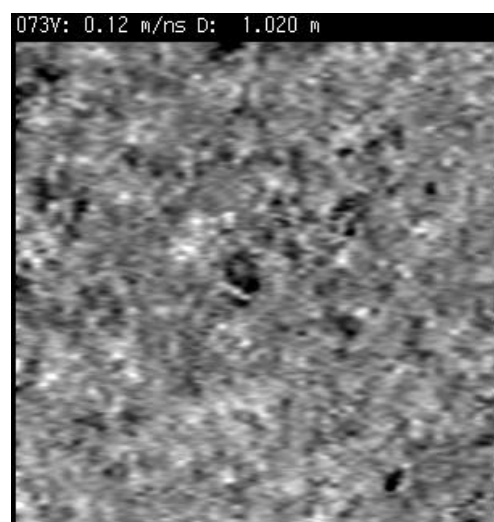


Fig 6d

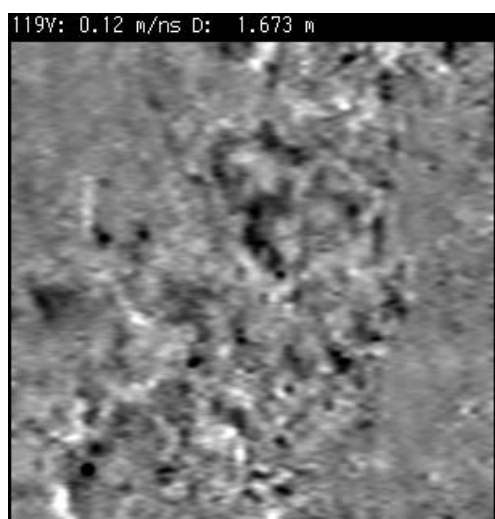


Fig 6e

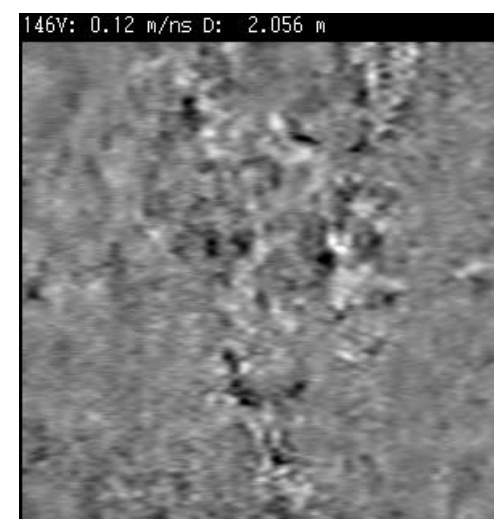


Fig 6f

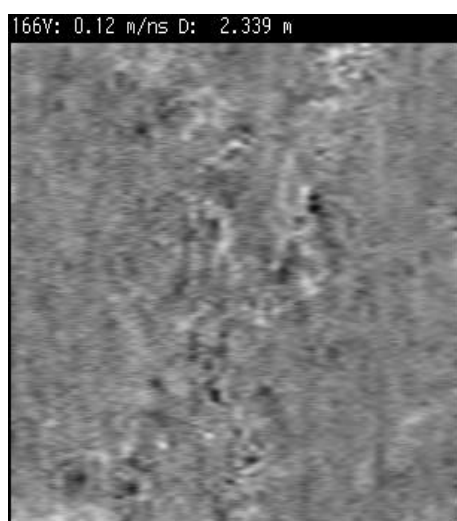


Fig 6g

### GPR relationship to resistance and magnetometry

Figures 8a and 8b show the GPR timeslice from frame 66, Fig. 6c, scaled and overlaid on clips from the magnetometry and resistance results. At this scale, the ditches are somewhat more obvious on the GPR. On Fig. 8a, a line of small-area positive magnetic anomalies running SW-NE across the inner ditch appears to be replicated on the GPR images, and some of them may also appear on resistance; these are likely to be due to pits. Comparing Fig. 6e with Fig. 8b suggests that the GPR signals are related to the broad band of high resistance that crosses the survey area SSW to NNE.

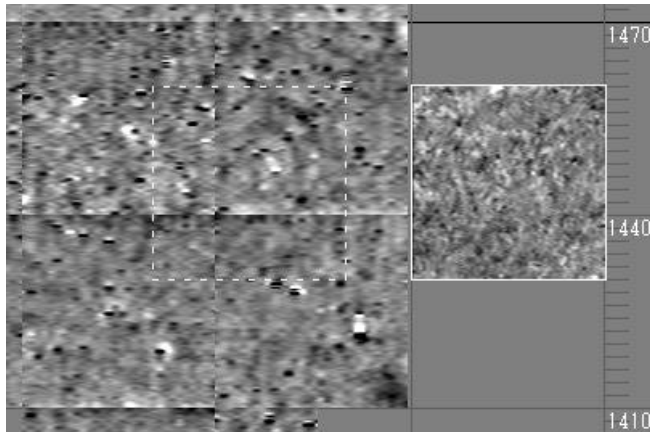
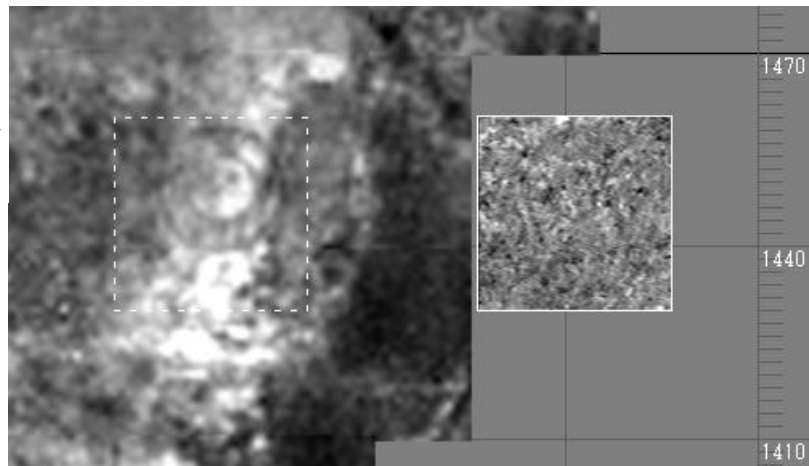


Fig. 8a GPR timeslice 66 compared with magnetometry.

Fig. 8b GPR timeslice 66 compared with ground resistance.



### 4. Topology

The area survey used to generate Fig. 7 was performed using a standard surveyor's optical level and staff. Heights were recorded by reference to one of the permanent site markers to a precision of at least  $\pm 1$  mm, with measurements taken at 1m spacing. Traverses parallel to the site X-axis were spaced at 5m intervals. In addition, a number of single 50m traverses were taken, to determine if features visible on the geophysical surveys had counterparts in the topology, including the rings themselves. In only one case was a possible correlation noted, the result illustrated in Fig. 9 overlaid on a clip of the resistance image. The profile is plotted against its own coordinate system, the X-axis drawn to scale at the position on the ground where the readings were taken. The Y-axis scale is indicated. The profile shows a slight overall upward gradient to the northwest, but comprises two distinct segments, the one with 'steepest' slope to the southeast of where it crosses a dogleg in the low resistance extended linear feature. A similar south-north traverse further to the west across the same feature did not show a change in slope.

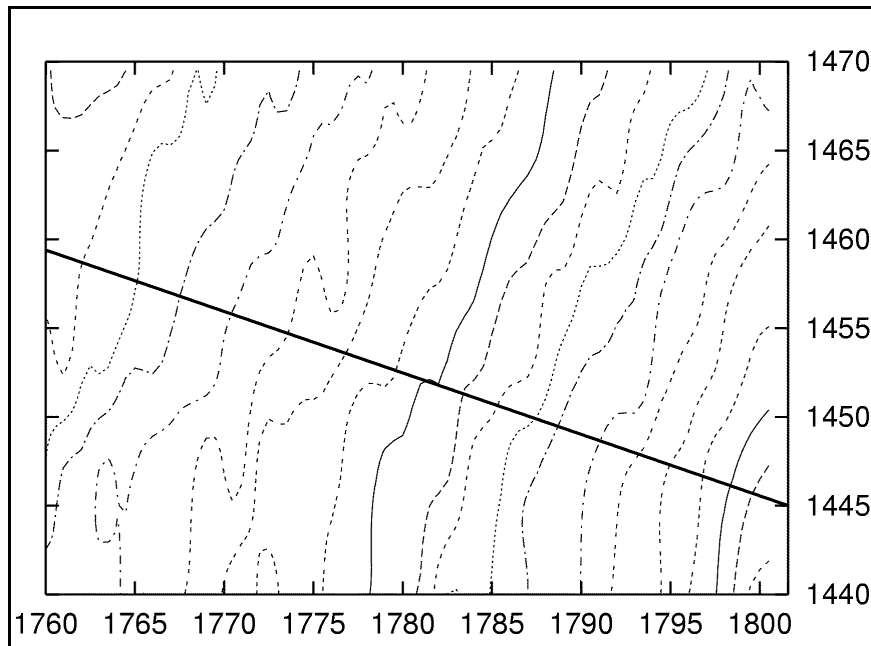


Fig. 7. Ground surface contour pattern. The X and Y axes are site coordinates in metres. The contours are plotted at 5cm intervals with minimum height at lower right. The straight line shows the approximate direction of the striations visible in Fig. 6b.

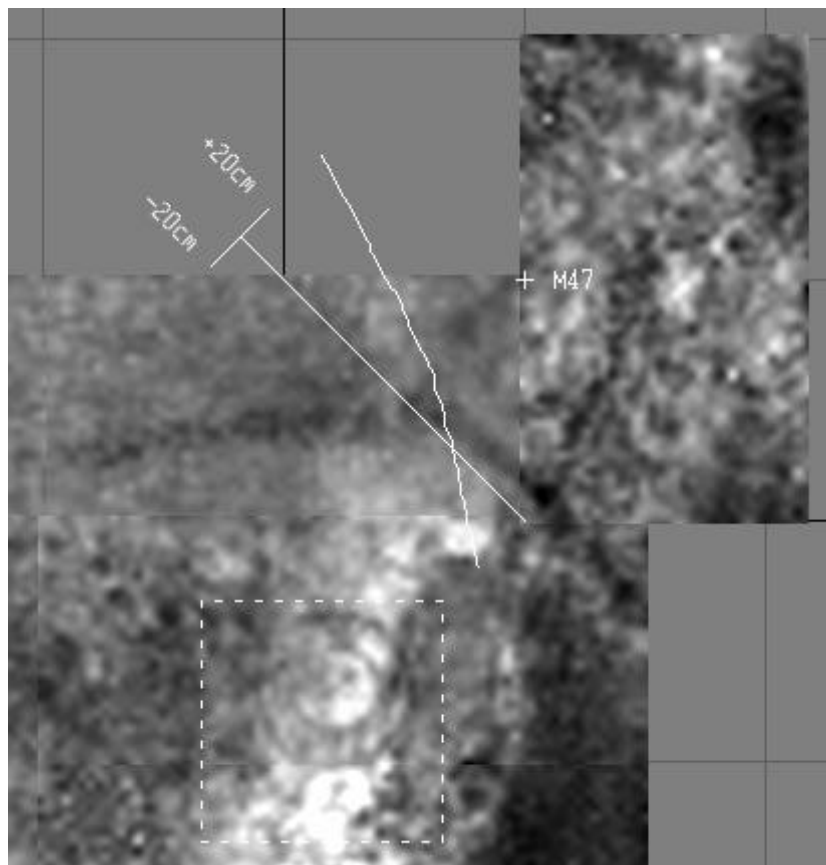


Fig. 9 Surface topology sample related to ground resistance.

## Discussion and Conclusions

All three main survey methods have clearly detected the ditches, soil resistance most effectively as circles of resistance significantly less than the local average. Magnetometry detects them weakly as circles of positive anomaly, both of which suggest backfilling of the channels with humus-rich surface material that has penetrated into the gravel layer beneath the ploughsoil. The concentric ringditch generates the greatest response, the adjacent one to its northeast much less. The surveys have precisely defined the positions of the features in relation to the permanent Gosbecks Archaeological Park site reference grid, which will facilitate excavation in future should that ever be considered appropriate.

The magnetometer and resistance results duplicate linear structures visible on aerial photographs, and also confirm a pattern of small-area anomalies characteristic of pits. Resistance detects a possible enclosure with curved eastern end containing the double ringditch.

Ground penetrating radar detects the ditches weakly, with clearest response at a depth below surface of approximately 0.9m. A caveat is that all depth estimates are highly dependent on propagation velocity, and this figure is most likely at the upper limit of the probable range. The actual depth of the topsoil layer at this location on the site is unknown. The reflections will arise from both the base and sides of the ditches, and can best be seen on the animation of the timeslice sequence. Interestingly, the behaviour of the sequence at Gosbecks has provided useful evidence to support the presence of the ditch at the Lexden Tumulus, where a GPR survey was carried out in October 2003 (Dennis et al., 2005), and suggested the structure was of quadrilateral form rather than circular as assumed from the excavation in 1924 (Laver, 1927).

The proximity of one or more relatively large ring ditches (19 m) at 200 m or so from a group of smaller ones comprising a Bronze Age cemetery site is reminiscent of the situation elsewhere in northeast Essex, for example at Wormingford and Langham (Strachan 1998, 18 and 17). At Langham there are two large ringditches, one concentric, adjacent to a cluster of smaller ones south of the River Stour. Other examples are at Moverons Pit, Brightlingsea, and Thorpe-le Soken, where the ditch is concentric, and Little Bromley where it is hengi-form (Brown, 1999 Fig. 113). At Brightlingsea, the ditch is early Neolithic, and there is evidence of a Neolithic connection at the other sites. The possibility exists that Gosbecks is yet another example.

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#### Acknowledgements

Colchester Archaeological Group for financial support, GPR survey. Students on University of Essex course UNV0432, *Practical Archaeology, Part 2*, especially Marc Brewster and David Passfield. Patrick Spencer, for assistance on preliminary and continuing survey work. Aline and David Black, GPR survey. Howard Brooks, Colchester Archaeological Trust. David Barbour, Gosbecks Farm.

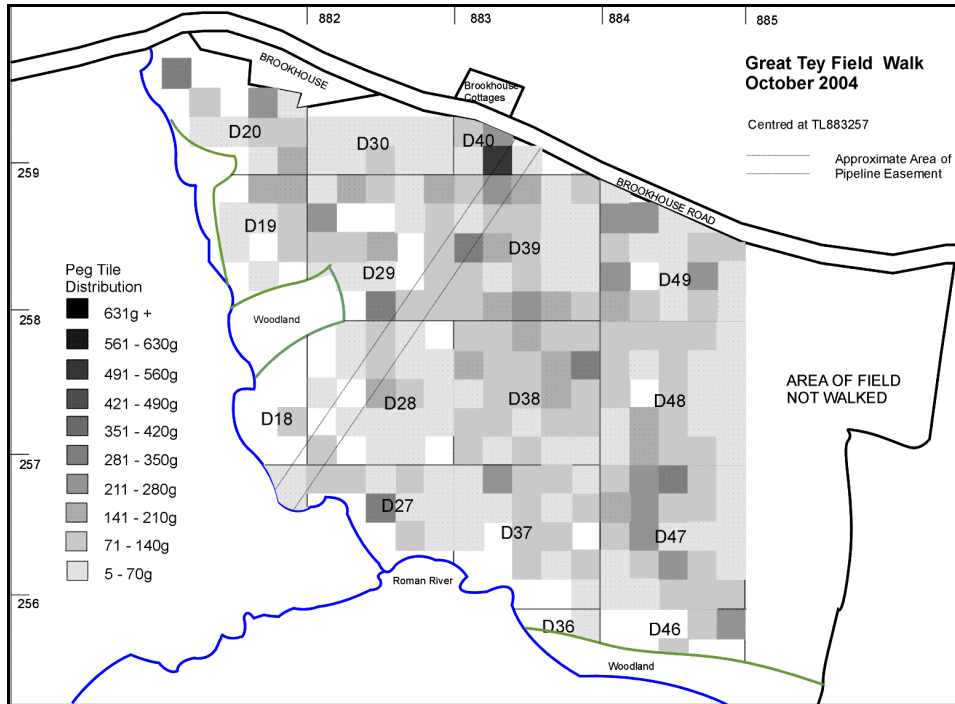


HA	Flin	Burnt	Prehist.	Roman	Sax.	Med.	Pmed.	Mo	Roman Brick/Tile		Peg Tile		Pmed/Mod	Glass	Glas	Other
No.		Flint	Pot	Pot	Pot	Pot	Pot	Pot	Number	Wt gms	Number	Wt. gms	Brick		Slag	
D17									2	15	2	45				
D18							1		2	10	3	105				1
D19				2		13	15		39	1730	35	820		2	1	2
D20	2		3			4	22	2	39	925	63	1265	4	3	3	2
D27							2		7	110	32	825				2
D28		5		10		20	31	3	116	3490	55	1090	1	2	1	6
D29	2	3		26		49	35	2	170	4125	109	2030	1	1	4	6
D30	1	1		4		3	23		42	535	30	445				4
D36						5					1	10				1
D37	1	2				9	26	1	41	545	86	1410	1	1	4	4
D38	8			14		76	37	3	141	4115	144	2830	10	2	7	13
D39	1		1	12		27	21	17	141	4105	132	2770	9	3		16
D40						16	27		22	515	59	1020	3	1		11
D46				1			5		6	125	13	670				1
D47						1	34	3	53	865	181	3085	1	2		4
D48	2	1					26	1	16	465	119	2790		1	1	4
D49		2		1		7	39		11	560	108	1990		1		2
Totals	17	14	4	70	0	230	344	32	848	22235	1172	23200	30	19	21	79
Total Pottery			680													

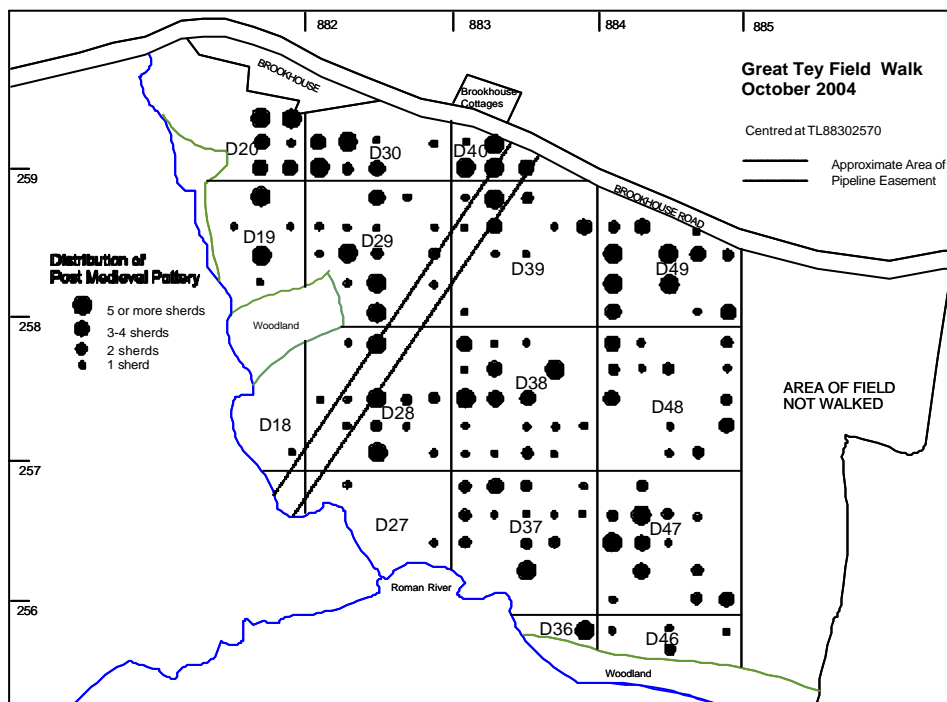
Fig. 2 Finds Distribution by Hectare

## Results

The finds listed in Fig. 2 represent almost all periods from prehistoric to modern. The only exception was an absence of Saxon material, though even this had been noted during the pipe line excavations. The majority of material was medieval or post medieval, and there was also a large quantity of Roman tile and pottery. Figs. 3 - 7 show the distributions of the five commonest materials found. Fig. 8 shows the locations of some of the more interesting occasional finds. Finds listed under "Other" included iron nails and other iron objects, slate, coal, daub and plaster, 2 pipe stems, bone and tooth.



