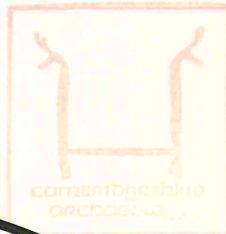
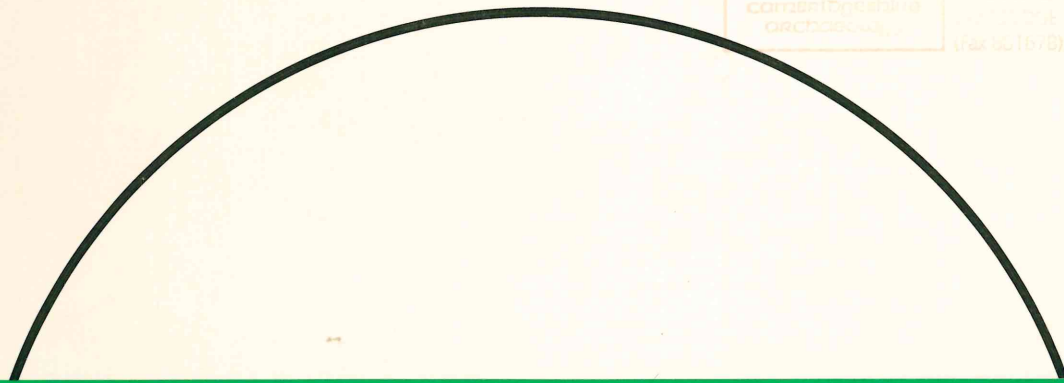


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AFU REPORT  
NO. 72



# A ROMAN LEAD COFFIN WITH PIPECLAY FIGURINES FROM ARRINGTON



 Cambridgeshire  
County Council

# A ROMAN LEAD COFFIN WITH PIPECLAY FIGURINES FROM ARRINGTON

## Interim Report

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1992

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*Report no. 72*

*One of the two rams found with the Roman coffin*



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1993

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### **Interim Report**

The final report, including analysis of the woollen textile by M. L. Ryder, and appendices, photographs of the head and hair details, and gazeteers of Roman lead coffins and Roman burials in Cambridgeshire, will be published in **Britannia 1993**.

# A ROMAN LEAD COFFIN WITH PIPECLAY FIGURINES FROM ARRINGTON, CAMBRIDGESHIRE

TL32695049

## Summary

*A lead-lined wooden coffin containing a baby which had suffered from hydro-cephalus was discovered during construction work near Ermine Street. Lying on top of this coffin was a box containing pipeclay figurines including one Germanic mother-goddess, two rams plus fragments of two others, one bullock, one seated male "thorn-puller", two busts of children, one male eastern god and several broken pieces. Fragments of woollen textile and numerous pieces of aromatic resin were found inside the coffin. No other structures or burials were noted. The statuettes are dated to circa 130–160 AD.*

## Introduction

In November 1990 a new sewage pipe was being laid at Wraggs Farm, Arrington, when a JCB bucket struck the coffin (Fig. 1). The Archaeology Section of Cambridgeshire County Council was alerted immediately and, after a visit to the site to assess the problem, the burial was excavated on the following day under the difficult conditions imposed by a deep narrow construction trench (Fig. 2). Excavation was made more awkward by the need to remove heavy lead in reasonable condition from very sticky and intransigent clay in a confined space. Surviving bones were extremely fragile and fragmentary, which also posed problems. The figurine fragments had already been collected by workmen and soil containing them had been removed, so no more could be found.

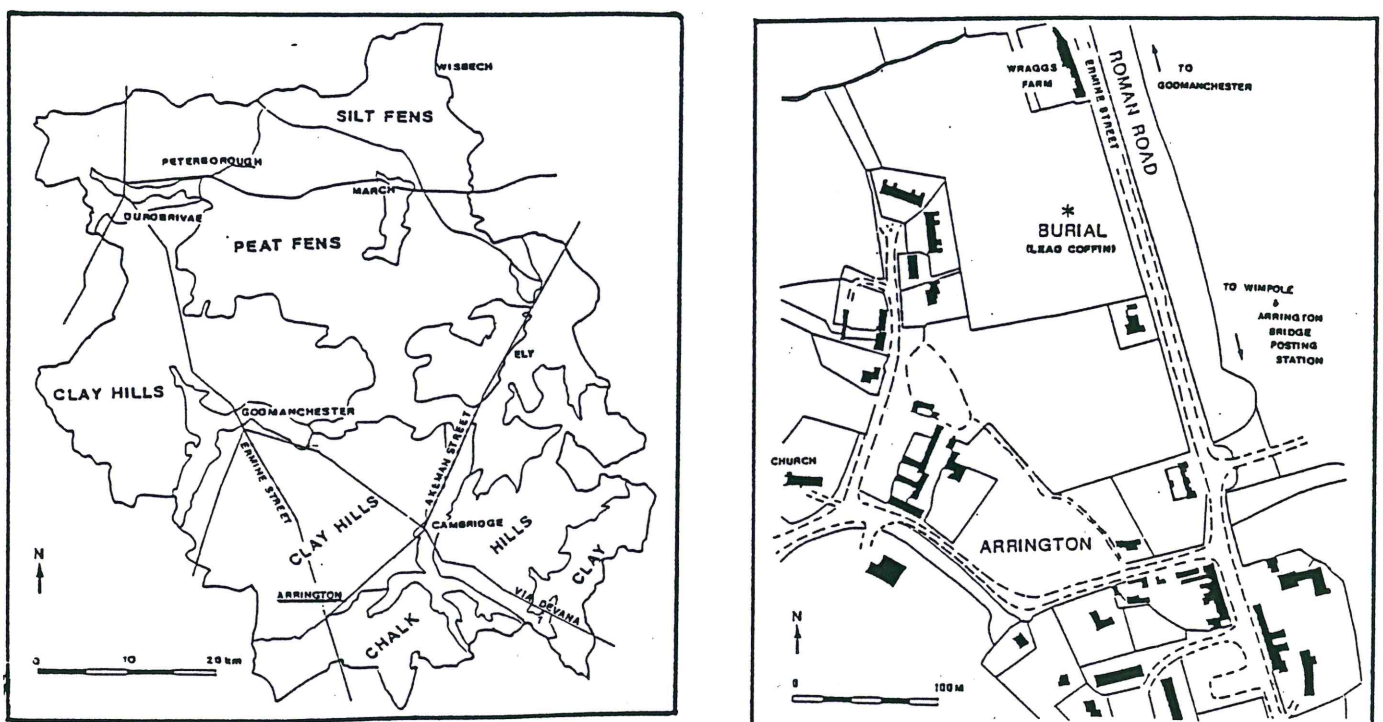


Figure 1. Location maps

## Setting

The burial was located in a pasture field containing medieval settlement earthworks, 38 m west of the A1198, which overlies or follows closely the route of Roman Ermine Street. Two kilometres south of the burial lies the Roman posting station of Arrington Bridge and an adjacent settlement at Wimpole, excavated by Cambridgeshire County Council in 1988<sup>1</sup>. Close by is the junction of a Roman road leading north-east to Cambridge and a likely but unverified Roman road leading south-west to Sandy, both of these being Roman towns. The underlying geology is gault clay, though it is very close to Lower Chalk, noticeable as flecks of chalk in the gault. The nearest river is the Cam, two kilometres to the south. It is a small stream at this point and is unlikely to have been navigable. Lead was therefore probably transported to the site by road rather than water.