*Fig. 3 Peg Tile Distribution*



*Fig. 4 Post Medieval Pottery Distribution*

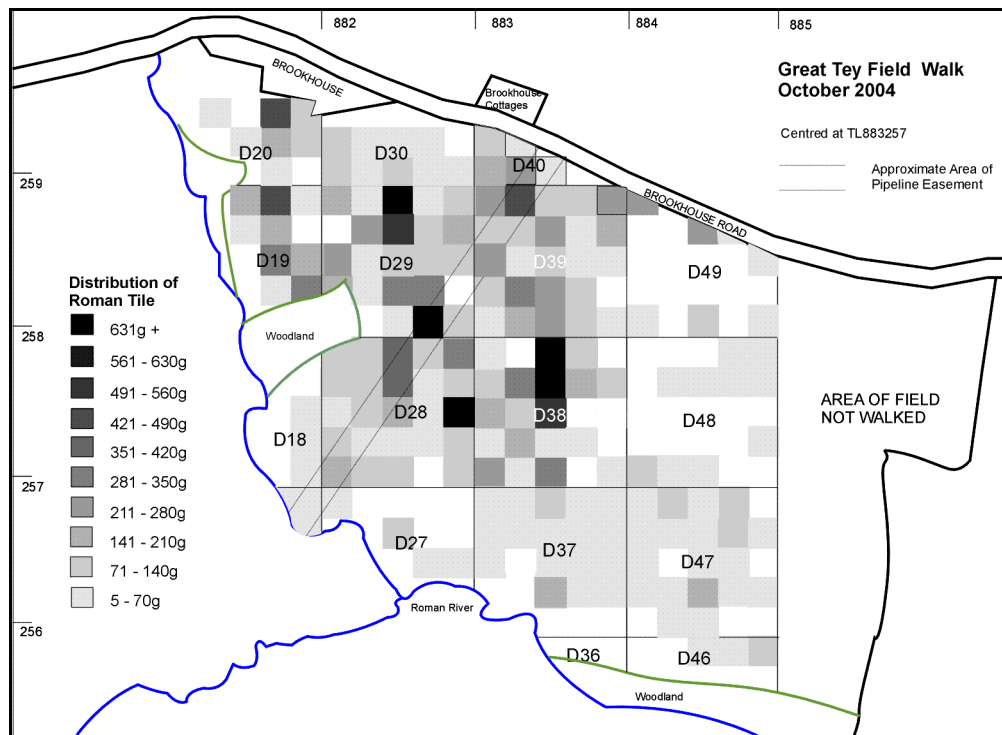


Fig. 5 Roman Brick and Tile Distribution

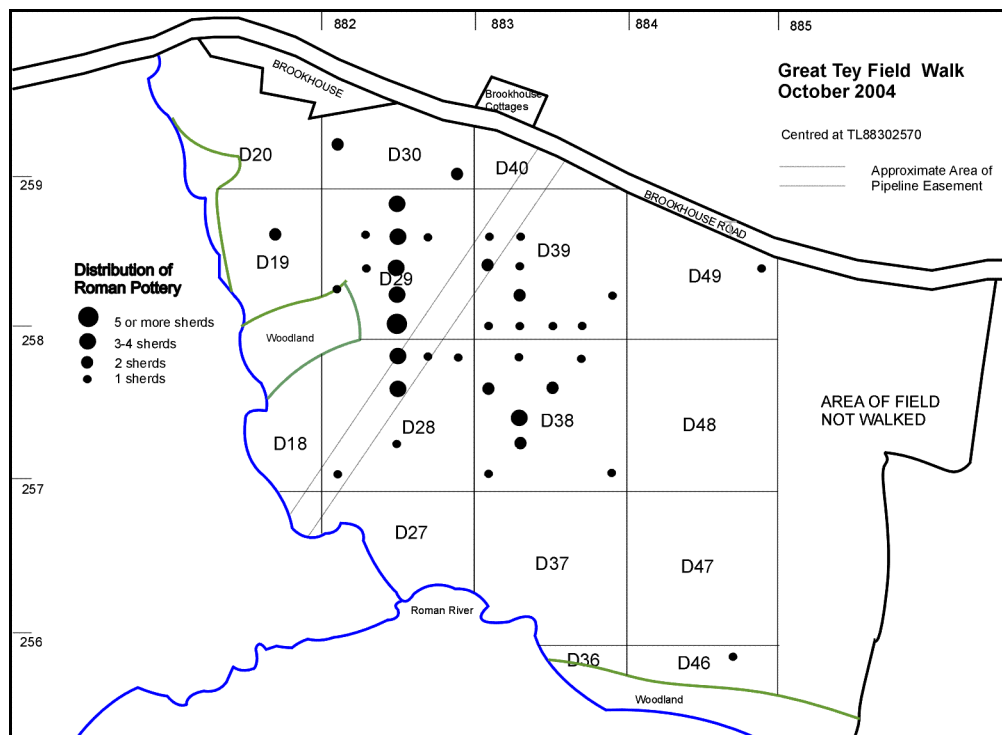
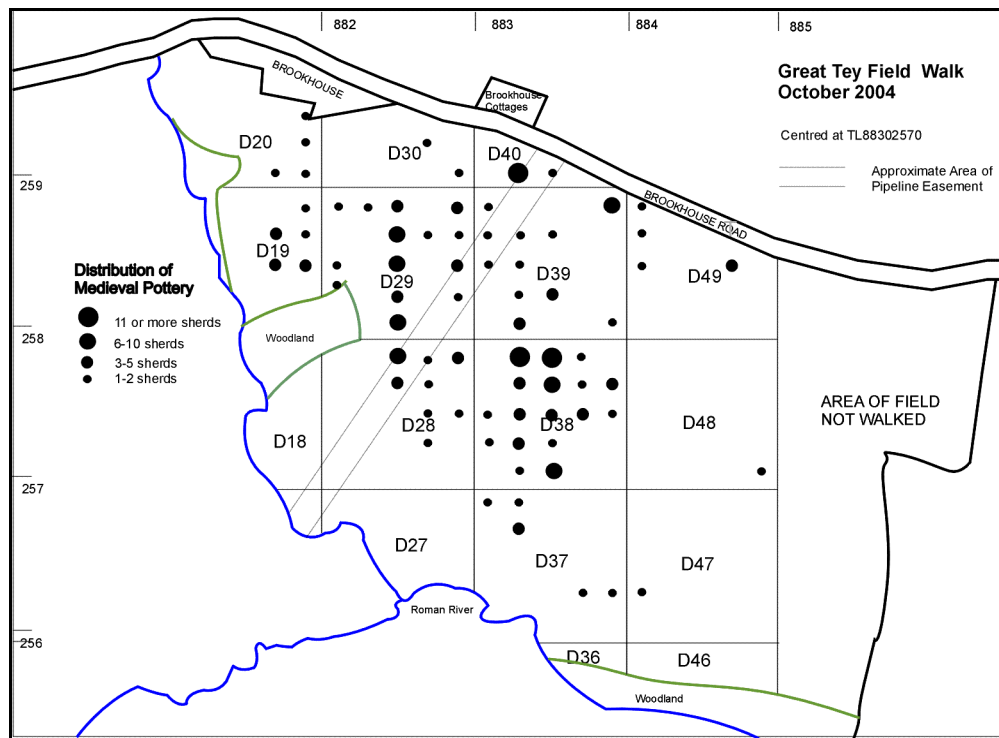
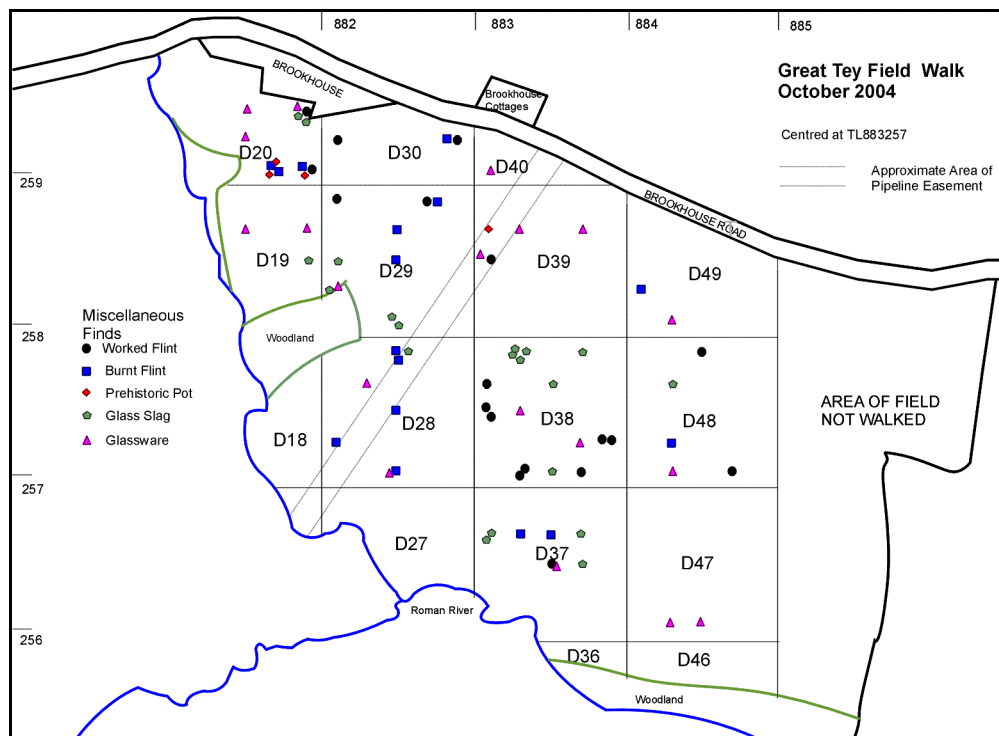


Fig. 6 Roman Pottery Distribution



*Fig. 7 Medieval Pottery Distribution*



*Fig. 8 Miscellaneous Finds*

### Discussion

Distribution of **peg tile (Fig. 3)** was random over most of the field. Only in D40, immediately south of Brookhouse Cottages was there any indication of a higher concentration. This pattern was almost exactly replicated by the distribution of **post medieval pottery (Fig. 4)**. Again, distribution was essentially random, with a higher concentration near modern habitation (though note the increased concentration along row K to P in D28 and D29 – this occurs again in the distributions of Roman material). These distributions are consistent with most of the material being introduced to the field by modern manuring. A higher concentration might be expected near existing habitation. The particularly high concentrations in D40 may also be associated with the “farmyard surface” found there during the pipe line excavation.

**Roman brick and tile** showed a very different distribution (**Fig. 5**). High concentrations were found in an area running from the north west corner of D29 south east to the centre of D38. A significant proportion of the tile was hypocaust tile, suggesting an association with the Roman Villa to the south east. Where this area is crossed by the pipe line at around D29-Q, the County excavation identified evidence of Roman activity, including the remains of one or more corn drying kilns. The **Roman pottery (Fig. 6)** showed a distribution very similar to that of the tile. Note again the very high concentration found by the walkers of D28/D29-K to P.

The distribution of Roman material as a whole suggests that the centre of any activity was well to the south of the modern road and buildings at Brookhouse. It would appear to run for about 150m north west to south east along the edge of the boulder clay bordering the flood plain of the Roman River and its tributary. The county excavation suggests that it may have been bordered on the north by a trackway running north-west to south-east.

**Medieval pottery** distribution (**Fig. 7**) is something of a puzzle. There is a hint of high a concentration in D40, where the pipe-line excavation found the cobbled surface of a medieval farm-yard, but in general its distribution follows closely that of the Roman material. This conflicts with the findings from the pipe-line excavation. No medieval activity was found in this area, tending to confirm that the focus of activity had moved north and that Brookhouse Road and an associated farm already existed.

Selected miscellaneous finds are shown in **Fig. 8**. Whilst there is little to suggest that any of these finds are other than residual, there are 3 observations worth recording:

1. There seems to be a concentration of worked flint within D38.
2. Of the four pieces of prehistoric pottery found, three were found close together in D20. This may be, but probably is not, significant.
3. Considerable quantities of both green and black glass slag were found over the whole area, and particularly coincident with Roman materials in D 29 and D 38 as described above. There appears to be no record of glass making in the area, so whence came this material? Suggestions are welcome.

### Acknowledgments

Our thanks are due to:

Peter Fairs, the landowner, both for making the field available to us, and for preparing it to make it ideal for field walking. He could not be blamed for three days of rain which made the going somewhat sticky; David Simms, for preparing the grid and providing GPS equipment; Pauline Skippins for her expertise in classifying the finds, and the team who made them identifiable by washing them all; and finally everyone who took part on the day and who helped to make it a success.

### References

1. Patrick Allen Essex Heritage Conservation Record Summary, Cressing to Great Horkesley Fresh Water Trunk Main **2003** (Final Report for EAH in preparation).

### A timber framed building at 80 Hythe Hill Colchester

Richard Shackle

80 Hythe Hill is the former Queen's Head public house. It is a rectangular building in a mock Tudor style. Inside the eastern half of the building is a genuine medieval timber framed building. It is in two parts (Fig 1): a two bay medieval cross wing at the front and a fragmentary medieval building at the rear. Both parts are built of oak with close studding.

The cross wing (ABGH in Fig 1, upper drawing) was originally of two bays but part of the rear bay has been lost to fire or decay. The plan of this upper floor shows an oriel window facing the street and a window in the flank of the cross wing looking up Hythe Hill towards Colchester town centre. This is reminiscent of the two cross wings at Charlie Brown's in East Street. Each of those cross wings had a window in the front corner looking up the hill towards the town centre. The Hythe Hill window at present has three moulded window bars but these probably replace plain diamond mullion windows. There is a very clear shutter rebate for this window on the inner face of the top plate. Fig 2, which is only approximately to scale, shows a cross section of two of the moulded window bars. The fact that the bars are of different cross section suggests that the bars are a replacement for plain diamond mullion bars. Fig 3 shows the flank of the two buildings from the outside. On the ground floor, apart from three studs and evidence for a jetty, little can be seen. On the upper floor we can see the three bar flank window looking up the hill. This window is surprisingly wide and suggests that there were no other buildings close to the cross wing on this side.

The front elevation seen from the inside (Fig 4) had a window with a deep, double-pegged sill. This was probably an oriel window. There is no groove or rebate for a shutter on the tie beam, suggesting that the oriel window was glazed and unprotected by a shutter at night or in bad weather. On post "B" about three feet below the top plate you can see the sill of the window on the flank of the cross wing. The tie beam of this elevation has peg holes for studs below but no peg holes for studs in a gable above. This suggests that this cross wing had a

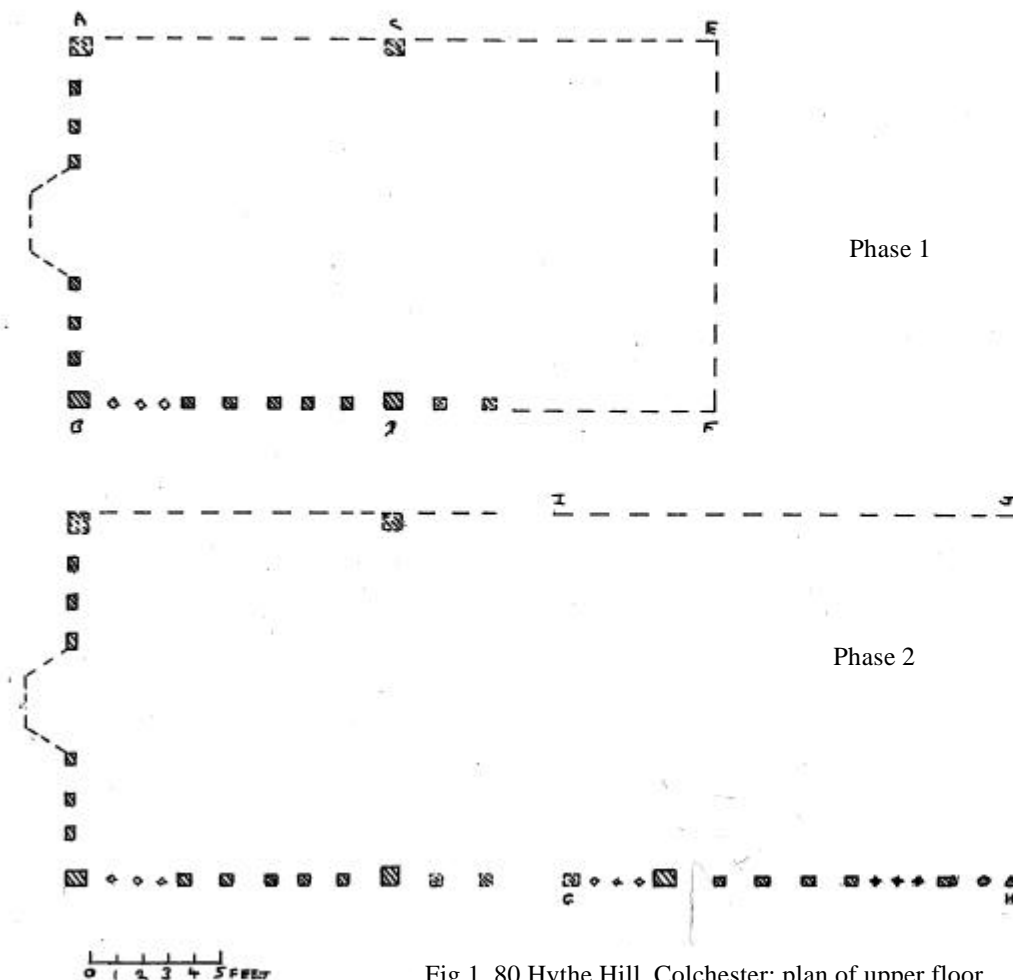


Fig 1, 80 Hythe Hill, Colchester; plan of upper floor



projecting gable like many buildings in Ipswich.