## Description

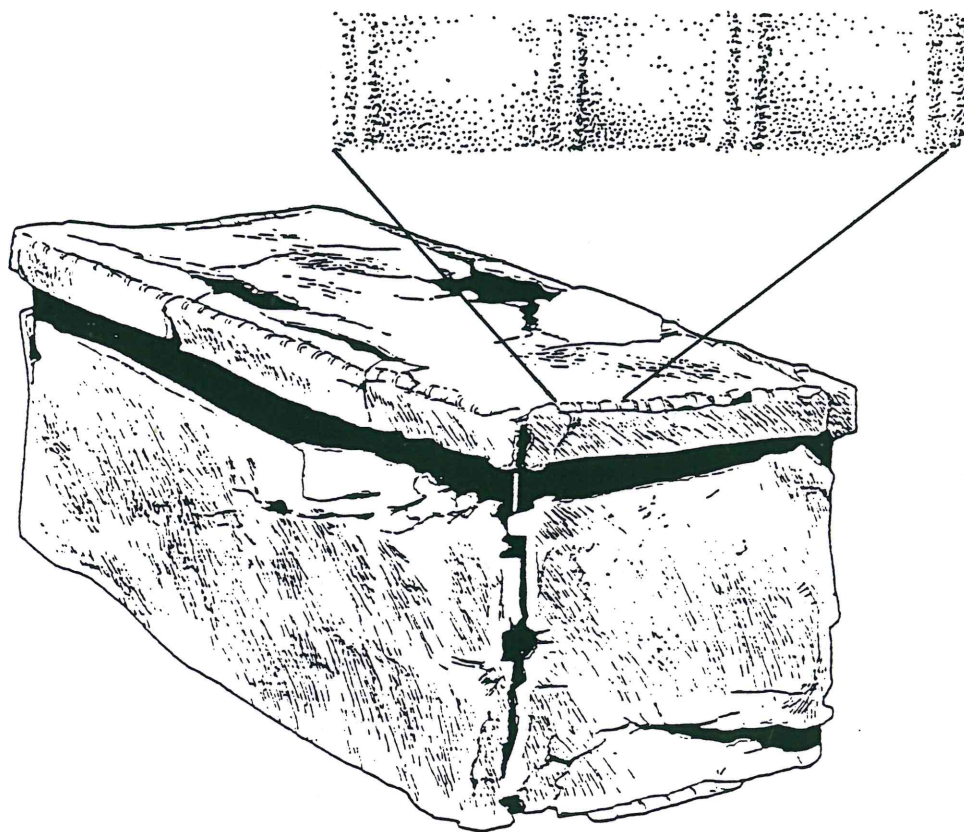
The coffin was laid due west-east and was buried 250 cm deep (base of coffin). There was no sign of a grave cut, although the sewage trench gave a clean, straight section where such a cut could have been visible, and no other structures or features were found either during this excavation or the rest of the trench construction. Substantial but very soft rotted wood survived on the outside and underside of the coffin and there were slight traces on the lid in spite of displacement by a JCB bucket. The wood has been identified as oak<sup>2</sup>.



Figure 2. Photograph of excavation

The lead lining itself (Fig. 3) was 102 cm in length, 35 cm high and tapered in width slightly from 38 cm at its head to 33 cm at its foot. It appears to have been made from one piece of lead<sup>3</sup>. During conservation, droplets of solder were found by the conservator, Mr. Pat Smith of Cambridge University Museum of Archaeology and Anthropology, but the joins were so poor that some fell apart during lifting; even when joins stayed together, daylight was visible through the gaps. There was a pattern of cord and double bars all around the lid and around one long and both short sides of the base. Otherwise, it was quite plain. There were no nails or nail-holes. The flanged lid had simply been laid on top without fixing, despite which it fitted tightly, keeping soil from the body until its discovery.

At the base of the coffin, most thickly at the head end, was a layer of whitish substance that looked like lime but was identified as lead carbonate derived from the coffin by Kathryn Tubb of the London Institute of Archaeology Conservation Laboratory. Practically all the bone except the skull had been destroyed, but unusual conditions within the coffin led to preservation of textile fragments and some of the child's hair. Near the head there were also numerous pieces of aromatic resin, still smelling distinctly of incense, possibly myrrh. The cloth and resin were both discovered in laboratory conditions and could otherwise have been missed during rescue excavation.



After reconstruction

## Grave-goods

There were no grave goods in the coffin, but the JCB driver, Michael Banham, described how, when his bucket hit the coffin, there was a mass of "brown peaty" material on top of its foot from which the figurines fell, and we assume this was a wooden box although no trace remained when we reached the site. This box is assumed to have contained all of the figurines described below, as they were collected by workmen from one spit and no more were found during further excavations.

## The Pipeclay figurines

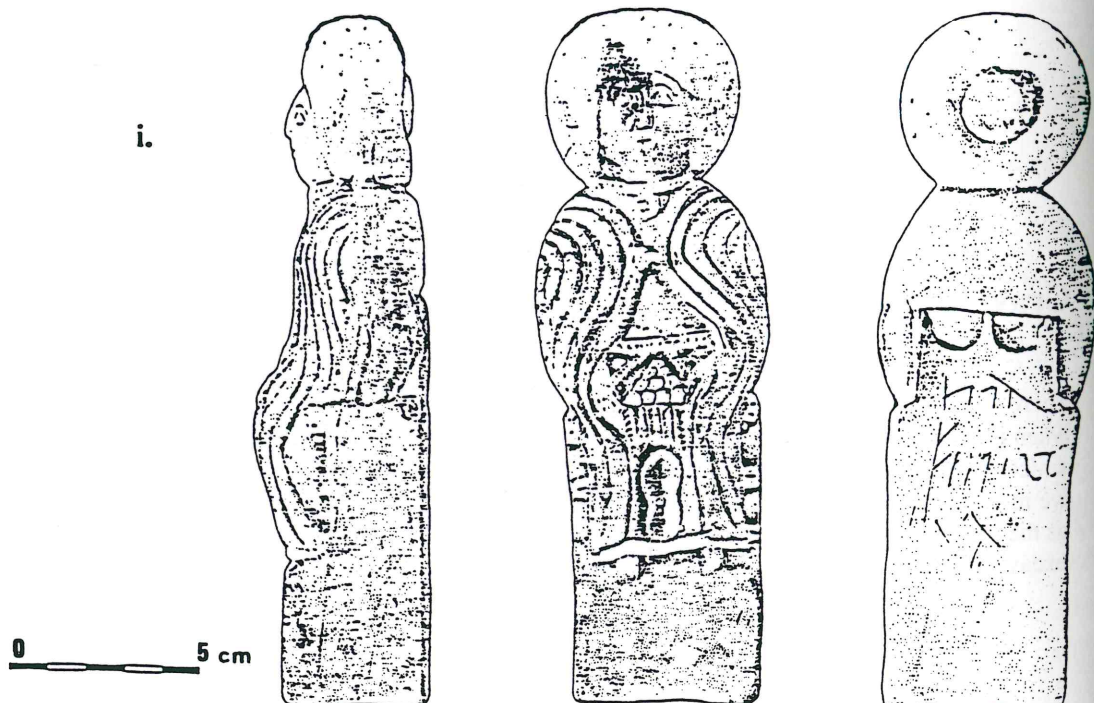
Miranda Green

The placing of pipeclay figures in a child's grave is not unknown elsewhere in Roman Britain. A well-documented example is at Colchester, Essex, a grave which may be as early as the 1st century AD<sup>4</sup>. The figures there include human figures taking part in a banquet, a representation of Hercules and that of a young boy, perhaps the dead child. Animal statues at Colchester include those of a seated dog, a dove and a triple-horned bull. A more recent discovery comes from London and consists of a child interred in a lead coffin, accompanied by three clay figurines of Venus<sup>5</sup>. The figurine from Arrington can be dated, by parallels from signed figures from Gaulish and Rhenish factories, to circa 130-160 AD.

i) The "Mother Goddess" consists of the representation of a draped female figure, seated in an upright chair. She has sketchy facial features, but wears an elaborate "bee-hive" coiffure or headdress. The goddess wears a long cloak which falls in folds, fastened at the breast by a large clasp or brooch; the garment then divides to reveal a girdle and, between the two strands falling below the waist, is a pyramid of ten circular fruits (apples or pomegranates). The fruits are steadied by the goddess' hands which rest on her knees. The cloak and under-robe fall to the feet, which are revealed resting on a step of the chair or throne. Round the goddess' neck is a necklet, treated in much the same manner as the girdle, a kind of plaited design; hanging from this neck-ornament is a broken crescent-shaped amulet or pendant. On the reverse of the figurine, is an indistinct inscription.

This figurine is of particular interest in that the distinctive large circular "bonnet" classifies it as belonging to a well-known group of mother-goddess statuettes, which occur almost invariably in the Rhineland. These were manufactured in the pipe-clay workshops in the region of Koln and Bonn and occur as single images or in multiple groups of three<sup>6</sup>. The German goddesses were represented not only as small, cheap clay figures but were also depicted on large and expensive public monuments made of stone. Such monuments were often inscribed to local, Germanic versions of the Mothers, of whom the *Matronae Aufaniae* are perhaps the best-known<sup>7</sup>. The distinctive hairstyle or headdress has been the subject of recent research, and is thought to represent a bonnet of reinforced linen, tied with willow twigs, although J.P. Wild considers wool is much more likely<sup>9</sup>. Where the Germanic Mothers appear in threes, there is a characteristic pattern of imagery, in which the two outer figures, wearing "beehive" headdresses, flank a more youthful lady with flowing hair. This imagery may represent the ages of womanhood<sup>10</sup>. The lunar amulet round the neck of the Arrington goddess is also paralleled on the Rhineland figurines<sup>11</sup>.

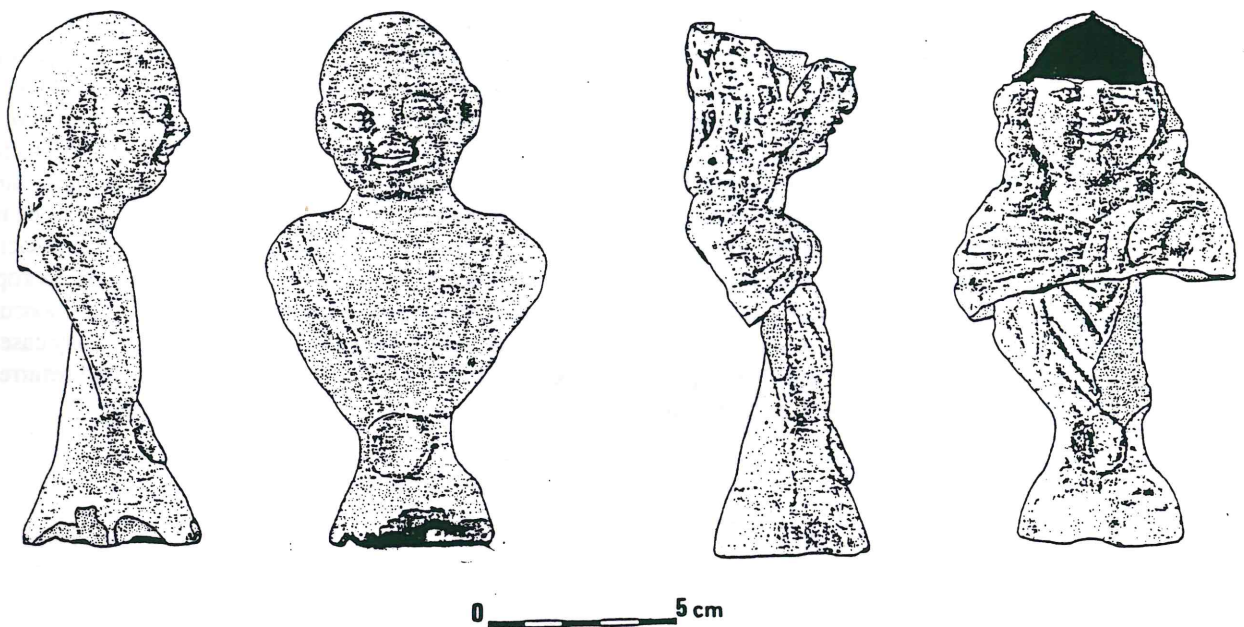
The goddess from this grave possesses abundant symbolism of death and regeneration. Her fruit represents life and renewal; her moon-crescent reflects both death and resurrection: the moon is night, thus a chthonic or death symbol, but its crescentic form indicates new life and the beginning of the moon's waxing cycle. The Roman lunar goddess Diana was not only a huntress but she protected women in childbirth: the association between women and the moon was because of the link between the monthly behaviour of the moon and the female menstrual cycle. The figurine was probably placed in the baby's grave as a symbol of protection in death and rebirth in the Otherworld. Placing an image of a Mother Goddess with the dead child may also have comforted the parents in the thought that he or she would have the guardianship of a symbolic parent in the journey to the afterlife.