The bridging joist C-D (Fig 5) has several roll mouldings which suggests a 16<sup>th</sup> century date. This bridging joist had a large hole through it, suggesting that it may have been a reused timber. The common joists attached to the bridging joist are unmoulded. This is surprising, as you would expect these joists to have similar mouldings to the bridging joists.

The medieval fragment at the rear of the building (Fig 1, bottom drawing GH –IJ)) was presumably brought from elsewhere to replace the rear part of the front cross wing. We only have the upper part of one wall but it has several points of interest. It has two diamond mullion windows, which suggests that it is 16<sup>th</sup> century or earlier. It also has a 17<sup>th</sup> century window with moulded window bars, which suggests that this part of the building was updated in the 17<sup>th</sup> century and that some activity was being carried out which required extra light. Fig 6 shows two of the mullions from this window. They are almost certainly in situ.

I should like to thank Dave Stenning for his comments and suggestions and Steve Miller for allowing me to record the building.

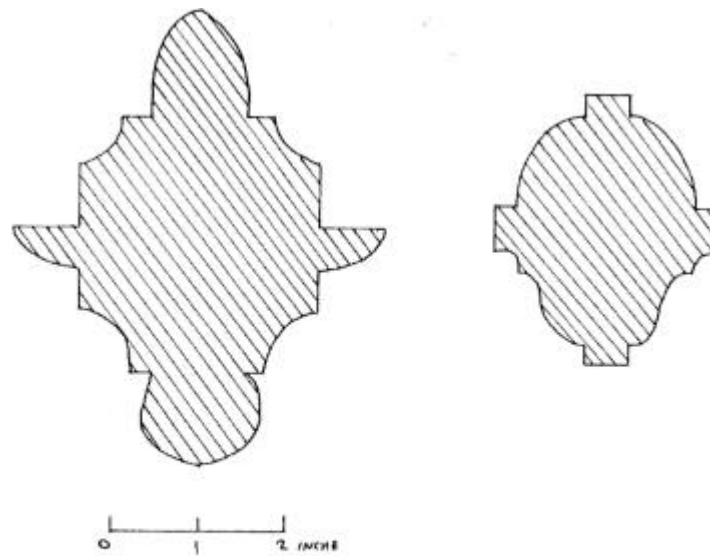


Fig 2, 80 Hythe Hill, Colchester; flank window, moulded mullions

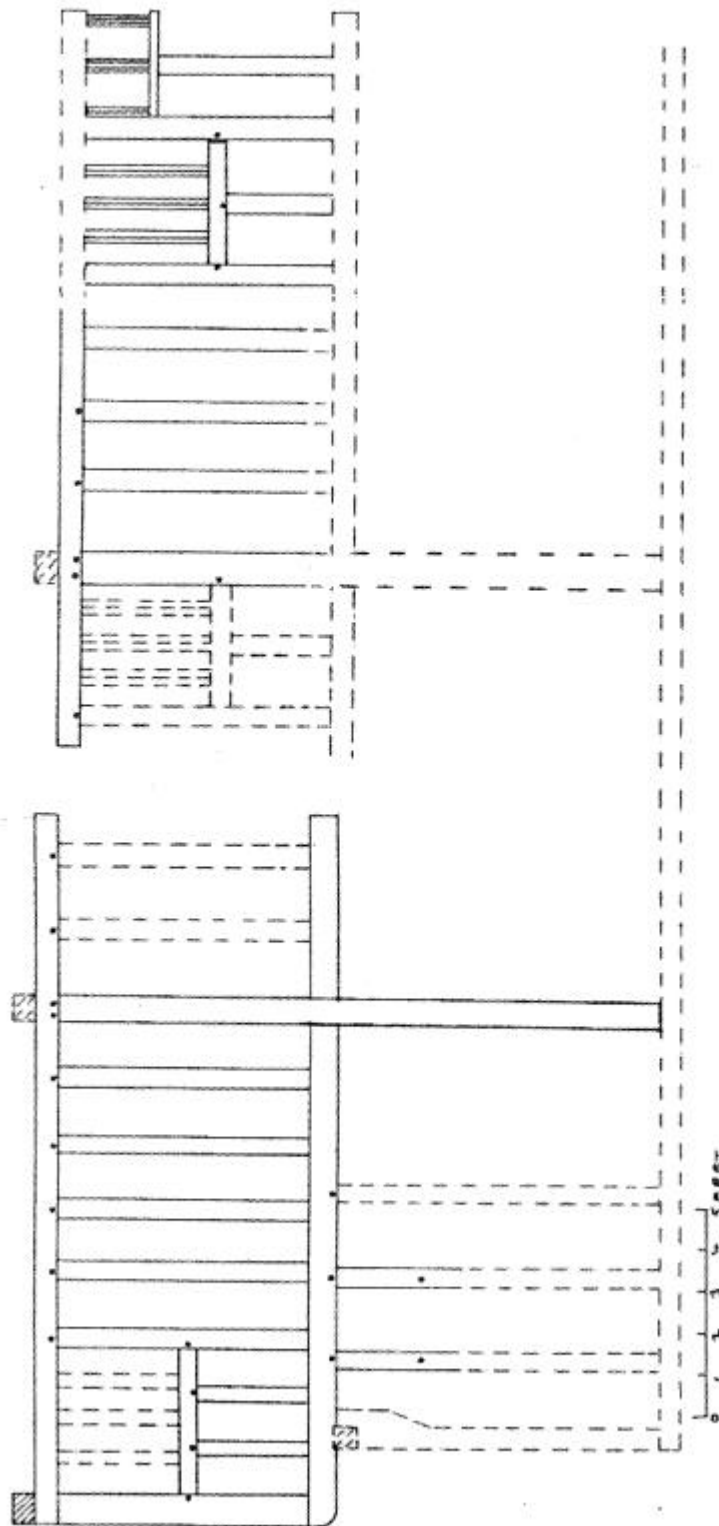


Fig 3, 80 Hythe Hill, Colchester; flank of building

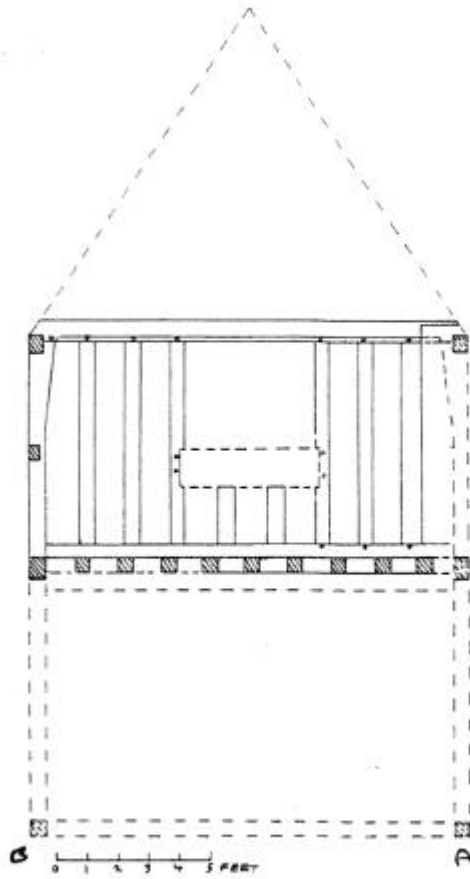


Fig 4, 80 Hythe Hill, Colchester; front elevation from inside

Fig 5, 80 Hythe Hill, Colchester; moulded bridging joist

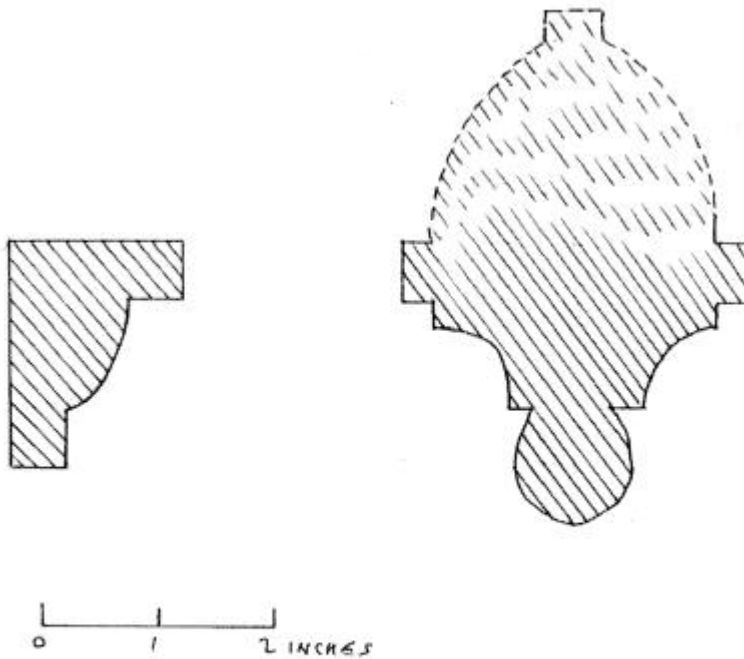
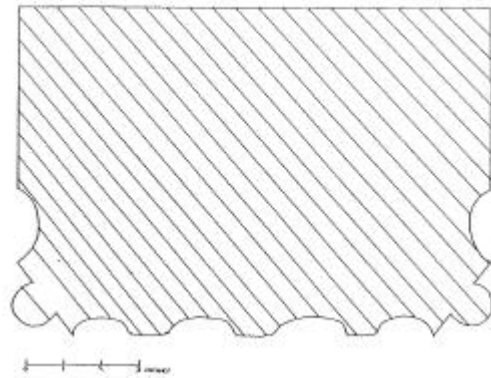


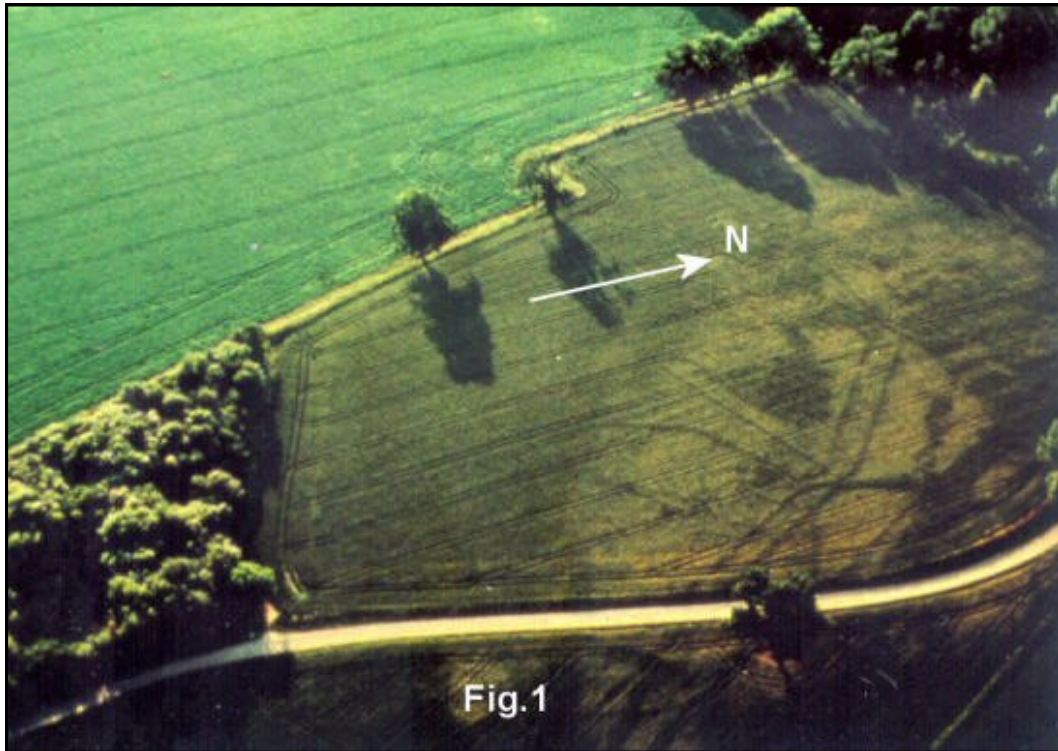
Fig 6, 80 Hythe Hill, Colchester; rear building, 17th century window

## Romans at Copford

Aline and David Black

### Introduction

This site in Copford has a considerable amount of Roman roof tile scatter, also some hypercaust tile. An aerial photograph of the site taken some years ago by Ida MacMaster (Fig 1) shows a linear pattern of cropmarks in the field which extends northwards from woodland and slopes down towards a stream which borders the northern edge of the field.



In summer 2000 Peter Cott carried out a magnetometer survey of an area 80m x 80m immediately north of the woodland. He found a series of linear ditches which he interpreted as a field system, a pattern of disturbance extending into the woodland, which could be the most northerly end of a building, and a closely spaced set of strong magnetic responses (marked **J** on Fig 3) which he thought might represent burials. He recommended a more extensive geophysical survey of the field.

In summer 2002 an area some 200m long by up to 120m wide was surveyed. As the survey was carried out at greater density than that used by Cott his area was included in this survey. Most of the field to the west of the path which runs approximately north-south was surveyed. This covered the area where crop marks had been seen and one of the areas of dense tile scatter. The survey was extended to the east of the path to cover the other area of tile scatter.

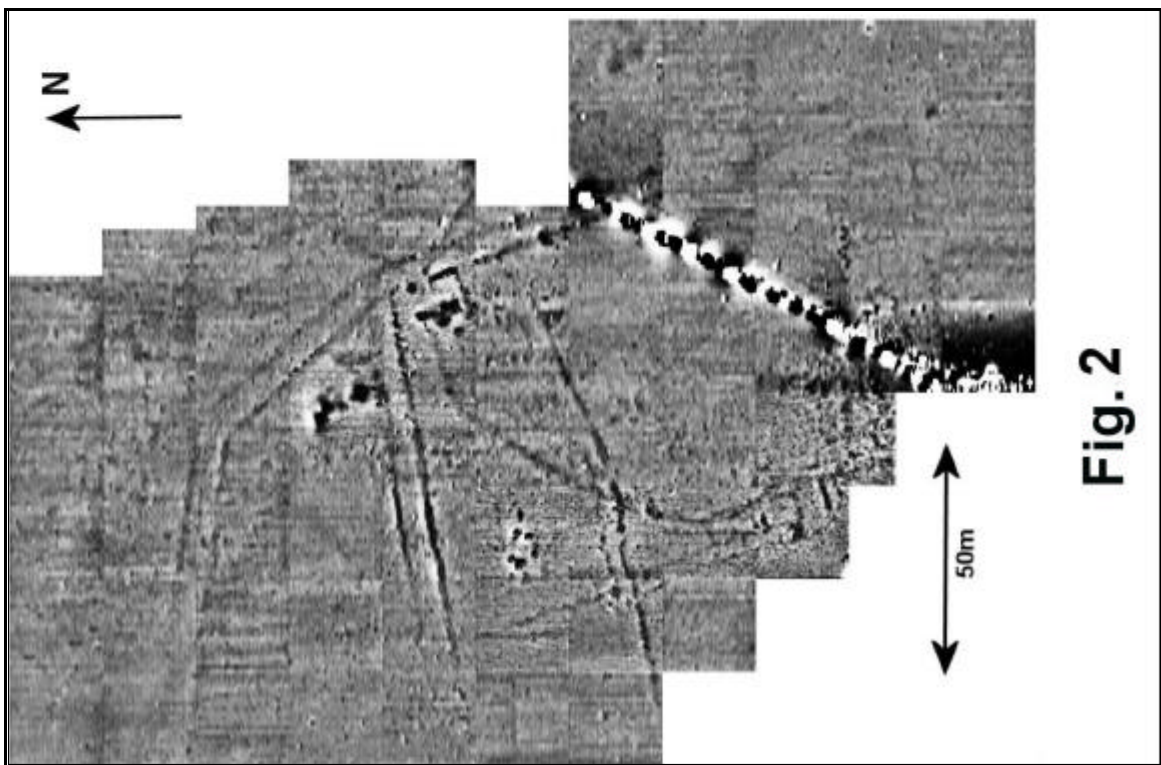
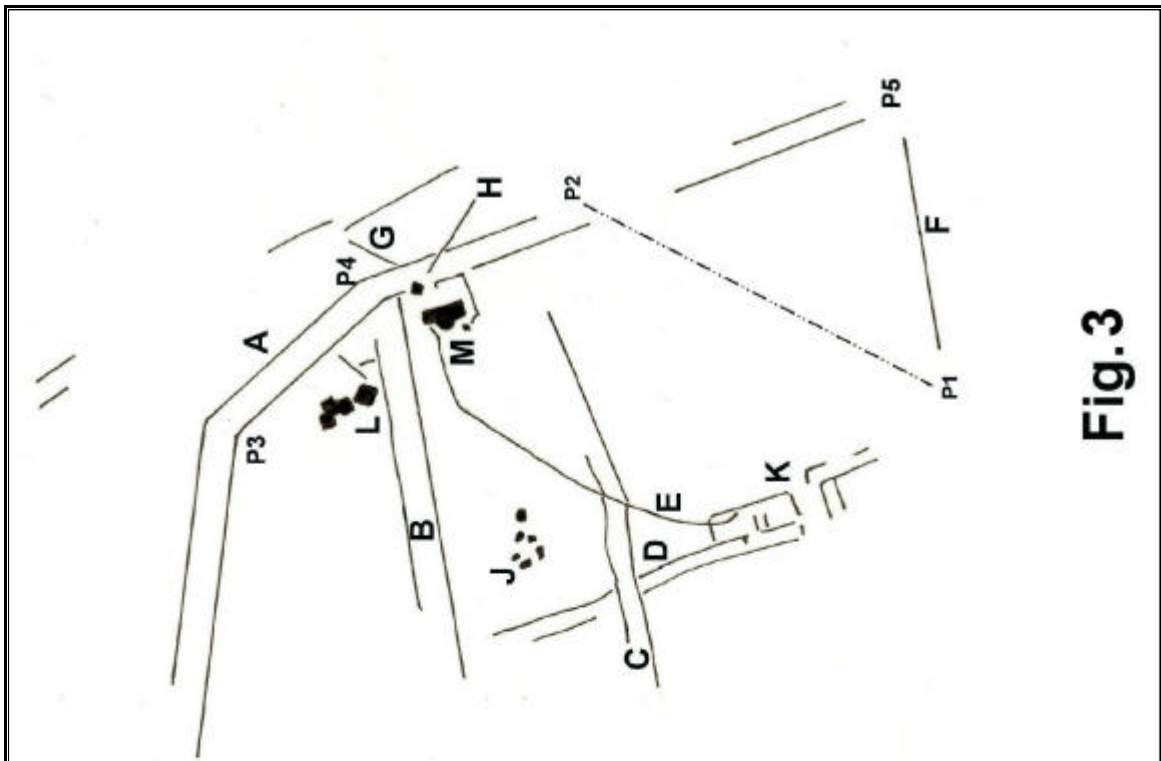
### Method

The magnetometer used was the FM18 Fluxgate Gradiometer owned by Colchester Museum Services. The survey grid was set out mainly in 20m squares with reference to the OS grid. The operator walked in south to north direction along tracks 1m apart, taking readings every 0.25m. A few squares, where particularly interesting features were found, were re-surveyed at higher density, the operator taking readings every 0.25m along tracks 0.5m apart. The data was processed on site using InSite software from Geoquest. The raw data was also stored for subsequent processing off site.