ii) **The bald-headed infant** is a figurine of a type well-known in Romano-Gaulish contexts. It may well have been made in the factories of the Allier district of Central France. Several examples come from the Roman town of Alesia (Cote d' Or)<sup>12</sup>. Others are recorded at, for instance, Toulon and Vichy (Allier); Compiègne (Oise); Vesoul (Haute-Marne) and Clermont-Ferrand (Puy de Dome)<sup>13</sup>. Images of babies are found in both graves and in shrines. At the healing sanctuary of Apollo Belenus at Sainte Sabine, Burgundy,<sup>14</sup> pilgrims dedicated stone images of swaddled infants to the god in the hope that he would cure them. The Arrington image of the baby may have been bought and placed in the child's tomb to represent the child itself, as is suggested for the Colchester grave. This action may have served to dedicate the child to the infernal gods, or have been present as a doll to comfort the infant in the underworld.

iii) **The long-haired child.** This bust represents an older child. It depicts a smiling, round-faced individual with long curling hair. There is a close resemblance between this figure and offering of terracotta busts of children found at the therapeutic sanctuary of Lenus Mars, Trier<sup>15</sup>. At this temple, the god was invoked as *Iovantucarus* an epithet given to Lenus as a special protector of the young<sup>16</sup>. Pipe-clay busts of children were also offered elsewhere in Trier, at the Altbachtal temple-precinct: interestingly, one of these is represented wearing a crescentic lunar amulet, very similar to that worn by the Arrington Mother Goddess<sup>17</sup>. In France, figurines or busts of long-haired children were manufactured at the Allier pipe-clay factories of central Gaul. Some have been found at the sites of or close to these workshops. Examples include those from Saint-Pourcain-sur-Besbre (Allier), and at Vichy (Allier)<sup>18</sup>.

It is uncertain exactly who the image of this older child is meant to depict: it could be an image of an older sibling or, perhaps more likely, may represent the dead infant itself as an older child, in a kind of wistful hope that it would grow up in the Otherworld. A similar way of thinking may occur in some Romano-British graves. For example, in graves<sup>19</sup> associated with a shrine in Cambridge, babies were interred with shoes much too big for them at the time of their death.

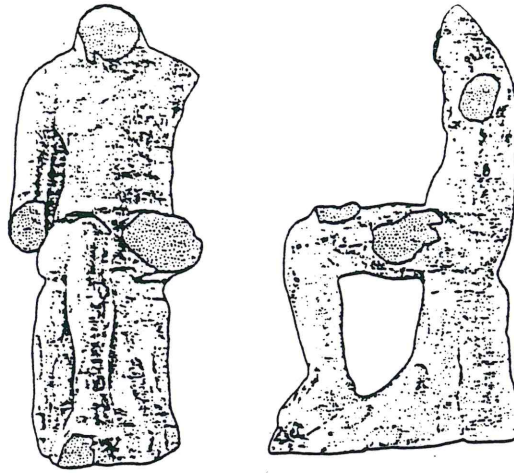


iv) **The seated figure.** A damaged, headless statuette depicts a naked male figure seated on a rock or tree-stump. Apart from the head, the left arm is missing from the shoulder, the right arm is broken off at the elbow and the left leg is missing from mid-thigh. Despite this damage, it is possible to identify this representation as that of a "spinario" or thorn-puller. This is a well-known genre theme, the subject of many sculptures and terracottas, especially in the Hellenistic period. A Roman Republican statue from the Capitoline in Rome, made by a Hellenistic artist, depicts a young boy, his left leg hooked over his right, bending to pull a thorn from his left foot<sup>20</sup>. A Hellenistic marble statue in the British Museum depicts the same theme, and terracottas from Priene in Asia Minor represent cruder, sometimes negroid, figures in the same position<sup>21</sup>.

The Arrington "thorn-puller" probably belongs to the group of "spinarii" made in the Gaulish pipe-clay factories. They occur, for instance, at Toulon-sur-Allier and Clermont-Ferrand<sup>22</sup>. Two of the figures come from a cemetery at Poitiers.<sup>23</sup> The symbolism of the thorn-puller in the context of the Arrington grave is not immediately obvious. The Hellenistic figures are of older children or youths and it may be that the image was chosen, like that of the long-haired child, to represent one of the stages of growing-up to which the dead infant might aspire in the Otherworld.