### Results and Discussion

Fig 2 shows the results of the survey. Fig 3 is a drawing of Fig 2, labelled for discussion.

The very strong linear magnetic response running from **P1** to **P2** is from a relatively modern iron water pipe which follows the modern track through the field and served a property (now demolished) in the wood to the



south of the survey area.

Given the amount of Roman tile on the site it is tempting to assume that most of the other features of the plot obtained are Roman. The parallel ditches **A**, some 6m apart, are possibly a driveway. The sharp bends at **P3** and **P4** are curious and do not relate to any modern feature or the contour of the field. There is some indication that the ditches cross the line of the water pipe and continue onwards towards **P5** at the south east corner of the area surveyed, but the magnetic response throughout this south eastern area was unfortunately weak.

The parallel ditches **B**, again some 6m apart, appear to be cut at **P4** by the 'outer' ditches **A**, implying that they are not contemporary with them.

The two pairs of parallel ditches **C** and **D** are each 4m apart. **C**, going WSW to ENE has, unusually, a 'kink' in it. It appears to cut **D** and also the single curved ditch **E**, and so is probably later. There is evidence, albeit faint, of a (single) ditch **F** running from **P1** to intersect with the southern extension of ditches **A** at **P5**. Finally, there are two single ditches **G** and **H** which seem to meet at right angles and are cut by parallel ditches **A**.

Cott found anomaly **J** in his survey in 2000. There are some five or six highly magnetic responses which do not fit a kiln signature. Although it may be coincidence, the fact that they are quite symmetrically placed with respect to the surrounding ditch pattern suggests that they may be more important than rubbish pits and are possibly burials.

Cott also found the complex pattern of ditches **K**, which have now been resurveyed at a greater sampling density over a slightly wider area. The findings in this survey strengthen Cott's view that these are possibly the remains of part of a building (a villa?), extending into the wood immediately south of the plot. It is notable that the parallel ditch **D**, running NNW to SSE, appears to lead into this complex, as does the curved ditch **E**. Local folklore has it that sometime, probably in the nineteenth century, the owners of the land, which was part of the Copford Hall estate, had a wood planted over the site of the villa in order to prevent the site being dug.

At least one of the strong magnetic responses **L** has a square feature, the largest being some 4m square. Similarly the anomaly at **M** (again a strong magnetic response) has some geometric structure. Both **L** and **M** are close to the current spring line (apparent during the winter months). The overall dimension in the longest direction of **M** is some 10m, suggesting the foundations of a building, perhaps a bath house.

### Conclusions

Parallel ditches **A** and **B** and the curved ditch **E** which have shown up as crop marks in aerial photographs of the site have been confirmed by this magnetic survey which has also confirmed the two features found by Cott, **J** and **K**, and revealed two new striking magnetic anomalies **L** and **M**, neither of which has shown up clearly as crop marks.

This site, with its ditch pattern suggesting more than one stage of development, a possible villa and strong magnetic anomalies which are difficult to interpret, raises more questions than the survey has resolved.

### Thanks

to Ida MacMaster for permission to use her aerial photograph, to Tim Dennis for help with the survey and data processing and for locating the survey site on the OS grid, and to Peter Cott, whose invitation to us to help him with his survey in 2000 introduced us to geophysics.



### Over 2100 years of Recorded History in One Field

or..... how people have been careless with their money over two millennia  
Francis Nicholls

Francis Nicholls, using his metal detector, found the following three artefacts within a few metres of each other on the Marks Hall Estate, in Market Field (is the name significant in this context?), opposite Marigolds on the map (Fig.1). This was the site of the CAG 2003 field walk.

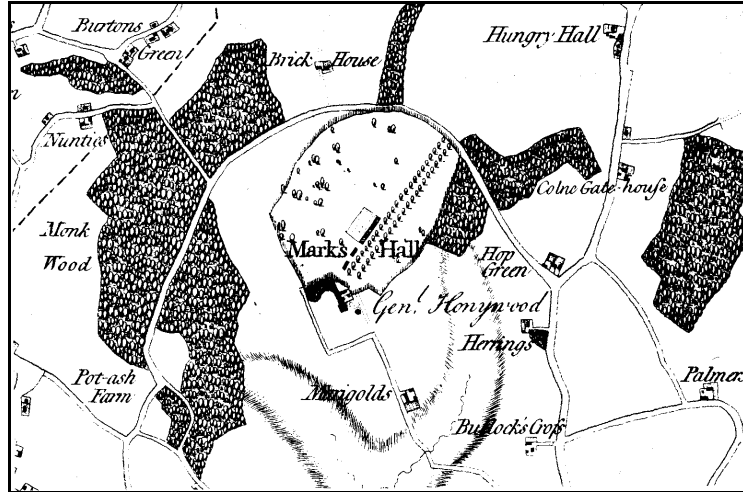


Fig 1

The Roman coin is a silver denarius (Fig.2) dating from between 189-180BC; the obverse shows a helmeted head of Roma facing right with an 'X' behind and a border of dots; the reverse shows the goddess Luna in a biga (a chariot drawn by two horses), holding the reins in the left hand and a goad in the right; the coin has been rather badly struck.



Fig 2



Fig.3

Fig.3 is a lead money token, stamped PH on one side, with the date 1764. The PH is General Philip Honywood, who inherited the estate of Marks Hall in 1758. He was a descendant of Sir Thomas Honywood, the prominent Parliamentarian who took part in the Siege of Colchester, was responsible for saving the Town Walls from demolition and whose tombstone stands alongside the east wall of The Hollytrees. Philip Honywood was responsible for a number of improvements to the Marks Hall Estate, the most important of which

was a church, built of Suffolk White bricks and polygonal in plan, a church design which was popular during the mid-eighteenth century. In 1764, the General commissioned Timothy Skynner, a surveyor and map-maker to survey his estate. The workers would have been paid with tokens such as this, which would then have been used to buy goods from the estate or could have been exchanged for legal currency.

Fig.4 is a new penny, minted in 1974

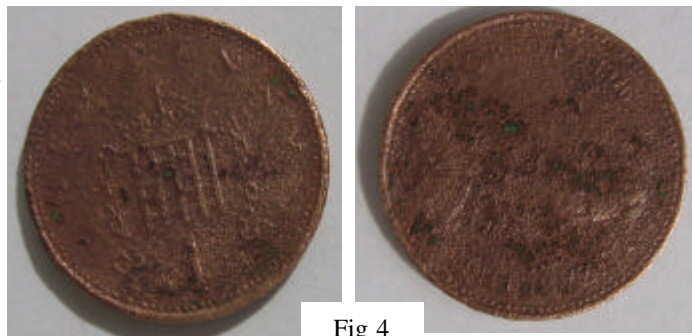


Fig 4



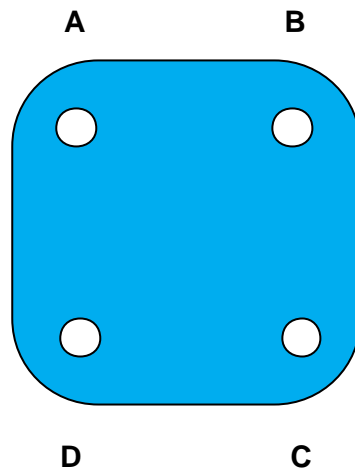


Fig 5 Timothy Skynner's survey of the Marks Hall Estate  
 Courtesy of the Trustees of Marks Hall Estate



## Tablet Weaving

Freda Nicholls



Tablet weaving is a technique of combining warp and weft, characterized by the use of flat tablets, or cards for the production of the shed, (see diagram above). Tablets were made of stiff material such as wood or bone. A wooden tablet from a cart burial at Dejbjerg Bog in Denmark dates from the early Iron Age. Modern tablets are made of cardboard. They are most commonly square but can be three-, six- or eight sided. Every tablet has a hole punched at each corner and through each of these holes a single warp thread passes. The shed is changed by turning the tablets, which means that each is revolved about its centre point like a wheel. This causes some threads to rise and some to fall and so presents a new opening for each passage of the weft. The tablets can be turned forward or backward, either as a pack or individually, making many weave structures possible.

No loom frame is necessary for tablet weaving. The warp can be tied between any two vertical supports, such as a door knob and a low chair back; the weaver then sits straddling the chair and shifts its position to adjust the warp tension. The warp may also be stretched between bars and handled as a back-strap loom. The weaver needs only to shift position to change the tension of the warp.

The earliest known fabric which could have been tablet-woven is the so-called girdle of Rameses III (dated before 1197 B.C.) Also in the category of fabrics which could have been tablet-woven are the belts from the women's graves at Borum Eshøj and Egtved, Denmark. The dates of the twenty-second dynasty in Egypt, 945-745 B.C are also considered to be a starting point for tablet weaving's history, although some textile historians dispute this.

The earliest certain examples of tablet weaving all show its use as a starting border for a textile to be woven on a warp-weighted loom, not as a separate band. The earlier starting borders in a warp-faced plain weave, from the Neolithic, could have been woven on two-holed tablets but this cannot be proved.

In the past, tablets were fortunately made of lasting materials so, even in the absence of textile remains their survival can point to the existence of the technique. A relevant example is the find of 200 bone and ivory tablets from Punic graves in Carthage, dating from 100 B.C. They consist of rectangular objects resembling bridges of string instruments. The fact that one looked like a Swedish multi-hole tablet, broken in half, led to their being connected with tablet weaving.

Archaeological finds of tablets are more convincing if several exactly similar tablets are found together. The finds become practically conclusive if the tablets are excavated in association with textiles whose structure demands their use. Probably the earliest examples of objects which could have been used for tablet weaving are two square ivory tablets, one complete with a hole at each corner found in the foundations of the Temple of Chouchinak in Iran. There is also a triangular and a square tablet made of pottery, both with holes, from Susa, also in Iran. All these are roughly dated to the second millennium B.C.

The square four-holed tablet has always been the one most used. The corners of the square tablets are always rounded. After prolonged use, there tends to be a depression near the centre of each edge from the constant pressure of the fingers when turning. The number of tablets used in the past varied a great deal. At one extreme is a tenth-century brocaded band from the vestments of St. Cuthbert which needed only seven tablets, at the other, a band from Tlemcen in Algeria needing about 300.

In the past the warp for tablet weaving has been spun from all the common natural fibres – wool, cotton and silk, linen is rarely found as the sole fibre. Ideally the warp yarn should be:

1. Strong – to withstand the hard beating and later the hard wear.
2. Smooth – to allow the shed to clear easily without threads sticking between the tablets and also to show up the intricate designs.
3. Resistant to rubbing – to withstand the wear in the tablet's holes.
4. Fairly tightly plied to increase the firmness of the band.

### The So-called Rameses Girdle

This beautiful textile is sometimes miscalled the girdle of Rameses III, but it is only connected with that king by an ink inscription it once bore, which referred to the second year of his reign – 1178 B.C. It was found and collected and a picture of it published in 1855. As the tomb of Rameses was not found and opened until 1881, the girdle obviously was not buried with his mummy. It probably belonged to some other wealthy owner.

The girdle is 5.2 metres long and tapers with perfect regularity from its start, where nearly 1,700 warp threads give it a width of 12.7 cm, to its finish, where over 600 threads give a 4.8 cm width. It is woven of linen, used both natural and dyed. The colours red, blue, yellow and green are well preserved.

The first attempt to weave a section of the girdle using tablets was made in 1916 and since that time a number of experiments have been carried out designed to show that the girdle had been produced using the technique of tablet weaving.



Rameses wearing his girdle (from House of Pharaoh reproductions)



The Girdle of Rameses III  
from Prehistoric textiles E.J.W.Barber (Princeton, 1991)

If you would like to know more about tablet weaving, a useful web-site is [http://www.vertetsable.com/demos\\_cardweaving.htm](http://www.vertetsable.com/demos_cardweaving.htm)

## **An Experimental Bonfire Firing at Great Tey**

Anna Moore, Pauline Skippins and Andrew White

### **Introduction:**

The discovery at Tey Brook Farm in September 2002 of a Bronze Age ring ditch and a number of associated urned cremation burials has already been reported in an earlier edition of this Bulletin<sup>1</sup>. Work on the site has continued and to date 15 cremation burials have been discovered.

### **Background:**

We attempted to replicate the Bronze age pottery identified by Philip Crummy as Deverel Rimbury urn (Colchester Archaeologist No 16 p.5) which dates to between 1750-1200 BC.

The style, shape and decoration of our own pottery was intended to replicate that of the whole Bronze Age urns we had excavated. One problem we had to grapple with was matching the fabric of our modern clay to that of the pottery found on the site. We discovered a source of clay on site which was processed in order to make it workable, as described below and used it to make the reproduction urns.

Sherds of excavated pottery were examined under an x10 hand lens. These were mainly oxidised, with some reduction internally or a mix of both, and dull orange brown on the interior and exterior surfaces, which were very heavily tempered with quartz/flint and rough to the touch. The moderately sandy matrix appeared open and laminar in fracture with a poorly sorted arrangement of quartz/flint particles of differing sizes and shape, the larger being more angular and the smaller sub-angular to sub rounded. This indicated that both quartz and flint had been added to the clay and that very little cleaning/processing of the clay would have been necessary. Generally, the more angular the inclusion then the more likely that it has been deliberately added. There also appeared to be sparse small specks of black grog (crushed ceramic) or burnt organic matter and sparse mica was noted.

Quartz and other minerals are naturally present in sedimentary clay and rounded by weathering and abrasion, which occurs when the clay is transported by glacial movement. Sand can be a deliberately added inclusion as it was in much Roman pottery, but this can be differentiated, as it is normally well sorted and similarly sized within the matrix. The angular inclusions of calcined crushed flint are one of the corroborative indicators that it was hand made, together with the more obvious uneven nature of the pot.

The purpose of adding temper/filler inclusions is primarily to strengthen the wet clay and prevent the pot from collapsing during construction. It also opens up the body of the wet clay so that any trapped water converted to steam during heating can escape without spalling or blowing the surface. Temper also enables the clay to undergo the various chemical changes, which occur during the firing at a much lower temperature, because the clay particles are not so closely aligned, as they would be if purer more refined clay had been used.

We have no evidence of kiln use in Prehistoric Britain and scant evidence of any firing areas, other than a few hearths. Bonfires would become archaeologically invisible after such a long period of time and specific use of any hearths for pottery firing would be difficult to confirm, unless the pots/wasters were extant. Two clay hearths were found at the Late Bronze age ceremonial/settlement Shinewater site near Eastbourne in 1995, with associated pottery and butchered animal bones, but this is not conclusive proof of a manufacture site.

### **Materials:**

The first clay was taken from a cross section of a Roman linear feature. The clay was dried and broken down with a hammer to powder so that stones could be removed. The powdered clay was then slaked down in water to produce a sandy brown creamy slurry, which was then dried and kneaded. The clay was felt to be of poor quality and earthy. It had a rank smell and would not easily hold its shape. A small pinch pot was made with this clay, with no inclusions. The pot was fired successfully in an electric kiln to 1000°C and fired a bright brick red colour. Four test tiles were made incorporating crushed flint, grog (crushed fired clay), shell and straw, and were also fired in an electric kiln.

Further clay was dug and prepared with the same method as above and used to make the replica Bronze Age urns. Red earthenware clay was incorporated into two pots to provide greater plasticity as it was felt that the clay from the site was too 'short', i.e. too earthy.

### **The pots:**

The following pots were hand-built with coils of clay. The bottoms of the pots were rolled out with a rolling pin and the walls were smoothed with fingers and wooden tools and then beaten with a wooden 'paddle'.



- A. A 'bucket' style urn was made with the raw clay with no inclusions. This was fired in an electric kiln and came out bright brick red without cracking.
- B. Another 'bucket' style urn was made with the clay which had incorporated into it a quantity of crushed burnt flint; the bucket shape slumped slightly due to the poor quality of the clay; a cordon and four 'horseshoe' handles were applied with thumb pressure.
- C. was made with the same clay combined with some commercially produced red clay and crushed burnt flint; this pot was also decorated with an applied cordon and 'horseshoe' handles.
- D. was a similar urn made entirely from commercial clay which had burnt crushed flint incorporated into it.
- E. A small pot was thrown on a wheel using commercial earthstone clay with shell inclusions.
- F. A large replica urn was also thrown, using commercial grey stoneware but without any inclusions.

B  
E  
D  
F C



The bonfire firing:

Tuesday 28<sup>th</sup> June 2005

The firing took place on a warm sunny day, with a strong wind blowing from the south-east. A pit had been dug 2m x 1m x 300mm deep in a north-south direction. It was lined with flints to provide a dry base which was warmed prior to firing by laying hay on the flint base and lighting it. Wood chips were spread over the warmed flints and the pots placed on them. C was inverted, the others placed the right way up. Hay was packed around the pots and softwood off-cuts were laid between them. Faggots of silver birch and small-leaved lime were then formed into a pyramidal bonfire. The fire was lit at 11.45am and burned vigorously for half an hour with flames reaching 8-9ft. The fire burned itself out by about 2pm and the pots were lifted out at approximately 3.30pm.

D had shattered along the lines of the coils; the bottom of C had broken and the pot had cracked diagonally; the decoration on both C and D had fallen off. B cracked vertically almost into two halves but not along the lines of the coils. The clay had all fired to a hard consistency, i.e. ceramic change had occurred. The exteriors were mostly black, but where the pots were broken, the interior was red, indicating that the bonfire had reached the required temperature to cause vitrification.

Pot E remained intact without any sign of cracking. F (the clay without any inclusions) held together but was covered in numerous cracks caused by thermal shock.

Conclusions:

The lessons learned from the experimental firing were:

- Create a smaller bonfire and cover it to hold in the temperature and give longer burn. This could be done by covering the fire with material such as turf (dried animal dung has also been suggested, but the firing group is rather less than enthusiastic about this idea).

- Use hardwood, oak and elm as part of the wood-burning process to prolong burn and increase temperature.
- Build coil pots with thicker bases but dry more thoroughly to avoid 'S' cracks. Use stick and thumb decoration more vigorously to assist in consolidation.

The Great Tey experimental firing was a great success, even though we cannot claim to have produced fully usable pots. Stylistically we were successful in reproducing 'Bronze age' urns, however just as we had anticipated, the clay matching was more problematic. On examination of the replicated potsherds visually and under the hand lens they are more uniformly oxidised red in the core, but reduced, burnished and smooth on the surface with no surface inclusions visible. They have a more conchoidal fracture as a result. The matrix is more evenly sorted and the quartz particles are rounded and abundant whilst the crushed flint is sparse and much smaller in size than in the genuine urn material. The original clay contains larger and more abundant fragments of deliberately added calcined crushed flint and quartz and this results in a more open matrix.

After reviewing our results we have arranged another experimental firing, and we will hopefully be able to report further success in the next bulletin.

Contributions for this article were from Anna Moore (potter), Pauline Skippins (technical information) and Andrew White (who dug and refined the clay, planned and built the bonfire and was the inspiration behind the project) .

1. James Fawn, "Three Bronze Age Burial Urns from Great Tey", CAG Bulletin 43.3

Glossary:

Laminar: plate like, stratified

Calcined: heated strongly

Spall: flakes of clay pushed or blown out of the surface of the vessel due to steam escape or trapped stone/air.

Reduced: black, grey, brown colour due to carbon monoxide sucking the oxygen from the iron oxide within the clay.

Conchoidal: breaks as flint or glass, shell-like ripples.



**Short notes**

Richard Shackle

**Medieval mirror case**

Fig 1 is a drawing of a medieval mirror case found by Norman Bone in Colchester in 2005. These objects are fairly rare and some professional archaeologists working in Colchester have never seen one. It is made of tinned bronze with glass decoration. It is 3.3cm in diameter and 1cm thick when closed. It consists of two shallow dishes about ¼ inch deep. The dishes are joined by a pivot on one side and closed with a catch on the other. On the outside small thin squares of glass were attached. Only one square is still in position but there are shiny marks where the others used to be. Between and on top of the glass squares are small bronze tubes, attached end on to the case. These can best be seen in the, not to scale, sketch of the side view of the case (Fig 2). At the outer end of each tube is a small green glass bead. I do not know how these mirror cases worked but I suspect that there was a piece of curved glass inside with a coating of mercury. I assume that that these mirrors were only owned by high status women.

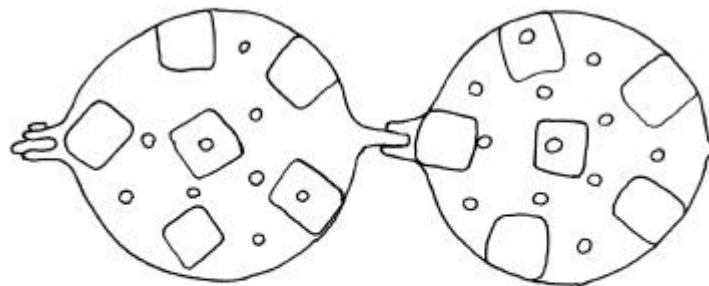


Fig 1

Fig 2



Not to scale

**Roman pin head of a dog**

This small bronze object in the shape of a dog (Fig 3) was found by an anonymous person in Colchester. It is 2cm across. There is a large hole in the base and a tiny hole in the middle of the dog's back. It is thought that a long pin of bone or wood would have been attached to the large hole. This would make a decorative pin to hold a woman's hair in place.

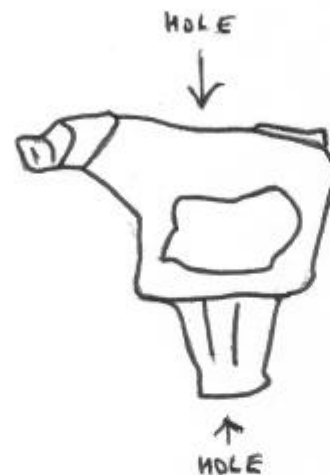


Fig 3 Not to scale

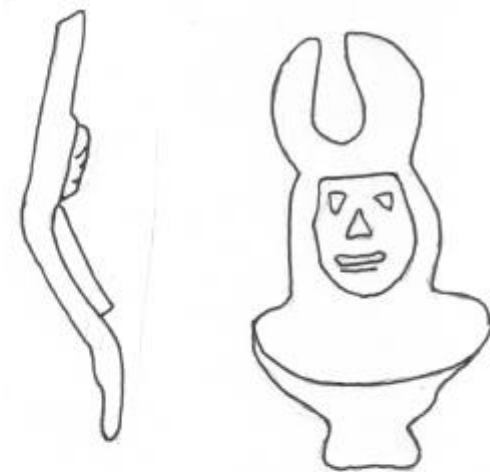


Fig 4 Not to scale

**Roman Goddess**

This bronze object (Fig 4), 3.9cm high and 2.1cm, across was found by Norman Bone in Balcerne Hill in 2005. It appears to represent the head and shoulders of a Goddess with a horned head dress. The horned head dress suggest a Goddess from Egypt or the middle east, perhaps brought here by Roman soldiers based in Colchester.

## Folleys, Follies, Alleys and Wynds

Bill McMellon

Sally Heffer, in Bulletin 37, discussed the use in Colchester of the word "folley" to describe what is more usually known as a lane or alley. Having been unable to find any dictionary definitions for that spelling, she asked for readers' comments and, in CAG Annual Bulletin 42, James Fawn responded.

Heffer's article looks at possible derivations (ruling out "folly" "a foolish act..." and "folies" "a musical review...") and speculates that there might be some military connection as several folleys in Colchester seem to be linked to the garrison (e.g. Artillery Banks Folley and ) but notes that there are folleys not linked to the military at all (e.g. Kendall Road Folley).

James Fawn gives examples of how "Folly" and "Folley" can be used interchangeably. He quotes Rex Hull who "in his `Roman Colchester'" lists Artillery Folley in the text but Artillery folly in his index. As James says, the spelling is only an issue when the word is written; when spoken the sound is the same. One of his conclusions, based on an examination of old maps, is that the "ley" spelling is a modern one, possibly based in part on the desire of nineteenth century map-makers to avoid any appearance of foolishness within Colchester and in part by analogy with the word alley. In what follows, I do not wish to dispute what has

When I first read Heffer's article I too went to the dictionaries and found no example of the "ley" spelling. The glossary to my "... Complete Works of .. Chaucer" does, however, include the word "'Foll(o)wen', follow; imitate" together with various words associated with foolishness.

This led to a train of thought originally begun by my father. He was a Lancashire man, married to a Gloucestershire woman, and would sometimes wonder why his native Bamber Bridge had alleys whilst in Cheltenham there were lanes. He also told me that in his youth a marble (that is the glass ball with which the game of marbles is played) was known as a glass alley. Until the Colchester discussion of folleys arose this was one of those odd facts which one retains although (or because) it has no meaning. Why should a marble be an alley? Until writing this article, I believed that it must derive from the French verb "aller", to go. A marble goes along the ground, just as one goes along an alley or follows a folley? According to Fawn, alley comes from the "old French" *alee*. A 1987 Collins dictionary confirms this "C14 from old French *alee*, from *aler* to go ultimately from Latin *ambulare* to walk". It is embarrassing to record how much painful thought was needed on my part to reach this conclusion independently, and how a glance at the same dictionary could have told me that an alley is also a "large playing marble (c18: shortened and changed from alabaster)". The glass alley turns out to be a red herring and a folly to boot.

I can add little to the list of Essex Folleys except to say that Wormingford has a (nineteenth century?) Folley cottage at the end of Collets Chase (itself an interesting word using movement to describe what is essentially a lane). On Chapman and Andre's 1777 map of Essex, this routeway is shown as being much longer and running all the way down to Garnon's farm, which itself appears in Domesday, or at least Robert Gernon does. Much of the old trackway can still be seen as wooded wasteland running between the fields. In addition, according to my street-map, Tiptree has both a Folly Lane and a Folly Chase, which are joined.

As to the age of these terms, I am reluctant to speculate except to wonder whether they might be very old indeed. Andrew White, with whom I discussed this article, pointed out that the North East has "Wynds". To my mind, that indicates a possible Norse origin. If so, then Colchester's Saint John's Wynd may go back to Canute's time? These minor route ways have retained old names because of their relative unimportance? I should add that my trusty dictionary says that there is a "Scots" origin for this word. Might a Scots word have a Norse origin? When could the Scots have been naming Colchester routeways?

Finally I would like to quote a passage from Bagshawe RW (1994), "Roman Roads", p21 where there is: "Another place name puzzle... (which) is still only a theory and a hunch and it is this: if we eliminate Follies meaning architectural foolishness and those meaning leafy bowers (foliage) we are left with others which make no sense but which occur with uncomfortable frequency along Roman Roads. Possibly they were something to do with the verb to follow. We do not know the answer, but it will pay us to keep an eye open for them. Examples are Folly Farm, Folly lane and so on". This comes in a passage on how place names may be helpful in tracing Roman Roads.

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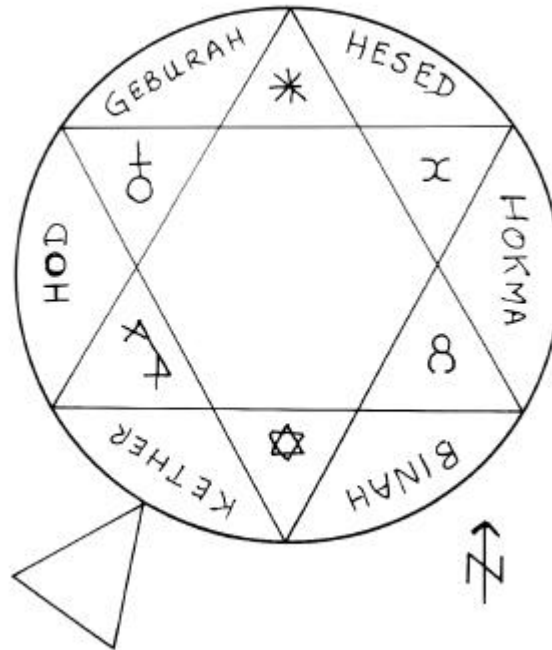
**Strange Goings On - A Reply**James Fawn**Strange Goings On - A Reply**

James Fawn

Our former Secretary, the late Kay de Brisay, wrote the following article for CAG Annual Bulletin Vol 16. At the time she received no reply to her implied question about what was going on, but I re-read the piece recently and thought that an hour or two in the Public Library might provide some insight.

*Strange Goings-On  
Kay de Brisay*

*This intriguing, possibly sinister, design was found in October 1972 on the concrete floor in the kitchen of a small deserted cottage in Layer de la Haye. The circles and triangles were in white chalk and the words and symbols in red. A similar device was found in the same place some months previously. The room has now been demolished and a new building put in its place; but we thought it should be recorded and that it might be of interest to some of our readers.*

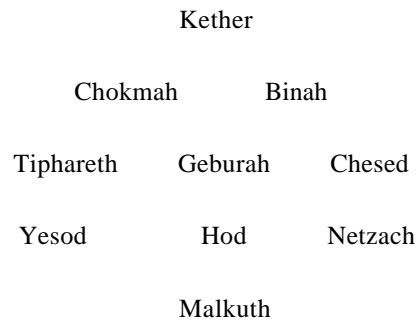


The figure consists of a circle enclosing a six-pointed star. If the star were five-pointed, the figure would be known as a pentacle, associated with white and black magic; seven-, eight- and nine- pointed stars also occur in the occult. The name of the six-pointed star varies with its followers and, for example, is identified with the star of David, the earth star when it is related to divining, and as a male triangle enmeshed with a female triangle (Do not ask me which is which). There may be several other interpretations. It even turns up in Dan Brown's blockbuster thriller, *The Da Vinci Code*, currently being made into a film.

Some of the signs in the apices of the triangles may be easily recognised as glyphs commonly used in astrology, Taurus the Bull, Pisces, a sextile, Venus and a smaller version of the two combined triangles. They suggest that the figure may be a form of horoscope.

The words outside the triangles appear to have a religious significance for they come from the Tree of Life which is a feature of the mystical branch of Judaism known as the Kabbalah. Its followers must study a symbolic Tree of Life with named stages, working their way from bottom to top.





The words in the figure are therefore from the upper three rows of the Tree of Life, with slight differences in spelling. The figure has room for only six of the ten stages; the reasoning behind the choices is not known, but obviously they are biased towards the upper part of the tree.

With archaeological propriety, Kay drew the figure as seen aligned north-south with a north arrow. However it was probably meant to be viewed with the triangle outside the circle uppermost so that Kether, the mystical residence of the godhead, would be at the top.

She suggested that the design might be sinister, but with its religious elements the intention may be the contrary. Lacking knowledge, I will refrain from further speculation. The figure is not quite archaeology, but Kay thought it worth recording as it must have meant something to somebody!

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## Small finds

### An Iron-Age pot

This late Iron-Age pot was found on the beach at West Mersea by Peter Wiltcher. It is a grog-tempered, wheel-thrown Aylesford-Swarling type pot of form Camulodunum 221a, dating from between 75BC - AD50+. The clay has tiny particles of jet-black grog added to the clay to improve the quality and finish. It is unusual to have a complete profile like this.

Drawing by Anna Moore

With thanks to Paul Sealey



Scale 1:4

### Crotal Bell

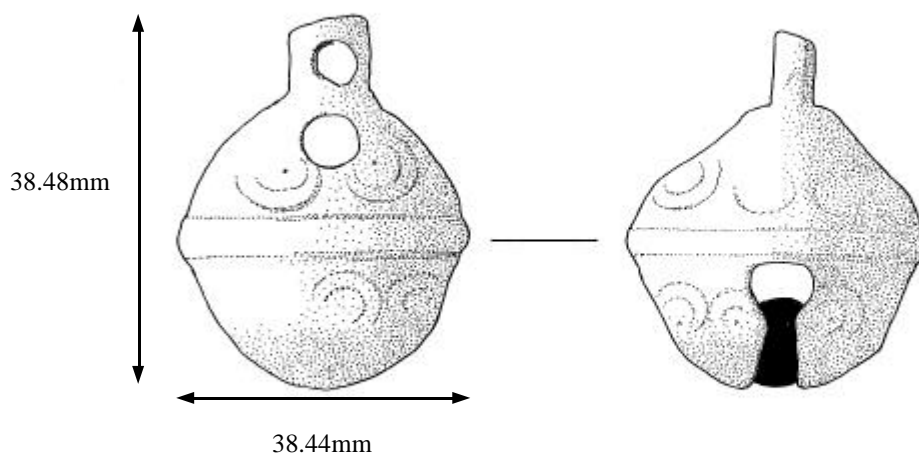
Francis Nicholls

Drawing by Anna Moore

Found in a field north of the Bronze Age Circle, Tey Brook Farm, Great Tey.

Approx. 4cm diameter, the bell probably dates from the mid 17<sup>th</sup> century and was cast in bronze. Although the founder's mark has corroded, the bell has a "sunburst" design on the upper and lower halves, typical of this period. The 'rumbler' or pea, which still survives within the bell, is made of iron.

It is thought that the term crotal is derived from a type of Greek bell known as a *krotalon*. The larger rumbler bells (5.5cm - 6.0cm) were often hung round the neck of a bell-wether sheep (a castrated male, chosen to be the leader of the flock). This particular crotal bell was probably one of many fitted to all the sheep of an entire flock. There are a number of theories for this custom but the most likely are (1) to help keep the flock together and (2) to warn the shepherd of any disturbance in the flock. A third possibility was that the bells were worn to ward off evil spirits.



### A Tale of Two Maps (and thirty three eleven-year-olds)

Aline & David Black, July 2005

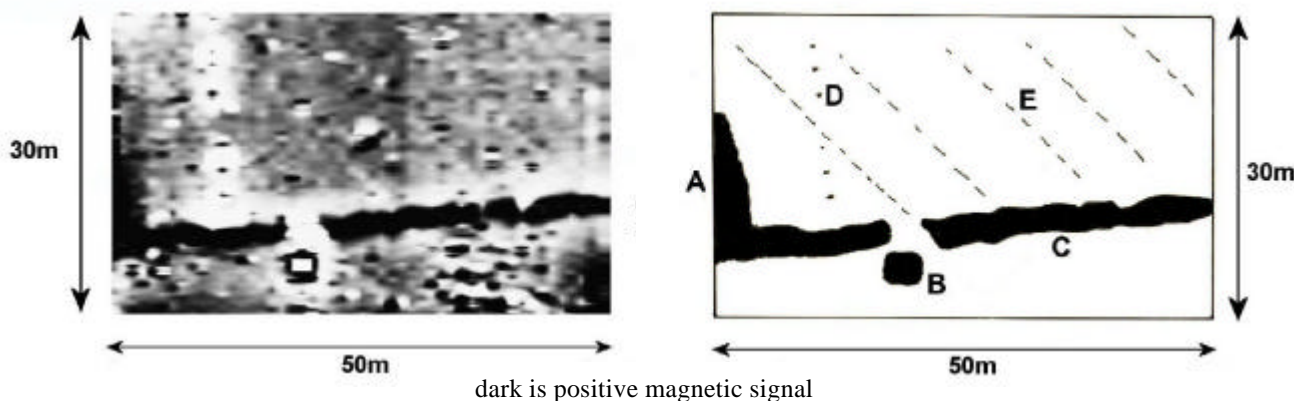
It was the best of times - a sunny morning in late June; the place - St Thomas More Primary School in Priory Street. Class 6, thirty three eleven-year-olds, inspired by the Time Team Big Roman Dig (and by their class teacher, Sarah Smith, a professional archaeologist) had invited us to do a magnetic survey of their playing field. A piece of flat grassland, just south of the town wall, was irresistible - who knows what the Romans might have been up to there.

The survey area, 50m by 30m, was laid out with enthusiastic help and an introduction to Pythagoras. How does a magnetometer work? We'd anticipated this question, and Class 6 needed an answer they could relate to. Some knew about a compass pointing north and with a collection of scrap iron we happened to have with us (doesn't everyone?) we showed that a compass could 'forget' about pointing north and respond to the iron instead. Crucially, we also had a piece of old brick which just made the compass needle move. So, with apologies to technically minded readers, the best we could do was to describe the magnetometer as behaving like a very sensitive compass made to forget about north, but to respond to iron, to what remained of brick walls and (we slipped in) old ditches which had filled up over the years.

Several members of Class 6 tried their hand at using the magnetometer. We tactfully explained that because they were likely to have bits of steel in their clothing (zip ends, shoe eyelet holes) and carried the magnetometer nearer the ground because of their smaller height, their row of readings would need to be re-done - but that was accepted.

It could have been the worst of times - what if the survey was blank? As adults we are disappointed but philosophical about a nil result, but it would be a poor introduction to the excitement that can be archaeology if their field yielded nothing. So it was with some adult trepidation that we all went back to Class 6's room and connected our laptop to their digital projector, downloaded the data from the magnetometer and processed it to create the geophysical image as they watched.