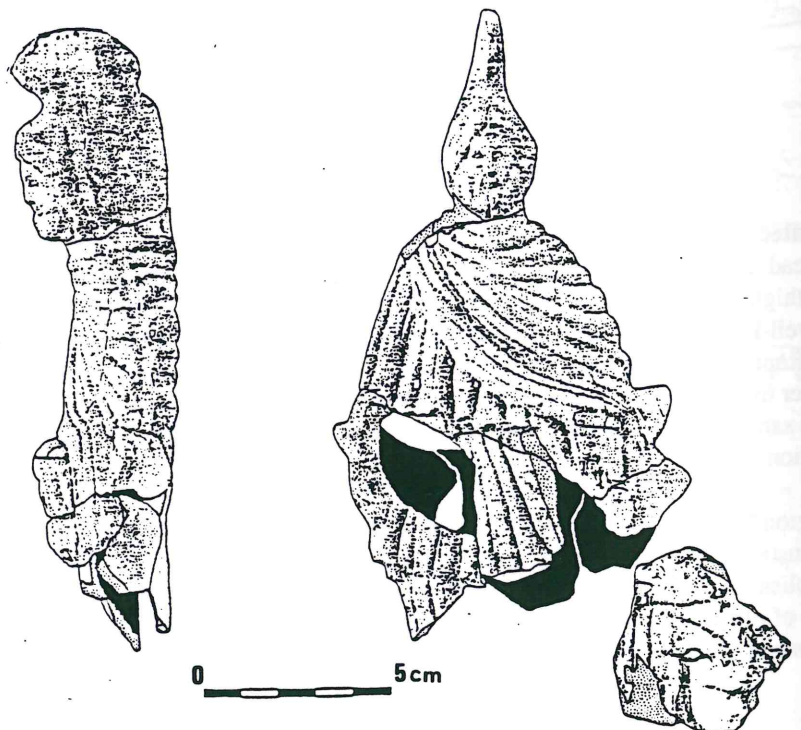
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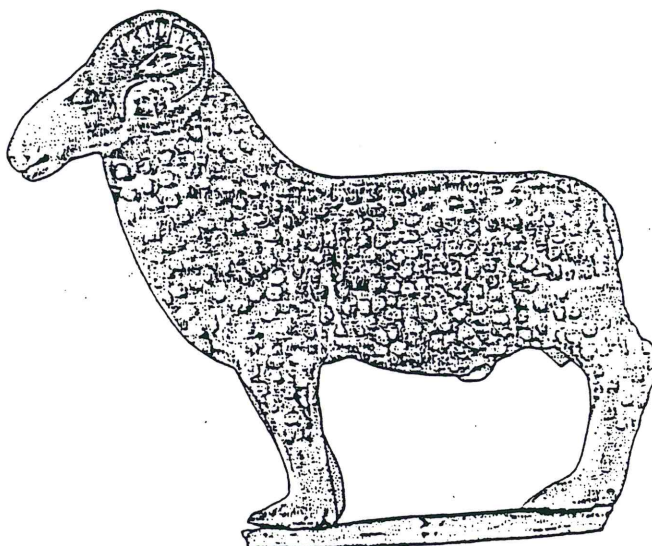
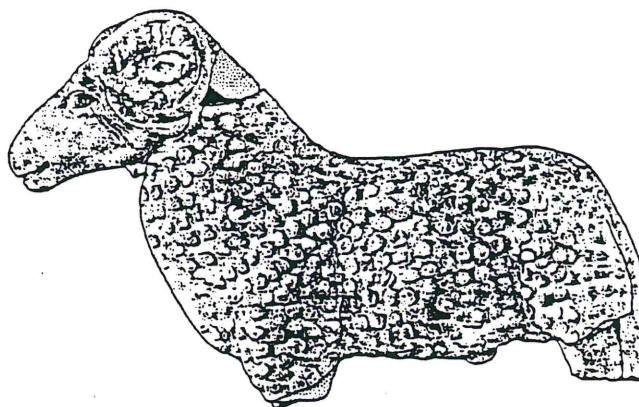
v) **The cloaked figure.** This statuette is perhaps the most enigmatic in the group. It represents a man with curly hair and beard. He wears a belted tunic falling in heavy folds or pleats and a cloak, which falls from a fastening on his right shoulder and covers his left shoulder and arm. Most distinctive is the Persian or Phrygian cap that he wears. This is a hood-like cap which comes to a pronounced and overhanging peak on the top of the head. The statuette is broken and missing from mid-thigh and both hands are fragmentary, but the figure appears to hold something in his left hand. A small detached clay fragment, apparently from the same figure, appears to represent part of the man's cloak or tunic, but in front of this is a small animal, perhaps a piglet or a bear.

The presence of the Phrygian cap suggests an Asiatic origin for this representation: divinities depicted wearing it include the Anatolian god Atys, the Persian Mithras and the Syrian Jupiter Dolichenus. But neither Atys nor Mithras<sup>24</sup> are bearded and they usually appear much younger than the Arrington figure. Dolichenus is more mature and is heavily bearded<sup>25</sup>, but he generally appears as a warrior, wearing a cuirass<sup>26</sup>. Another idea is that the Arrington figure represents one of the Mithraic *dadophori* (torch-bearers), *Cautes* or *Cautopates*, representations of whom appear in *mithraea*, one with torch held upwards, the other inverted. But again these *dadophori* are unbearded, being in fact versions of Mithras himself<sup>27</sup>. A suggestion made to me by Charles Daniels of the University of Newcastle is that the figure may depict Orpheus. He is usually unbearded, but he does appear, for instance, on a mosaic pavement at Newton St. Loe near Bath accompanied by several animals including a bear<sup>28</sup>. We have seen that the Arrington figure may be associated with a bear. The mythology of Orpheus is closely associated with death, and thus his presence would be appropriate in a sepulchral context. The only other possible candidates for the identity of the Arrington figure are the Dioscuri and related Cabeiri, whose cult centre was at Samothrace. These are usually depicted in pairs and are, in any case, unlikely to have been present in a Romano-British grave, but both of the cults were associated with death and resurrection and thus would not be out of place in a child's grave.

v.



vi.



0 5 cm

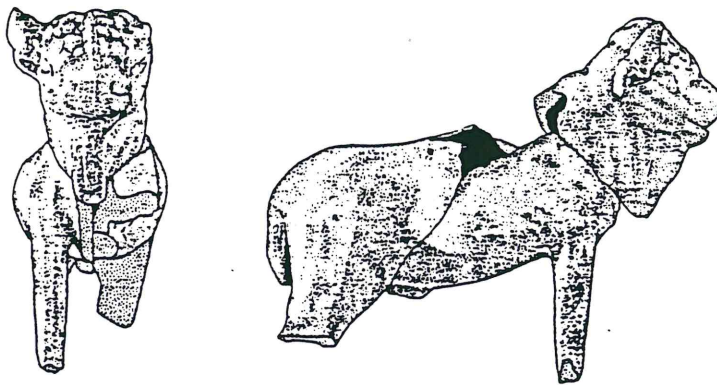
vi **The rams.** Two nearly-complete figurines, and two fragments, depicting standing rams came from the grave. The statuettes are treated distinctively, with the fleece represented by raised circles. The heads have curved horns. The more complete ram stands on a plinth. Clay statuettes of rams were made in the central Gaulish Allier manufactories: similar examples are recorded, for instance, at Saint-Pourcain <sup>29</sup>.