Relief - we had some strong signals - in fact some of the strongest we have ever had (with the exception of Pat Brown's back garden - but that's another story).



*The geophysical image is reproduced above, alongside a drawing of the main features*

Class 6 wanted instant interpretation. We were sure that the strong signal **A** came from the chain link fence, parked cars and rubbish skip nearest here to the survey area. The magnetic signal **B** is so strong that it overloads the magnetometer, resulting in the white rectangle seen on the plot. It has to be a large piece of ferrous metal. The white area which usually accompanies a strong signal overlaps the east-west linear feature **C** which we believe to be continuous across the survey area. What is responsible for **C**? We said we needed to look at the actual magnetometer readings before we dared to speculate. In the excitement of the morning and the imminence of school lunchtime we didn't even notice the north-south line of small strong signals **D** or the faint diagonal magnetically weaker lines **E**. **C** was a puzzle. The magnetometer readings were not strong enough to come from even a small iron pipe - and at 2m wide in places that's not small. Yet they were ten times greater than anything we have seen from a silted up ditch. What about brick? The width again bothered us for just the foundations of a wall.

Next morning the Local Studies section of the Library and ever helpful Richard Shackle produced the most probable answer.

The 1767 Sparrow map shows a tributary of the Colne crossing from west to east just to the south of the survey area. On the 1876 OS map, however, the tributary is only shown to the east of - what is now - Ernulph Walk and in line with our survey area. When was the stream moved north and where has the western part gone? Into a brick or ceramic culvert under St Thomas More's playing field? Quite likely. Interestingly, whilst our 'feature' lines up well with the stream shown on the 1876 map, the stream as shown on the 1767 map is some 30m further south. The culvert, if that's what it is, and the stream shown on the 1876 map follow the line of the trees to the east of Ernulph Walk, which on the 1767 map eventually comes alongside the north bank of the stream.

Well, Class 6 does have history under their playing field but we think it's the Victorians, not the Romans, that have been at work there - unless someone knows different...

Footnote: Feature **D** may be from a small iron pipe, although DB favours bits of ferrous metal, either the remains of an old boundary fence (for which there is no map evidence) or just happen to be in a line. Could feature **E** be gravel filled land drains?

### **Technical**

The survey was carried out using a Geoscan Research FM18 Fluxgate Gradiometer, owned by Colchester Museum Services. The operator walked from south to north along lines 1m apart, taking 4 readings per metre along each line.

The data obtained was processed using InSite software from GeoQuest.

It should be noted that in the Northern Hemisphere the maximum magnetic signal from any feature is displaced slightly to the south of the feature itself.





## **Winter Lectures 2004 - 2005**

### **Recording Second World War Sites**

Fred Nash, Essex County Council military archaeologist

11th October 2005

Notes taken by John Mallinson

During WWII Essex was the most heavily defended county in England. It is also unique in that a complete record was made at the time of all the defensive features that were constructed. Fred Nash is leading a project to relocate and record the current state of all these features, and to raise public awareness of the need for their conservation. He has already completed this work within the Urban Borough of Colchester, and is seeking help from the Group to complete the work in the Rural Borough. With an infectious enthusiasm, he described the process of discovery using the military records and maps, correspondence and photographs, and oral input from local inhabitants. He showed an impressive array of slides of the types of remains to be found – pill boxes, anti-tank defences, gun and mortar emplacements were prominent – many of them in Colchester. His appeal for help was well received, and it is expected that the group will be seeking Local Heritage funding, and will provide man (and woman) power to enable the project to go ahead.

### **The Early Industrial Archaeology of Colchester**

Andrew Phillips

18<sup>th</sup> October 2004

Notes taken by Aline Black

How should Industrial Archaeology be defined? Andrew's view is that Industrial Archaeology is not about digging anything up, but looking at industrial infrastructure and activity.

Whilst the bulk of Colchester's industrial archaeology has been demolished, much can be rescued from sources such as old photographs, oral reminiscences, newspaper advertisements and even Company letterheads which often had (perhaps idealised) drawings of their factory.

Andrew treated his audience to a selection of slides from his own unique collection. His first was a painting of a windmill in Mill Road (one of three post mills there). Colchester's water mills were represented by Choppins Mill and East Mill (Marriages) by East Bridge.

The site of the Napoleonic Barracks is shown on an 1805 map, behind Hythe Hill, remembered by the naming of Barrack Street. An idea of the size of the Barracks is gained from the size of its hospital - a brick building with 700 beds, one wing of which can still be seen as the central part of Essex County Hospital. The Garrison generated employment in the town - fodder needed for animals, food, beer and boots for the soldiers and even a large tallow candle factory at the corner of Brook Street and Hythe Hill.

Hodson's 1848 map of Colchester shows, as well as a large foundry (the Britannia Engineering Works), a large porter brewery on East Hill and another enormous porter brewery at St Botolph's. The St Botolph's Brewery is known to have been the first to have a decent steam engine - a Bolton and Watt - to pump the spring water for brewing (Colchester's breweries were all built on the spring line).

There were also two distilleries, the most interesting being the Culver Street Distillery, owned by Arthur T Cobbold, a junior member of the Cobbold family. Large Victorian Cellars, owned by Lay and Wheeler still exist under the High Street. There was also a fizzy drinks factory - Mallinson's.

Much of Colchester's industry at that time was connected with agriculture, one exception being the silk throwing (spinning) mill built in 1828.

The story of John Watts is an interesting illustration of the industrial importance of the railways; goods could now be reliably distributed throughout Britain. An 1860 photograph shows his works 'Watts - late George Lufkin - Stone Mason' which he later rebuilt, renaming it 'The Castle Architectural Monumental Sculpture and Garden'.

'Little Works' pop up all over Colchester: William J Bruce, Coachbuilder; Knapp and Son whose 1870 factory was sold on to H J Leaming, Clothing; A G George's Boot factory. A photograph of a shoemaking factory shows very young children at work. Many women out-workers relied on the pittance they earned to

supplement the family income.

It was the railways, coal and iron which changed Colchester from an agriculture-based industry to engineering. In the first half of the nineteenth century Colchester was rural, backwards, with little prospects. There was only one iron foundry, built by James Wallis in 1792 in the High Street. Wallis' became 'Catchpool, Stannard and Stamford' and was 'Stamfords' when it finally closed. The black bollards at the top of Scheregate steps are marked 'Catchpool and Son' and are dateable since the son was taken into partnership in the early 1850s. Many drain covers in the town are marked 'Stamford and Co. Colchester. In 1835 Richard Coleman set up 'Abbeygate Works' in St. John's Street (Abbeygate street is named after these works). He made the ironwork which can still be seen on North Bridge.

James Paxman was foreman at the Catchpool works, launching his own business in 1867. Andrew ended his lecture with photographs of Paxmans works, showing their growth, 7.5 acres in 1890 and even larger in 1897, and some of their products.

### **Norwegian Stave Churches**

Ian Bayford, Expert in Traditional Buildings

25<sup>th</sup> October 2004

Notes taken by Jean Roberts

There are 30 surviving stave churches in Norway, another 40 of which there are some surviving remnants and 200-300 others which mostly disappeared in the 19<sup>th</sup> century, only known from documentary evidence.

Pine was the timber of choice for houses and churches, while oak was used for shipbuilding. This pine could be used vertically or horizontally. Horizontal constructions used logs with notches on the underside fitting into their neighbouring log, with interleaved notches at the corners. This technique became more complicated and differed from region to region.

Stave construction evolved from these earlier buildings and consisted of vertical infill timbers, set into a frame of posts, wall plates and sill beams, supported clear of the ground on a plate. The vertical posts became thinner over the years. The Norwegian word "Stav" actually refers to one of the posts of the frame.

The interior was laid out with nave, chancel, apse and an altar surrounded by u-shaped rails. In some churches were tall posts known as "Masts" which created aisles, running all around the interior space. Others had a veranda with an overhanging roof that provided weather protection for the lower timbers and here the congregation was expected to leave their weapons and it has been said, lepers and pregnant women were expected to stand here!

The largest stave church, c1250 is at Heddal and although much restored, demonstrates the typical tiered, pagoda-like roof with wooden shingles.

The oldest stave church dates from the first half of the 12<sup>th</sup> century and is at Urnes. It was possibly built over two earlier churches; panels thought to be from one of these earlier ones are incorporated in the present church around one of the doors and inserted into the NE stave. The panels are intricately carved in high relief, showing intertwined, fantastic animals. This style of decoration found its way to England, as there are similar carvings around a church doorway in Hereford.

During the 17<sup>th</sup> and 18<sup>th</sup> centuries some of the churches were decorated, creating colourful interiors.

### **Demystifying Geophysics**

Tim Dennis, University of Essex

1st November 2004

Tim delivered a very comprehensive lecture on his subject, the notes of which have become available to students on an Archaeology course. They can be viewed by logging onto :

<http://privatewww.essex.ac.uk/~tim/ARCH/UNV0432>



## **Archaeological Evidence for Boats and Ships in the Thames Estuary from Medieval Times to the 19th Century**

Damien Goodburn, Ancient Woodwork specialist University of London

8<sup>th</sup> November 2005

Notes taken by Andrew White

### **Background**

Damien Goodburn restricted his talk to small - medium sized vessels but widened the topic to include boats going back to Bronze Age. The wet soil conditions of the Thames Estuary are ideal for the preservation of wooden structures. Even metal and material used in the making of sails have been found well preserved.

### **Bronze age:**

Recently a Bronze Age boat has been found at Dover which shows a construction method of stitched planking. Vessels of this type and age have only been found in Egypt and this find therefore is of considerable international importance. A reconstruction of part of the hull has been undertaken and is on display at Dover Museum.

Dug out boats have been found in numerous locations including the River Lea. Dug outs were used from the Bronze age to as late as 1400 AD. Local traditions are visible in the designs. Impressions of tools used in their building can help with their dating along with dendro-chronology.

### **Anglo Saxon:**

During the Saxon to early medieval period expanded dugout canoes were built. They consisted of traditional dugout forms with planks added to raise the freeboard. These were attached with pegs or iron staples and caulked with moss. There is no evidence that these vessels were ever sailed. The Anglo Saxon planked boats were clinker built (overlapping planks) with internal frames. These frames are much bigger than in their sister Viking vessels. They are also flatter bottomed with a shallower draught, ideal for loading on the East Coast. They had a single square sail with a large mast step. The planks were made by splitting straight green oak logs and finished with broad bladed axes. The planks were held together with wooden pegs.

### **Vikings and Normans:**

Viking boats were built on the South Coast using iron rivets and with a deeper draught. Tree ring dating has been used not only to date the construction of the vessel but also to define the origin of the timber. Major timbers such as large planks became scarce because of the loss of woodland in lowland Britain and techniques were developed for using shorter planks. Timber was even imported from Ireland. Sawn timbers started to be used in the 13th century. By the 14th century the bottom planking of coastal trading vessels such as the cob had their timbers laid edge to edge but with the upper hull built in clinker construction. This edge to edge planking (carvel construction) was probably used as a result of Spanish and Italian influences. By the 17th century all larger vessels were built carvel construction but clinker built wherries survived. Thames barges are noted for their shape and may have been modelled on West country trading vessels which many of the characteristics of Roman river barges.

There are clearly many gaps in our knowledge and much research yet to do.

## **Excavations at Lodge Farm, St Osyth**

Mark Germany, Field Archaeologist Essex County Council

15<sup>th</sup> November 2004

Notes taken by Angela Grayston

The site, with numerous known crop marks, was excavated prior to the construction of a large reservoir and the extraction of sand and gravel. Twenty seven months were spent on the 4½ hectare site between 2000 and February 2003, revealing some 14,000 deposits. The relatively high ground with well-drained fertile topsoil would have been an attractive place to settle, with nearby estuaries and sea providing fish, shellfish and birds eggs and sheep grazing on salt marshes.

A surprising feature found on the site was a **causewayed enclosure** from the Bronze Age. It consisted of three circuits of interrupted ditches that had not previously shown in crop marks and is only the third to be found in Essex. This type of enclosure was the first attempt to enclose land and was possibly used for ritualistic purposes. Within this enclosure were 120 **smaller pits** containing finds which included Mildenhall ware and flints from this possible flint napping area. Finds that had been deliberately placed as ritual offerings came from the

charcoal-rich deposits of these pits and have been carbon dated to around 3500BC.

A very rare **Pond Barrow** from the early Bronze Age was also found. This was a shallow saucer-shaped feature 10m in diameter and 50cm deep, containing scorched ground with charcoal and burnt human remains and may have been a site for cremations.

Groups of **small ring ditches**, tightly packed together and associated with cremations, were found. This formation is typically found in the Tendring Peninsula.

**Bucket urns** with bead impression decoration, dating from the mid Bronze Age, contained cremated remains, but very few were complete. One contained the remains of an adult female and inside, a smaller bucket containing the remains of a small child.

Finds from the Middle Iron Age included a **trackway cross roads** and **round houses** within ditched enclosures. Many of these dwellings had East-facing entrances, typical of this area. Other structures included a six-post **granary** containing seeds of oats, barley and brome grass and a nine-post structure on stilts, possibly another granary.

Later features included a **13<sup>th</sup> century croft**, together with a pit and pond that may have been used for cleaning skins, washing fleeces, etc. High class 13<sup>th</sup> century pottery and a floor tile could have come from the Priory.

### **Reproducing Roman Pottery**

22<sup>nd</sup> November 2004

Gilbert Burroughs, potter and amateur archaeologist

Notes taken by John Wallace

Gilbert Burroughs was a farmer for 50 years, before becoming an archaeologist and specialist potter with a particular interest in Roman Samian Ware.

He has become an expert in making reproduction Samian, producing a wide range of jars, bowls and dishes over the years for museums (including all the Samian for the London Museum exhibition in 2000), schools and on TV for Time Team. At the Roman fort at Cocker mouth he had to make both a mould and turn out a bowl from it in 72 hours. The mould was made on Friday, together with the stamps to reproduce the pattern on the bowl. The wet mould was dried in a fan oven by Saturday evening and then into a kiln overnight. By 15.30 on Sunday it had been used to make a Samian bowl as shown on the programme!

Samian domestic Ware was imported in large quantities by the Romans from southern Gaul during the Roman occupation. Samian was made in this country, principally at Colchester, and it was probably Gaulish potters who came over and taught them. The characteristic Samian depends upon the type of clay used and particularly that used for making the slip which is rich in ferric oxide and which, after firing, gives Samian its smooth red finish. First a mould is made and a pattern is stamped or impressed on the inside. After drying, the mould is carefully fired, cooled and mounted on a wheel. The clay for the bowl or vessel to be made is pressed into the mould, the inside turned smooth and left to air dry. It is then carefully removed and the coating of slip applied. The mould is then used to produce a large number of identical vessels. The slip is made up of a weak mixture of clay and water (the Romans were believed to have used sour wine), carefully evaporated to a smooth cream which can be poured or brushed onto the pot prior to firing. The firing is critical and depends on achieving and maintaining a temperature of over 700°C. After a certain time the air is excluded from the kiln, and after a further period, an aperture is opened admitting oxygen, a process known as reduction. This is the process that gives the beautiful glossy red Samian finish.

The speaker showed slides of a Roman type kiln he had built and loaded with his Samian reproduction pottery. The kiln was topped off with grass and clay. After firing it reached a temperature of 950°C. The pots were removed two or three days later when it was cool. Several slides were shown to illustrate various types of Samian Ware he had made, some of which are referred to as "Dragondorff", including Drag27 and Drag24 types and Drag36 bowls.

Samples just dried and turned to a smooth finish were shown, also a batch with slip applied and ready for the kiln and a beautiful fired bowl with the characteristic red Samian colour.

Gilbert had visited the site of a Roman Samian "factory" in southern France, and also a Museum nearby dedi-

cated to Samian. The Museum not only displayed a great many original moulds but also the stamps used to imprint the designs both inside and out. There was a reconstruction of an "Industrial Size" Roman kiln, together with kiln furniture consisting of terracotta pipes to carry away the smoke, and many shelves on which the pots could be stacked for firing. There had to be an air intake which could be closed and opened to control the reduction process, however its precise location was unknown.

There was a table full of "hands an " examples of the speaker's excellent Samian Ware including moulds as well as finished pots. The Colchester Museum has a superb collection of locally excavated Samian Ware and moulds.

### **Everyday Life in Egypt**

Miriam Stead, former Curator of Egyptian Antiquities at the British Museum

29<sup>th</sup> November 2004

Notes taken by Freda Nicholls

When Herodotus visited Egypt at the very end of the dynastic period he thought it was a very peculiar country. The climate was unusual, the River Nile behaved like no other river in the known world, and the relations between the sexes were extraordinary.

Egypt is an African Mediterranean country. The first cataract of the Nile, just to the south of the modern town of Aswan, marks the traditional southern boundary of Egypt, although at times of expansion it extended into Nubia. This southern region is known as Upper Egypt while the northern area including the Nile Delta is known as Lower Egypt.

The River Nile allowed the first Egyptians to settle successfully in an otherwise arid part of North Africa by providing a dependable source of water for drinking, cooking, washing and waste disposal. In the absence of major roads and wheeled vehicles, the Nile served as the main transport route linking the towns and, as the river flowed from south to north while the prevailing wind blew from north to south, movement both up and down the country was made easy for any boat equipped with both an oar and a square sail. However, it was the annual Nile inundation or flooding which had a profound effect on the development of Egyptian culture.

Agriculture was totally dependent upon the inundation. Each year, from July to October heavy summer rains caused the river level to rise dramatically, flooding all of low lying Egypt, irrigating and cleaning the land and depositing the deep layer of fertile mud rich in minerals. When the waters subsided in late October they left behind a thick moist soil ideal for crop cultivation. Crops sown in November almost invariably led to good harvest in the late spring. The level of the Nile was carefully monitored at various points along its course; while too high a flood could damage settlements, a series of low floods could cause famine.

The geography and climate of the Nile valley had an effect on building practices. As a rule the Egyptians constructed their temples and tombs out of stone and their palaces and houses out of mud-brick. A well-built mud brick house was naturally insulated - warm in winter and cool in summer. Houses were sparsely furnished although the internal walls were often plastered and painted with bright and elaborate scenes. It was customary to sit or squat on the floor, although roughly made stools were used. Formal chairs with backs and arms were expensive status symbols used only by the upper classes. Food was usually served on woven mats spread on the floor, bedrooms were similarly stark; in fact specific bedrooms were a luxury only for the wealthy; most families had only a mat or a folded linen sheet and a hard curved stone or wooden headrest. The wooden beds which were available were costly and used only by the wealthy. The best beds were fitted with integral 'springs' made from rushes and interlaced cord. The rest of the furniture was minimal. There may have been a low stool to sit on while dressing the hair or putting on makeup. Because of the lack of good Egyptian wood, wardrobes and cupboards were rarely used. Instead, chests, boxes and woven baskets were used to store clothing, linen and personal possessions. A wooden toilet box contained unguents to treat eye infections caused by ever-present dust, and cosmetic creams such as galena, a compound of lead and sulphur!