The depictions of rams could have been placed in the child's grave at Arrington for a number of reasons. Rams were sacrificial animals in many cults: thus on a Roman altar at Sea Mills Avon), a ram's head and a sacrificial knife are depicted <sup>30</sup>. On a distance-slab from Bridgeness in the Antonine Wall is shown a Roman state ceremony of the *suovetaurilia*, where a boar, ram and bull were sacrificed <sup>31</sup>. This took place at the festival of the Ambarvalia in May, a kind of "beating of the bounds" fertility rite to protect fields <sup>32</sup>. In rites associated with the cult of the Anatolian Great Mother Cybele, rams were sacrificed in a ceremony called the *criobolium*. Rams were sacred to the Roman god Mercury, probably as symbols of fertility: depictions of this god frequently show him accompanied by a ram or goat. An example is the bronze statuette from Verulamium <sup>33</sup>. Mercury and his Celtic consort Rosmerta are depicted with a ram on a relief at Bath <sup>34</sup>, and an Italian marble group from the Wallbrook *mithraeum* shows Mercury with a ram by his side <sup>35</sup>.

vii) **The bullock or ox.** The fragmentary figure of a male bovid depicts a slim animal with neck-folds and horns. It is apparently a bullock or ox rather than an uncastrated bull. Pipe-clay bulls or bullocks are recorded on Gaulish sites where they were supplied by the Allier workshops. Examples are figurines from Toulon and Saint-Pourcain in Allier and Clermont-Ferrand (Puy-de-Dome)<sup>36</sup>. The three statuettes from Troneon (Finistere)<sup>37</sup>, may have been produced by Breton factories at Rennes. The presence of a pipe-clay "bull" from an infant's grave at Arrington is paralleled by a similar occurrence in another child's tomb at Colchester, which contained many clay figurines including a bull; but that example has three horns<sup>38</sup>.

Many cults of Roman origin were associated with bulls or oxen, not least that of Jupiter himself (perhaps because a roaring bull was appropriate to a potent thunderer). In addition, the ox and bull, like the ram, were frequently chosen as sacrificial victims<sup>39</sup>. The *suovetaurilia*, the sacrifice of a bull, ram and boar, has already been mentioned in connection with rams. This little figure was perhaps placed in the Arrington grave as a symbol of strength or, may be, as representative of a sacrificial offering to the gods of the underworld.

vii.



0 5 cm

On excavation, the skull, crushed in antiquity or at the time of discovery, was removed from the site in its surrounding matrix, wrapped in clingfilm on a board and brought directly for analysis. Despite its encasement, it could be seen from the small size, thin vault bones, open sutures and the size of the mandible — lying free but coated in clay — to be that of an infant. The presence of tufts of hair and the possibility of the preservation of scalp tissue indicated the need for conservation, and it was sent to Kathryn Tubb of the London Institute of Archaeology.

After some weeks mould developed within the wrappings, despite refrigeration, and so the skull was unwrapped and dissected out of the soil matrix. It lay on the left temporal/malar area; the right temporal and right maxilla were crushed inwards, having separated at the squamous suture and those of the zygomatic; the bones of the vault were broken as well as separated at all sutures, while those of the face and skull base were fragmentary and denatured, with a texture barely recognisable as that of bone. Dense, sticky, grey clay was removed from within the frontal and around the sphenoid and parts of the cranial vault, while elsewhere the matrix was less dense and yellowish-white. Wet-sieving was carried out on all the soil removed from the skull, and a few loose teeth were found: they were uniformly black, as were those in the mandible.

The age of this child can be determined from the tooth development and eruption. The developmental stage of those teeth present in the mandible is that of an infant approximately months old (+ 3 months), when the crowns of the deciduous dentition are complete, the second incisor has broken the alveolar plane, and the first permanent molar crown has a complete outline<sup>40</sup>. Moorrees, Fanning & Hunt's standards for measuring the formation of the permanent molars also suggest an age of 9—10 months<sup>41</sup>. However, the eruption stage of the first deciduous molar is somewhat greater, being that of a one-year-old, and the tympanic ring development conforms to the 11-month stage, so the age might be a little higher than tooth development suggests: probably 10.—11 months<sup>42</sup>.

Despite the child being no older than one year, the reconstructed skull vault is enormous, being comparable in size to that of other archaeological specimens of four years old. The vault is low, the greatest size increase having been in width, particularly in the frontal region, the bregmatic fontanelle is very large, and the bones are thin. This is a case of hydrocephalus ("water on the brain"), a disorder which can be caused by embryonic developmental disorders, by trauma at birth, or by infection; although it is not possible to determine the cause in this particular case, owing to the absence of certain diagnostic parts of the skull and postcranial skeleton, it is almost certain that this condition caused the death of the child.

In the upper part of both orbits, *cribra orbitalia* is present, probably indicating an anaemic condition in the child. The *cribra* is at Stuart-Macadam's stage 1<sup>43</sup>, and might be supposed to show a slight condition, or one that is in its early stages. Portions of some of the cervical vertebrae were also found, with a few rib fragments and an unidentifiable long bone, all badly eroded and fragile.

The "scalp tissue" proved to be decaying fragments of fabric which had covered the head, mixed with matted hair in the sticky matrix. The fabric has been studied, and is reported below. Samples of the fine, light brown hair have been taken for chemical and DNA analysis, and are discussed by Brothwell below. Small orange-yellow granules found in the sieved soil give off a fragrance when crushed, and are presumed to be incense: the study of this material is reported below.

## HUMAN HAIR

DON BROTHWELL

A small dense mass of hair was identified at the apex of the collapsed skull when it was taken to the Conservation Laboratory of the London Institute of Archaeology. Although ancient hair is quite commonly found to be reddish-brown in colour<sup>44</sup>, the hair on the child was still somewhat blonde in appearance. While the burial matrix may have influenced the colour, it is more likely that it indicates original light pigmentation, for it seems unlikely that dark pigmentation would not have shown through as oxidized reddish-brown hair.

Samples of this hair were removed and stored dry. It was considered that nothing was to be gained from freeze-drying or storage in liquid nitrogen, as in the case of the larger amounts of hair from a Roman coffin burial at Dorchester. In terms of orientation on the skull, the hair could have been combed, but there was no evidence of plaiting. No lengths were recovered, and the strands were generally no more than 20-40 mm in length. The hair looked fragile and was not easily separated from the burial matrix. Only gentle washing was attempted, prior to further examination. At the time available, no chemical analyses were attempted, but a sample has been retained for possible analytical comparisons at a later date.

In view of the apparent poor preservation of the hair, further examination was restricted to the scanning electron microscope<sup>46</sup>. Scale pattern replication by the cellulose acetate method would not have added further information. Also, because of likely post-mortem changes, it was considered that hair sections were unlikely to reveal normal hair morphology.

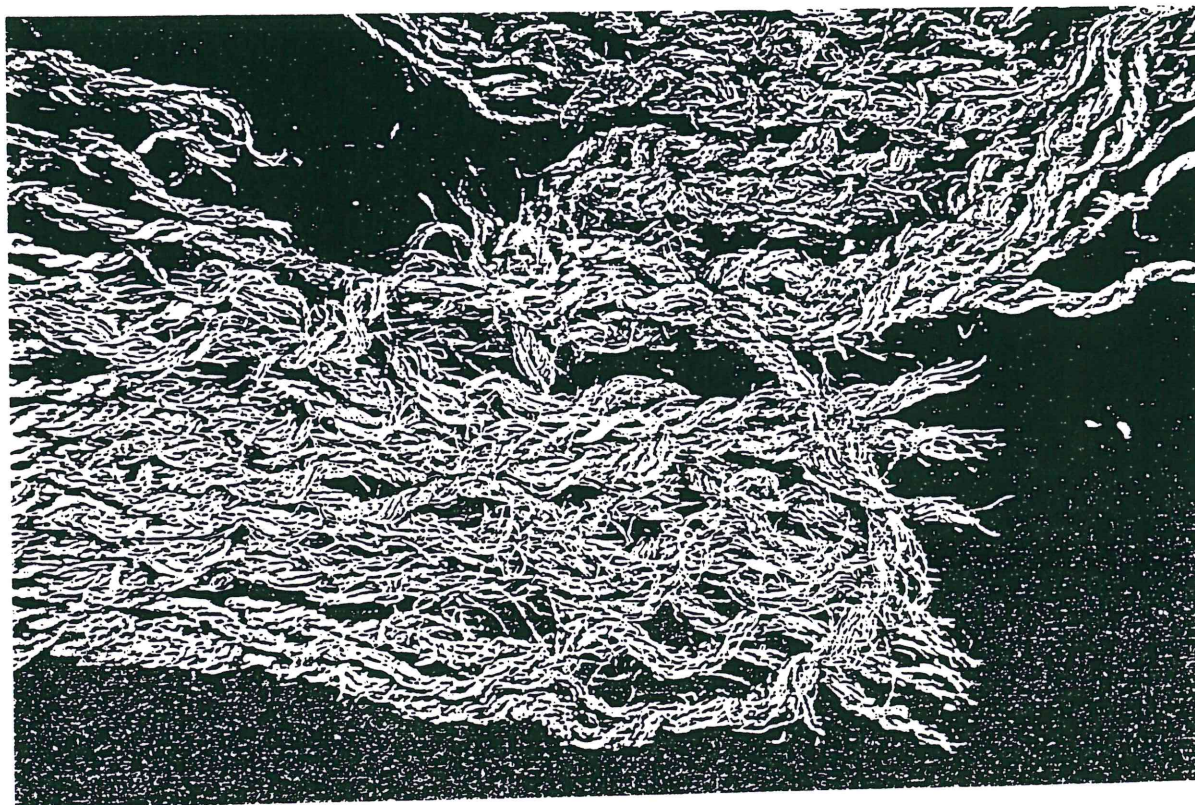
The first question to ask of the SEM detail is whether it confirms that the hair belonged to the child, as opposed to indicating the presence of a fur cap. As seen in a better preserved section of hair, the cuticular scale pattern and dimensions are within human variation. Even the more eroded and damaged cuticular scales, are still typical of human hair. There is therefore no reason to believe the hair was part of fur clothing buried with the child. In SEM detail the hair was remarkably variable in preservation. In some parts of the hair, there were large localised ragged holes into the hair; in other regions, the destruction appears to have started internally within the medulla, only later penetrating to the exterior surface. The reason for this damage is not clear. There is no evidence remaining of keratinophilic bacteria although they may have been active in the past. The deep erosions into the hair would suggest that the burial matrix may have been equally responsible for both the unusual preservation and the patchy decay.

The textile fragments from inside the coffin were as follows:

1. Fibres brittle, but form clearly preserved. Pinkish-fawn dyes.
  - a) Area approximately 8.0 x 3.0 cm, Z-spun, very light twist, very evenly S-plyed, onsystem only preserved, the threads lying tightly side-by-side, approximately 20—24/cm where undisturbed, other system, if indicated by ply, 6/cm. Threads held together in places by easily identifiable blackish rootlets. One end of threads perhaps cut, turned under in hem (no sewing preserved), the other torn, uneven.
  - b) Small fragments of the same, approximately 2.0 cm long, folded over, held together by white substance (lead carbonate?).
  - c) A lump of white substance, with similar threads protruding, the ply split open.  
Dye: pink or red, madder or bedstraw <sup>47</sup>.
  - d) Fragment, c. 5.0 x 1.5 cm, similar to a), found in skull.
2. Fragments of similar thread, Z-spun, S-ply, in a tight bunch, length 1.3 cm. Dark brown to black. Dye: madder type as for 1, with what may be indigotin.

This is likely to have been part of a fine cloth wrapped round the child's body, the two colours indicating decoration, or a band used for holding the wrapping in place.

No selvedge is preserved, and this could be either a warp-faced or a weft-faced weave; stripes are common decoration in Roman weaving, and the missing system could be the warp or weft of the main cloth. Z is the normal direction for spin in Roman textiles. Plying, however, except for sewing thread, is very rare, and there is no visible indication of the passage of the missing system if this was the weft of a tabby-woven stripe. The extreme regularity of the ply and the closeness of the threads in the best-preserved areas suggest that this may perhaps have been woven on 2-holed tablets, to form either a detached band, or the selvedge on a cloth of a different fibre. A narrow selvedge woven on 2-holed tablets is described by Wild on a wool weave at Mainz, dated to before 300 AD <sup>48</sup>, and two-colour threads, probably from a tablet-weave band, were present on bronze ornamental studs from Magiovinium <sup>49</sup>.



Fabric, photographically enlarged

## SHEEP FIGURINES

MICHAEL RYDER

At least one of the human figurines was made on the continent and is unparalleled in this country, and to my knowledge the sheep figurines are also unparalleled in Britain. This suggests that they, too were made on the continent. It is clear why, if symbolising a sacrifice to the gods, there were three, possibly four, sheep, but only one bullock. A common Roman sacrifice was the *suovetaurilia* sacrifice of a cow, a pig and a sheep. Two Romano-German, apparently pottery figurines of horned sheep in Cologne museum appeared to be toys since they were grouped with a toy comprising a horse on a horse with four functional wheels.