An item found in all houses was the lamp. Lamps ranged in design from simple oil-burning bowls with floating cloth wicks to modern looking standard lamps; long carved wooden pillars designed to support a large pottery oil-burning lamp.

Food was usually plentiful although failure of the inundation caused famine but this was a relatively rare disaster. Grain (spelt) was harvested with sickles made either of copper or bronze or stone teeth set in wood or bone. Fowl were hunted and fish were taken from the Nile. Vegetables and fruit were grown in irrigated gardens. Sheep and goats provided a source of milk and cheese and along with pigs, meat. Wine and beer were drunk and, as one wall painting showed, sometimes over indulged.

### **The Anglo-Saxon Landscape in Norfolk: some new approaches**

Andrew Rogerson, Senior Landscape Archaeologist, Norfolk Museums Service

6<sup>th</sup> December 2004

Notes taken by Ron Cattrell

Norfolk Landscape Authority is responsible for safeguarding Norfolk's Archaeology and its responsibility is to record and conserve finds found within the County and to interpret and provide information on the historic environment. It has a staff of four and the offices are housed in a wing of the Norfolk Rural Life Museum at Gressingham near Norwich. The funding for the organisation is provided from Norfolk County and District Council, Norfolk Museum and Lottery grants.

As soon as the organised defences of the Roman Province of Britain weakened in the early fifth century, the Anglo-Saxons began to colonise in earnest. Their eventual success over the next two centuries (AD 400-600) is dramatically shown in the place names of Norfolk. The overwhelming majority of the names, both major and minor, are of Anglian origin, which emphasises the political and linguistic domination the Anglo-Saxons were able to achieve over the native British population.

New methods of find analysis have been developed for the Middle-Saxon period (AD 650-850), from which date the settlement history of Norfolk has become much clearer. The acceptance of Christianity, a powerful new religion, may have impelled local people to form larger settlements to facilitate regular worship. On the other hand, Pagan sites may have been deserted for purely social and economic reasons of which we have little knowledge.

The period AD 600-800 illustrates how the social and economic structure expanded from the early farmstead settlement into the village structure and eventually to the formation of the early towns such as Thetford, Yarmouth and Norwich. The pastoral side of Anglo-Saxon farming was fully investigated here and has shown that in spite of the well managed grass and woodlands it was undoubtedly tilting towards arable farming for feeding a growing population.

The late sixth and early seventh century was dominated by the spread of Christianity throughout the Saxon world. The conversion from paganism was affected by the kings who were in some ways politically motivated to change their faith. What it brought to Norfolk was the early Saxon churches, Christian graveyards and Christian centres of pilgrimage, but above all, with Christianity came writing which led to the setting down of documentary records of contemporary events.

Part of the lecture was devoted to the methods utilised for detecting newly discovered Anglo Saxon settlements and recording the abundant surface remains such as pottery, **brooches**, **pins**, bone combs and even daub from buildings. Of course, hitherto unknown cemeteries are still being found, both Pagan and Christian. The Pagan burials, because of **their** funeral goods, have obviously items for further research into the lifestyle of the period which is being researched by Andrew Rogerson in conjunction with Mary Chester-Kadwell of Cambridge University.

### **Baghdad Museum**

John Curtis Dept. of the Ancient Near East British Museum

Monday 17 January 2005

Notes taken by Gill Shrimpton

Dr Curtis, Head of the Dept of the Ancient Near East at the British Museum, has worked as an archaeologist in Iraq for many years and has visited the area three times since the end of the Iraq war in April 2003.

He visited the Baghdad Museum a week after the end of hostilities at the invitation of the of the Iraqi authorities, to try to assess the scale of the problem. It was apparent to Dr Curtis at his initial visit that the museum staff were not implicated in any way in what occurred during the first four days, when the looting and damage took place and when there was no military protection for the building. Museum staff had moved many of the

exhibits to a secure and secret location prior to the bombing. It was not possible to move every thing and of the items left at least forty important objects were taken (some have since been returned); they include 8<sup>th</sup> century BC objects from Nimrud and Ur and also from the Islamic period. Four large storerooms were looted and over 16,000 items are thought to have been taken. It is, however, difficult to estimate the true scale, as records were not accurate or up to date. At least half the items have been retrieved, some handed in by local people and some discovered at various airports around the world.

During these four days a great deal of wanton damage took place. Important Roman and other statues were deliberately smashed and all the offices broken into and papers burnt.

In June 2003 Dr Curtis lead a team from the British Museum to assist the Iraqi Ministry of Culture. He found that the museum at Mosul had been looted and devastated at the same time as Baghdad; the protective covering to the royal palace at Nineveh had been stolen and the site left in a perilous state; only three military vehicles guarded the site at Nimrud; many sites in the south of the country were affected by illegal digging. In Babylon there was very little damage and the museum had been successfully bricked up. Precious gold and ivory from Nimrud, which had been stored prior to the war in a strongroom at the National Bank, was flooded due to bomb damage. This has since been cleaned and restored but there is irreversible damage to the ivories.

By this time the staff at the museums had begun to start work on restoration, some statues have been repaired. An international team has been set up and some Iraqi conservators came to the British Museum for training. However, the security situation is now so bad that work has stopped altogether and staff are not even able to get to work

He then spoke of his very recent visit to Babylon where much damage to the world famous archaeological site has taken place. He noted damage to the dragons on the Ishtar Gate; piles of broken bricks inscribed "Nebuchadnezzar" the surface of the ancient processional route crushed by military vehicles. In addition trenches have been dug into the Ziggurat (Tower of Babel?) and thousands of tons of archaeological material used to fill sandbags. More seriously, oil has leaked into ancient unexcavated levels, and the whole area contaminated by covering the site with sand and gravel from elsewhere. All this has happened since the end of the war while the site has been used as a military camp.

The British Museum will send a team to Iraq when it is safe to do so and will provide training for International and Iraqi conservators.

Dr Curtis concluded by paying tribute to Donni George and his team at the Baghdad Museum in their very difficult situation. He hoped that Babylon in particular should be established as a World Heritage Site and that an international team would soon be able to begin work in restoring order to a disastrous situation.

### **Update on Hylands House**

Nick Wickenden, Museums Manager, Chelmsford Borough Council

31<sup>st</sup> January 2005

Notes taken by Dorothy Townend

Hylands House was built in 1728 for Sir John Comyns, a judge from Maldon. An early engraving shows a red brick Queen Anne style house with white stone features at the corners. It had iron railings surrounding the front of the house and a central drive. The Comyns family owned the house for three generations until 1797. Cornelius Kortwright then bought it and brought in Humphrey Repton to modernize it and to design an extension with bay windows and colonnade. The next owner, Whitmore, had the house painted white, and had the approach road changed from a formal central road into a sweeping drive. A map of 1815 shows changes to the position of the public road and an east wing with two bay windows.

The house was bought in 1815 by Pierre Labouchere who put in a kitchen garden, an exotic fruit garden, and built a conservatory. In 1839 it was sold for £50,000 to John Attwood an Ironworks owner and MP. He built a red brick wall around the estate and closed the public road. He bought up other properties he could see from the house and had them demolished. Attwood brought in John Papworth to redesign the East wing. The north wall of the West wing was demolished and a banqueting room added. A new storey was added over the whole house. The space between the house and the stable block was filled with new servant quarters. The house remained in this form until the 1920's.

In 1922 Christie Hanbury bought it, but by 1960 it was becoming unkempt. She died in 1962 and the house remained empty for the next four years. Fire broke out in the west wing in 1963 and it was damaged by water. The estate was purchased by the borough council in 1966 to make a 550 acre park for Chelmsford. In 1971 the servant quarters were demolished and in 1975 it was proposed that the house should also be demolished. It was saved by being given Grade 2\* status. By 1986 it was in a bad state, lead had been stolen from the roof and the marble fireplaces had been taken.

Between 1986-1987 work began on restoration, by removing Attwood's top storey and putting a new roof on. The wood which had dry and wet rot was removed and the mahogany doors shutters and panels were salvaged. In 1995 work started to restore the interior, beginning with the entrance hall. In 1998 work began to restore the drawing room and in 1999 it was opened to the public.

In 2002 restoration of the west wing began. The banqueting room, a small bay windowed room, a pine panelled study and the basement were refurbished.

The pine panelled study still had its original back wall so Tiptree Joinery were able to make up the rest of the walls to match.

The small bay windowed room was restored with an Adam style fireplace, parquet flooring, the original colour on the walls, and small motifs copied from an original fragment. The banqueting room was restored using a photograph taken in the 1920's-30's as a guide.

Work was carried out in the basement to protect it from damp. The basement has a vaulted ceiling and one of the original windows now looks out into the trench. Two circular Georgian windows were uncovered along with an arch and a bread oven, complete with flue and fire pit. Repton had had this bricked up and the vaulting introduced in the late 1790's.

The ground floor has now been completed except for the grand staircase. Three million pounds of Lottery money has been given to fund work on the staircase, Repton's landscape, and the stable block. A flint cottage, barn and brick wall are also to be restored. The stable block is to become a visitor centre. As part of the restoration of Repton's landscape the old approach road is to be reinstated to create vistas of the long serpentine lake.

Future restoration is to include the pleasure gardens, the walled kitchen garden, the ice house and possibly Labouchere's conservatory.

### **Ancient Merv: Archaeology and Education at Turkmenistan's Silk Road City**

Mike Corbishley, Institute of Archaeology, London

7<sup>th</sup> February 2005

Notes taken by Lilian Morrow

Turkmenistan, is bordered on the west by the Caspian Sea, on the south by Iran and Afghanistan and on the east and north by Uzbekistan. It is largely desert but watered in the south by rivers from the mountains of Iran and Afghanistan. In this fertile oasis, on the river Murghab, lie the ruins of the ancient city of Merv, at a central communication point astride one of the Silk Roads from China.

The occupation sequence runs from the Bronze Age, early second millennium BC, the Iron Age, first millennium BC in the north, to the late eighteenth century AD in the south. Because each period of development was laid out on adjacent sites the historical periods are undisturbed and remarkably well preserved

In the 6th century BC, Cyrus the Great of Persia built an administrative centre, Erk Kala, covering some twelve hectares. Huge mud brick walls surrounded palaces, temple, houses and an army barracks. Late 4th century BC Alexander the Great's army defeated Darius' Persian army, making Merv part of the Seleucid Empire. A Greek city was laid out in a rectangular grid under Antiochus I, named Antiochia Margiana, known today as Gyaaur Kala. Cyrus' centre was incorporated into the city and became a citadel. Marcus Crassius, with his Roman army, tried to take Merv but was defeated by the Parthians and only 10,000 Romans survived to return to Syria. In 220 AD the Parthians were replaced by the Sasanians from a small kingdom in Iran who ruled for the next 400 years. Under their rule Gyaaur Kala became one of the great cities in Middle Asia.

In the 7th century AD a new walled Islamic city was built on the western side, named Sultan Kala, covering 600 hectares and becoming the capital of the eastern Seljuk Empire. The defences were very

strong, 9kms of walls with towers. The city was very beautiful with gardens, fine buildings, mosques, madrassah, library and numerous caravanserai. A palace and administrative buildings, enclosed by walls, was built in one corner of the city. Occupation was heavy and a suburb in grid plan extended outside the walls. In 1157AD Sultan Sanjan died and his mausoleum, beautifully decorated inside with a blue ceiling, was constructed. Four irrigation canals and underground water courses with wells and inspection pits were constructed. This city covered 1800 hectares with a population of 150,000. Craftsmen's estates, market, cemetery, housing and a new mosque were built. The wall was surrounded by a deep moat 22 metres wide with two hundred semicircular towers 4 metres in diameter and two-storied vaulted rooms for infantrymen. In 1221AD Mongols sacked the city and 1.4 million were reported killed.

In the 15th century the old city was abandoned it had become too unhygienic and a third city, Abdhulla Khan Kala, was built to the south, covering 46 hectares, square shaped, with a citadel containing the ruler's palace and caravanserai built in one corner. Land routes had been superseded by sea routes and overland trade decreased.

The archaeology is overwhelming with heaps of pottery etc covering 1000 years of occupation. Mapping of the city started 3-4 years ago but it is an immense task as the excavations done in the past were not written up. There is a new museum in Ashkhabad the capital where a huge head of Buddha, a beautiful vase and other artefacts are housed. Interpretation boards in Turkman and English have been erected on site. There is huge public interest and the task has been to educate the teachers about their heritage in order to make school visits more meaningful. Visas are difficult to obtain, the British Ambassador covers for the UCL archaeologists and a few get in each year but cannot excavate - just survey and conserve.

In 1990 Merv was designated a State Archaeological Park and in 1999 listed as a World Heritage Site but in 2000 sadly marked a most endangered area.

A report on Merv can be read in Current World Archaeology, Number 3, January/February 2004

### **Prehistory in Europe**

Jill Cook, Department of Prehistory and Europe, British Museum

14<sup>th</sup> February 2005

Notes by Denise Hardy

In the 1850s a skull fragment was found in a quarry in Dusseldorf, Germany. It was lacking a forehead but had heavy brow ridges. Until then the understanding of human evolution was very limited; further finds from Germany made Palaeolithic archaeologists think that human evolution was like a simple ladder, primitive beings at the bottom with Neanderthals half way up - progressing through time until the human race arrived at a more 'modern' look. However, later investigations proved that early humans migrated out of Africa and slowly adapted to the extreme environmental conditions. These first humans were short, with stocky limbs and heavy jaws. In Europe, Neanderthals migrated back down to Africa and those from the colder climes of western Asia overlapped 'modern humans' eventually becoming extinct.

Neanderthals were thought of having little memory, intelligence and common sense, and up until the 20th century were characterised as being 'hairy, overwhelming beasts'. Burials recognised previously as being akin to these creatures were now being doubted due to bones excavated at a site in La Chappelle during the 1920s-40s. Some of these were found to be bowed, causing the Neanderthals to have a bent stance but archaeologists failed to recognise that this was caused by severe osteoarthritis which was only diagnosed in the late 1960s/70s. This led to a change in looking at the make up of Neanderthals, with the conclusion that instead of a bent posture, it was actually straight, with short stocky limbs, different skull, brow ridges, chin and no forehead.

In La Perouse, a Neanderthal burial was found of a family, foetal to early teens, apparently all having died at once. Here they appeared to have cared for their dead, proving evidence of social graces previously thought impossible.

Jill went on to discuss how skeletal bones suffer many changes at death, deliberate or natural. Bone structure can be altered by disease, by burning, fracturing, burial decaying, animal gnawing, scratches, knocks, scrapes and human butchery; other alterations can be found from displacement via transportation from animal, water and mud flows.



At Gough's caves in Somerset, Neanderthal remains were excavated in 1904 and cut marks found on the fossilised bones were indicative of cannibalism. New excavations in the 1980s revealed more human fossils and with the aid of an electron microscopic scan we could clearly see half a mandible with precise cut marks both inside and outside the jaw. Two other jaws also revealed asymmetrical cut marks revealing that the tongue and the muscles surrounding it were cut from the base of the skull at the time of death. It was thought that by removing the tongue it would give a better access to the base of the skull to retrieve the brain. The electron microscope also revealed clear cut marks in the neck vertebrae to detach the head. The ribs also had cut marks and many people conclude that cannibalism had taken place. However, from the forensic point of view, scalping doesn't necessarily leave cut marks on the skull and the defleshing marks on these bones are not necessarily indicative of cannibalism. One suggestion is that defleshing was for something more abstract than for nutritional needs. There was evidence that Neanderthals cared for one another, as one had received a blow to the head which had begun to heal; another had a badly broken arm and could not have hunted, therefore food must have been shared among them.

### **The Origins of Ipswich**

Dr Steven Plunkett, former Keeper of Archaeology at Ipswich Museum

22nd February 2005

Notes taken by Pat Brown

Steven Plunkett took us on a tour of Anglian Ipswich, vividly illustrated by slides of present-day Ipswich, both on the ground and from the air, which brought home to us what a large area was covered by this, the first truly English town.

The earliest settlement was on the north bank of the Orwell, though over the centuries the waterfront has been extended out into the river. Major north-south roads were cut by east-west roads, including, to the north, an ancient corduroy trackway; when the Buttermarket site was excavated the cemetery of the early town was revealed. This era of the town coincided with the reign of Raedwald, king of the East Angles, almost certainly the king buried in Mound 1 at Sutton Hoo. He was also *bretwalda* (the chief Anglo-Saxon king at the time) and therefore it is no surprise that he might have been responsible for the development of this important trading centre, with links to the Rhineland and Northern Europe, as well as to London and Kent. These links are demonstrated by some of the pottery found, as well as grave goods in the Handford Road cemetery.

In the 700s the Buttermarket cemetery was covered by an area of street grid: churches such as St. Peter's were also founded, and where the Town Hall now stands a church dedicated to an abbess with connections to the East Anglian royal family, St Mildred, was built. Coins, including some of the previously unknown King Beonna, showed considerable commercial activity.

Later excavations in the area of the Novotel uncovered an Anglian street surface, cellared buildings, and evidence of metalworking and other industrial activity. The town extended beyond the later, Viking-age rampart. In the Cox Lane area potters were producing Ipswich ware, the first native wheel-thrown pottery in England, which had a wide distribution in East Anglia and beyond. It was followed by the superior Thetford ware, manufactured in Ipswich as well as other places.

North of the ramparts, near St. Margaret's church, lay an area known as Thingstead, or meeting place (from the Norse "thing"): here proclamations may have been made and councils of the inhabitants held. Steven Plunkett ended by recommending us to follow the Ipswich Anglo-Saxon Town Trail, and trace the lines of the Anglian town in today's street system.

### **One Year of the Essex Finds Liaison Scheme**

Caroline MacDonald, Essex Finds Liaison Officer

28<sup>th</sup> February 2005

Notes taken by Anna Moore

The Portable Antiquities Scheme, of which the Essex Finds Liaison Scheme is a part, was initially funded by the Heritage Lottery Fund until 2006, but has now attracted government funding until 2009.

Treasure Trove was defined as any gold or silver item buried with the intention of retrieval. This was replaced in 1996 by the Treasure Act, which defines treasure as:

(a) any object at least 300 years old when found which -

- (i) is not a coin but has metallic content of which at least 10 per cent by weight is precious metal;
- (ii) when found, is one of at least two coins in the same find which are at least 300 years old at that time and have that percentage of precious metal;
- (iii) when found, is one of at least ten coins in the same find which are at least 300 years old at that time.

There are loopholes in the Act, illustrated by the case of a 2<sup>nd</sup> century Roman bowl, on which part of the decoration named four of the forts on Hadrian's Wall. This would not qualify as treasure as it is made of base metal, but was reported by a metal detectorist finder through the Portable Antiquities Scheme. Items which are not classified as treasure are the legal property of the finder.

Part of Caroline's duties as Finds Liaison Officer is to meet with metal detectorist clubs, Young Archaeologists Clubs, schools and members of the public and, through these meetings, many finds are recorded. She also attends metal detectors rallies, during which a farmer opens a field to metal detectorists for a day, and she tries to encourage them to declare finds. Caroline has become a 'tip-off' point for illicit metal detector activities.

All finds are recorded on a website, on a national database which is updated daily and is available as a reference point for anyone to use.

In Essex, of all the finds recorded, about 35% are coins, a proportion which is roughly in line with the rest of England. About 50% of finds are Roman, also in line with the rest of England. Although most finds are metal, many non-metal finds are brought in by metal detectorists.

Caroline showed slides of some of the finds recorded in Essex, the oldest being a paleolithic hand-axe from Mersea about 400,000 years old, and the most recent a large amount of post-medieval coinage.

The cut-off date for recording is 1650, although occasionally a later item may be included, e.g. a commonwealth coin which had been pierced for wearing on a chain.

Caroline also arranges for the processing of treasure items. These have included:

- A 15th century pilgrim badge of St George.
- A Bronze Age gold and silver pennanular ring, possibly with a base metal interior; currently with the British Museum for analysis
- A gold cap from a 7th century wooden sword-pommel
- A 15th century silver ring decorated with an image of St Anthony of Egypt, possibly worn as a protection against St Anthony's Fire
- A headdress pin from Holland, carved with the initials AL
- A post-medieval button decorated with a crown and two hearts, possibly commemorating a royal marriage

### **Royal Burial at Prittlewell**

Ken Crowe, Keeper of Human History at Southend Museum

7<sup>th</sup> March 2005

Notes taken by Jean Roberts

Probably the most important discovery of the Anglo-Saxon Period to be made in this century was made at Prittlewell, Southend, in October 2003.

A cemetery, containing 2 Roman and 20 Saxon burials had been found in the area in 1923, the burials dating from the late 5th to the 7th century. In 1930 during work on the embankment of the nearby railway line, more graves had been found. In these were rich grave goods, such as Frankish pots, a garnet brooch, a gold pendant, saucer brooches and beads.

In advance of a road-widening scheme, an evaluation was carried out by The Museum of London Archaeological Service. In their evaluation trench they saw the side of what looked like a bowl hanging on a wall, which turned out to be a Coptic flagon, unique in England and very rare anywhere else. It was in virtually perfect condition, with 3 roundels showing a man on a horse with what looked like a halo around his head. Subsequent excavations uncovered a rectangular burial chamber surrounded by walls of wood, on which were hanging several artefacts. On the floor of the chamber were more grave goods accompanying a wooden coffin, which would have contained the body of the obviously important person buried here. The chamber would have been roofed over with planks.

The goods included pairs of glass vessels, one pair of green glass and one of blue, buckets, drinking vessels, drinking horns and an iron-hooped cask. It is thought that blocks of the coloured glass were imported and the vessels then made in this country. The drinking vessels were similar to those found at Sutton Hoo, consisting of wooden bowls with gilded copper collars. The drinking horns were made from horn brought from Scandinavia.

Other discoveries were made over the next few weeks, including a folding stool, also unique in England, and a lyre, the most complete one found in this country, showing a repair on the back. Shoe buckles, a shield boss, a cauldron and gold threads that are thought to be part of a woven collar, together with many other artefacts were also carefully dug out.

Although no body was found, there were fittings for a coffin and objects were found in place where a body would have been expected to be lying. The ground is very acidic here and a body would have quickly disintegrated.

Was this a Christian or Pagan burial? Several symbols were found that could point to a Christian one. An unfinished, hollow buckle was in the grave; not functional and similar to two others found at Sutton Hoo and Taplow. Suggestions are that these might be reliquaries. Two thin foil gold crosses were in the grave and it has been speculated that these covered the eyes of the deceased. The roundels on the Coptic bowl showing haloes could point to Christianity, as could a spoon with what looks like a cross scratched on it. The reason all these objects and others beside them have been preserved so well, is thought to be because sand seeped into the roofed tomb and supported them in the original places, some still hanging on the sides of the walls.

Such a find created International interest and the Exhibition of 13 objects at Southend Museum, in February-March 2004, was seen by 30,000 people.

There is on-going debate as to who this person was, buried in such splendour and until there is more definite dating evidence the question will remain unanswered. It is hoped that a new museum to house these treasures can be built at Southend, but that is in the future. Meanwhile the objects are undergoing conservation and being studied in the hope that they can yield more information about the Anglo-Saxon settlement in Essex.

## Report on the Summer Programme 2005

Gill Shrimpton

We enjoyed a varied programme of outings this year.

Monday evening on the 25 April about 40 members met at Mistley Towers for a stroll around Manningtree and Mistley. Mark Davies was our guide and gave us an interesting insight into the people and buildings which have their place in the history of this small Essex town.

On Monday 9 May a large group of members met at the Abbey Mill in Coggeshall where we were met by the owner, Mr. Ward who gave us a guided tour of this lovely old mill in its beautiful setting. Richard Shackle took us to look at St Nicholas Chapel nearby which was once part of the Abbey. We finished the evening at The Woolpack where Richard explained some of the interesting timber-framing and some members enjoyed the comforts of this ancient hostelry from the inside!

On Saturday 18 June 30 of us left Colchester and travelled by coach to Chatham Historic Dockyard. We were met by a very informative guide (in period costume) who gave an extensive tour of this site. There are many displays and exhibitions showing the history of shipbuilding and the lives of the people involved. We were also able to go on board several of the Royal Navy ships berthed there – including the submarine HMS Ocelot.

This year's Summer Party was held in the beautiful surroundings of Upp Hall, Great Tey, by the kind invitation of John and Cathy Rayner. We were lucky in having a lovely sunny evening, which we were able to enjoy outside, and then had the luxury of being able to retreat indoors as the temperature dropped. We extend our grateful thanks to our hosts.

## South Coast, Friday 20<sup>th</sup> May – Monday 23<sup>rd</sup> May 2005

Notes by John Mallinson

Led by Mark Davies, and organised, as impeccably as ever<sup>1</sup>, by Anna Moore, this year's jaunt was based in Chichester. 41? <sup>2</sup> souls braved the rigours of the south coast and were rewarded with a varied and interesting weekend of visits to sites of historical and archaeological importance.

The first stop was at the **Bignor Roman Villa**. On a sloping site overlooking the river and close to the line of Stane Street, the villa would have been an impressive site in its 4<sup>th</sup> century heyday. Discovered in 1811, and more or less fully excavated shortly after, the general layout of the villa can be easily appreciated on the ground. The most impressive remains are the surviving mosaics – probably some of the best preserved mosaics in England. Particularly impressive were those of Ganymede and the Eagle, and Venus and the Gladiators. The site is privately owned, and suffers from lack of proper funding. A particular problem is that the buildings erected in the 19<sup>th</sup> century to protect the mosaics are far from ideal, and in some disrepair, but are difficult to replace since they are themselves now listed!

In the afternoon the party visited the **Weald and Downland Museum**. Opened in 1967, the museum seeks to rescue vernacular buildings from the surrounding area that would otherwise be destroyed, to re-erect them at the museum, and to restore them to their original state as authentically as possible. Over 40 buildings are now on display, ranging from a medieval hall to Victorian farm workers cottages, and from a working watermill to a charcoal burners camp, with every type of agricultural and industrial craft building in between. Most buildings are furnished, and provided with an interpretative commentary (or a real live yokel), enabling the visitor to get a real feel of how life might have been for the original inhabitants. Most interesting of all, however, for this note-taker at least, was the Gridshell building, a new and entirely novel structure, based on a framework of interlaced oak laths. It is two floors high, the upper being used as a workshop by the museum carpenters, whilst the lower houses a vast collection of hand craft tools.

On Friday night the hotel ran out of house red.

After a short stop at **Boxgrove Priory** to view the Priory remains and take a look inside the 12<sup>th</sup> century Priory Church<sup>3</sup>, Saturday morning was spent at **Butser Ancient Farm**. Our guide told us in carefully measured words the story of the creation of the Iron Age round houses and the farm, and the serious experimental archaeology that has been done over the years, which has enabled much to be learnt about Iron Age life and farming practices. Cosy is not a word usually used to describe a building that can easily hold 200 people, but once we had got used to the smoke<sup>4</sup>, it was easy to appreciate the practicality and effectiveness of the Great Round House,

particularly as it was cold, windy and intermittently chucking it down outside. Also on the site is a recreation of a Roman Villa. Built at the behest of a television series, the same level of care and attention to authentic detail has been brought to it as to the round houses, but it sits uneasily in an otherwise Iron Age landscape, and the result (to date – more work is yet to be done) is..... well, frankly, naff.

The party then split. The larger and saner half went to **Winchester**, and spent the afternoon exploring, at their choice, the Cathedral, the Great Hall, the Westgate Museum, the Old Bishop's Palace, St Cross Hospital, the inside of a pub with a large screen television<sup>5</sup>, or any other of the many sybaritic delights of an English city on a Saturday afternoon. The smaller and slightly dotty faction left the coach in a rainstorm to walk to **Old Winchester Hill**, there to inspect the Iron Age Hill fort on its summit. The rain soon stopped, we all dried out, the cloud lifted and we were rewarded with a thoroughly pleasant walk, excellent views, and a gourmet lunch eaten sitting on the side of one of a number of Bronze Age barrows within the fort which the Iron Age residents had thoughtfully left for our delectation. The fort is very well defined, and covers some 14 acres, with a single bank and ditch up to 23m high in places and entrances to the east and west. The barrows are of varying sizes, the largest seen being some 19m across, and still upstanding to a height of over 2m.

On Saturday evening the hotel ran out of any affordable sort of red.

Sunday was largely devoted to Portsmouth. For most of the group, this meant spending all day at **Portsmouth Historic Dockyard**. This has expanded greatly over the last decade, and a combined ticket gives entry to eight separate attractions, more than most of us were able to do justice to in the time available. The highlight was undoubtedly the Mary Rose and its associated museum. The ship still shimmers mistily and ghostly – more Flying Dutchman than warship – through its continuous spray of water and PEG. It will be 2011 before it is finally dried out and available for closer inspection. Until then one gets only an impression of great size, and in particular great height, and feel awe at the immense skill involved in raising and conserving it. The associated exhibition is magnificent. The quantity and quality of the artefacts, all beautifully conserved and displayed, give a very vivid impression, not only of life on a Tudor warship, but of life in general in Tudor England. The other attractions did not disappoint. HMS Victory, together with its museum and associated displays, remains immensely impressive. HMS Warrior, a more recent addition, is one of the first iron hulled warships. She was built in 1860, served for 23 years and never fired a shot in anger. After spending almost 90 years as a hulk, she was finally bought for restoration in 1979, and eventually returned to Portsmouth in 1987. At the end of the day, most of the party regrouped for a very breezy trip round the harbour to look at the naval ships and other attractions.

On the way home the coach stopped in **Portchester** to visit the **Saxon Shore Fort & Castle**. Here Mark proved particularly valuable in interpreting the construction of the Monuments, their relationship to each other and their history.

On Sunday night the hotel ran out of beer.

The following morning our driver was made to retake his driving test in a Cook's tour of the vicinity of **Bosham**, seeking to get tantalising views of the Anglo-Saxon church of Bayeux Tapestry fame. Then to **Fishbourne Roman Palace**, to see "the largest Roman building north of the alps". Grouped around a detailed model of the palace, we were given an excellent introduction to the palace by a member of the Sussex Archaeological Society, who administer the site. He described its discovery, its excavation under Barry Cunliffe, its current status, and its history from its construction early in the Roman occupation to its destruction by fire in the 3<sup>rd</sup> century. He also touched, tantalisingly, on recent excavation work, which he said, "might change our view on the invasion of Britain". About half the palace and garden is available to view (the rest is under houses), and it is possible to get a very good idea of its vast size. The mosaics are justly famous, though it would be both churlish and unpatriotic to suggest that in their current state they do not bear comparison to (say) those in Merida.

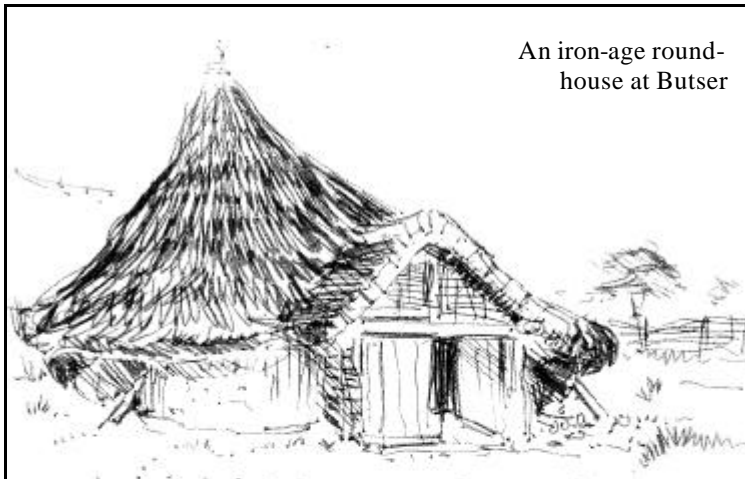
So onward for a quick trundle in **Arundel** (nice little local museum), and (always a sting in the tail from Anna), a whistle stop tour of **Lancing College Chapel**. Founded in 1868, this is the biggest school chapel in England, and is a classic example of Victorian Gothic. It was interesting to compare it with the examples of Roman architecture we had seen earlier in the weekend, and to reflect on how the attitudes of the Romans and the Victorians were reflected in the similar monumentality of much of their architecture.

And so to Colchester. It is a good thing we did not stop another night in Chichester. Heaven knows what we would have been drinking.<sup>6</sup>

**Notes<sup>7</sup>**

1. No, that last bit was not added by the editor of this bulletin.
2. Pat Brown joined us on Sunday evening.
3. A little gem, as they say, and much more photogenic than the Man who has made Boxgrove famous.
4. One never imagined that one could empathise with a kipper.
5. It was cup final afternoon.
6. None of these remarks are intended to imply that in any other respect the hotel was other than first class.  
The breakfasts in particular were excellent. Though if any one had had the temerity to ask for a Bloody Mary, they would probably have been told that there was no Worcestershire sauce.
7. No article in a reputable archaeological journal could consider itself complete without notes.

For more images from the South Coast trip, see Appendix 1.



An iron-age round-  
house at Butser

Two images from the South Coast trip by a  
member of the group, Dil Yardley



*There's a hillfort here somewhere!*

*I would like to point out, in case the above article gives completely the wrong impression, that vast amounts of alcohol are generally not consumed during our weekend trips, but that the hotel bar was particularly poorly stocked. - Anna*

## Obituaries

Brian Anthony Bonner 1918-2005

Our oldest member, Tony , never Brian to us, joined in 1968 and was an assiduous supporter of our activities. We were delighted to see him enjoying himself at the Summer Party at Upp Hall Farm this year in spite of the infirmity of his years.

He was born of Essex farming stock, both his grandfather and father having farms in the Kelvedon area. On leaving Colchester Royal Grammar School, he started farming with his father, but was called up to serve in the RAF in 1939. His sight not being good enough for aircrew, he elected to become a transport driver, in the hope of travel. In May 1940 he went to France and came back in June in some hurry, as related in his entertaining book of reminiscences 'Harvest of Memories'.

He was next posted overseas to the Middle East in 1942, where he followed the Allied campaign to Tunisia, visiting Leptis Magna on the way, where perhaps his interest in archaeology was kindled and later fostered by his service in Italy and Yugoslavia.

On demobilisation he returned to the family farm and married Jean in 1949. He and his brother Derek set up a seed growing business at Theshelfords Farm, Feering , later venturing into fruit for pick-your-own and for canning.

Tony's active interest in archaeology started in the 1950s, when at a party – where else? – he was told of an opportunity as a photographer to join a rescue excavation in the Sudan on a site to be flooded by the Aswan dam. Other overseas excavations followed, some in the North African desert, the area he most favoured during his wartime service.

He decided to take archaeology more seriously and joined the Group in 1968. He attended some overseas conferences as well as Group lectures, outings and parties. He assisted in the projection at lectures and, with Bill McMaster, gave a lecture himself in 1974. He published a note on 'A Hand Axe from Feering' in Annual Bulletin 24 and gave another lecture on his desert excavation experiences in 1985.

On retirement in 1987, he and Jean moved to Coggeshall where they were party hosts to the Group.

You may have gained the impression that he enjoyed company. Indeed he did. He was an enthusiastic conversationalist and not infrequently expressed trenchant views, always with a sense of fun. We express our sympathy with Sarah and John and the family. We too shall miss him.

Tony Bonner, holding a mammoth tooth found at Marks Tey





**Peter Cott 1928 - 2005**

Arguably, Peter was responsible for introducing geophysics into Colchester's archaeology.

A graduate in electronic engineering, Peter had a distinguished professional career in satellite communications, first with Marconi and then Cable and Wireless. Many countries' satellite systems have a large input from Peter, as does the Mercury network, the main rival to BT, for which he was Chief Engineer. Normally reticent to talk about his achievements, he was quietly proud of masterminding the use of a satellite, an insurance recovery by space shuttle from an incorrect orbit, refurbished and relaunched to provide Asia-wide coverage as China's first communications satellite. He and his wife Jean were present in China at the launch.

On retirement Peter was able to indulge in his long-standing interests in music and in history, particularly Roman history. Not surprisingly, given his background, geophysics especially interested him and he soon obtained an M.Phil. from Bradford University for his investigation into how the resistance image of the Venta Icenorum site changed over the seasons, depending on soil conditions. During this work he discovered a previously unknown Roman Amphitheatre.

Peter worked on many sites in East Anglia, from East Lexham in Norfolk to Pleshey in Essex, where his resistance survey revealed the site of Pleshey's first church. Sadly, his wish to find a Roman villa was never granted.

In Colchester, Peter advised on the purchase of a magnetometer and worked extensively with it on the Gosbecks site from 1993 and on the Fort site in 1995. In the early days before automatic data logging Jean spent many hours on site recording readings as Peter called them out. His work on the Fort site, which he did alone, represents many hours of dedicated effort. The raw data are still valuable, and, in comparison with surveys done nine years later, show a remarkable degree of consistency. Peter was ever an enthusiast, determined to finish what he started.

Those of us who worked and learnt from Peter owe him a debt of gratitude for introducing us to a subject that provides an endless source of interest. He will be greatly missed..

Aline Black and Tim Dennis

Appendix 1: Images from the South Coast trip.

1. Bignor Roman Villa



The Weald & Downland Museum, Singleton



Interior of the Gridshell building

Buildings in The Market Place



Interior of a hall-house



The group admiring  
Boxgrove Priory



Butser Iron-age site



The 'Roman' villa

Re-created  
Iron-age round-  
houses





The Mary Rose, Portsmouth

HMS Victory, Portsmouth







Portsmouth from the tower of Portchester Castle, showing the wall of the Saxon Shore fort with the medieval church in the corner

The interior of Lancing College Chapel