The complete pipeclay sheep from Arrington were identical and made in halves, probably in the same mould. They were horned and had a straight nose, that is neither a convex Roman nose as in the Cologne toys, nor a primitive, concave "dished" nose. The head of the third incomplete sheep was of the same shape and also had horns. Their identification as rams is confirmed by the representation of a penis in the complete sheep. The horns had the usual ridges as well as an unusual longitudinal ridge. The tail was of medium length, reaching to just below the hocks, i.e. it was neither a primitive short tail nor a long tail.

The dimensions are given to indicate the proportions of the body: length 125 mm, height at the withers 100 mm, girth of body 55 mm and girth 155 mm. This is clearly a well-proportioned (well-bred and well-fed) animal with good conformation. It accords with the description of a good ram given by various Roman writers, the desirable features including: a deep chest, wide shoulders and loin, short legs and a long tail<sup>50</sup>. There is no hint of the unimproved characteristics such as slenderness that are known from skeletal remains to have been common until after the Neolithic Ages.

The two identical figurines have a short fleece in which the locks of wool (known as staples) were indicated by circles (blobs) within which, in careful detail, were circular marks apparently indicating a curl. The third fragmentary figurine had pointed wool staples, within which, again in careful detail, the individual wool fibres were indicated by streaks.

Sheep figurines, notably those from Mesopotamia, have long been used by archaeologists as indicators of the presence or absence of a fleece, which first appeared in the Bronze Age. The earliest representations of sheep in Mesopotamia had no fleece; the coat was shown smooth like that of the wild sheep ancestor or deer. Later, the sheep were depicted with a fleece indicated by woolly locks (wool staples). More detailed study has made it possible to discern from the shape of the wool staples which kind of fleece was represented in the figurines<sup>51</sup>.

Wool fibre diameter distributions from textile remains have indicated the way in which different types of fleece have been developed<sup>52</sup>. The first kind of fleece to develop was of Hairy-medium (primitive hairy) type. Since the longest fibres are the longest, staples of hairy fleeces are shaped like a pyramid. The pointed tip is formed of hairs, and the base is filled out with more numerous wool fibres of medium and fine diameter. The earliest depiction of this type of fleece appears on a crude sheep figurine from Sarab in Iran dated c. 5000 BC. The fleece is shown by a series of V-shaped marks which I interpret as a Hairy-medium fleece and the earliest evidence of the development of a fleece<sup>53</sup>.

The third fragmentary Arrington figurine had pointed staples of hairy type. The true Hairy type of fleece, which appeared in the Iron Age, also has pointed staples, which are longer than in Hairy-medium fleeces. The Arrington example is interpreted as Hairy-medium rather than true Hairy, which is rare in textile remains because it is too coarse for cloth. The true Hairy type of fleece later became the main kind of wool used in carpets, as it is today.

Fleece evolution continued with the change of the hairy fibres, first into fibres of medium diameter, and then into fine fibres. The resulting greater uniformity of fibre diameter was accompanied by a greater uniformity of fibre length. That finer fleeces have staples with a straight end instead of being pointed. Woolmen call the pointed (hairy) "tippy" and those with straight end "blocky". The two kinds of staple form are evident among Roman representations. "Blocky" (improved) fleeces were perhaps more common, and were found among the Cologne figurines.

The short, curly fleeces indicated in the two identical Arrington figurines are rare in representations; two examples illustrated by Ryder are from Greece<sup>55</sup>. First, curly sheep are shown on a gold pectoral made by Greek craftsmen found in the tomb of a 4th century BC Scythian princess buried in the Ukraine<sup>56</sup>. Secondly, a 3rd century BC figurine from the Chalkidiki peninsula is in the shape of a sheep with a curly fleece<sup>57</sup>. Curliness is found in neither the fine nor very coarse (hairy) fleeces, although lambs of Hairy breeds are sometimes curly as in the Karakul breed.

lambskins from which are "Astrakhan". Curly wool is seen today in English lustre longwools. Invariably these have long, curly staples with wool fibres of Medium diameter. Curliness is also sometimes found in primitive woolly (Generalised-medium) fleeces, for example in the Shetland breed.

The models for the curly Arrington sheep are likely to have had Generalised-medium fleeces. But textiles of true Medium wool are not infrequent among Roman remains, and the robust body of the Arrington sheep is like that of modern lustre longwools. The Roman Medium wool has been interpreted as being a primitive longwool like the modern demi-lustre Romney breed<sup>58</sup>. This sheep has a fleece intermediate in length between that of the shortwool and the longwool. Could it be that a curly longwool existed on the continent during the Roman period? The figurines have the appearance of a recent y-shorn, lustre longwool. This type did not become prominent again until the 18th century, when it was localised in England.

## DYE

PENELOPE WALTON

Two samples of textile were examined, one of pinkish-fawn, the other of black. It was thought that the black threads might be carbonised threads from the same textile as the pink-fawn. The samples were exposed to our usual tests for dye, that is, solvent extraction followed by absorption spectrophotometry. The pink-fawn sample proved to have been dyed with a red dye of the madder/bedstraw type. The dyestuff was present in weak concentration and there was therefore not enough to allow thin-layer chromatography, which would have distinguished between dyers' madder, *Rubia tinctorum* L., and other madders and bedstraws. The black sample was very small and the colorant(s) again very weak. There was a definite trace of the same madder/bedstraw dye as in the previous sample, but there may also have been a second colorant, possibly indigotin (i.e. woad/indigo). The black colour was fully extracted from the yarn, which indicates that the colour was not a result of carbonisation of the fibre, nor natural pigment.

## AROMATIC RESIN

Many fragments of brittle yellow-brown resin, with notably cellular structure, were recovered during the excavation of the head, under laboratory conditions. These have the appearance of myrrh. They were easily crushed with the fingers and smelt strongly aromatic. Caroline Cartwright of the British Museum kindly attempted analysis, but could only deduce that they were some type of aromatic resin<sup>59</sup>. Other attempts at analysis have so far proved inconclusive. The only possible British parallels noted by the author are from Bartlow Hills, Cambridgeshire, where preserved fragments of a bottle made of wicker were said to contain whitish, aromatic concretions<sup>60</sup> and from Weston Turville, Buckinghamshire where in 1855, ashes of a probably female burial were accompanied by numerous pottery and glass vessels including a stamped samian bowl containing burial ashes, leaves (said to be the remains of garlands) and "a white substance which emitted, when pressed, an aromatic scent", plus beads and jewellery<sup>61</sup>. It is notable that in all three cases a distinctive incense-like smell was commented upon when fragments were crushed. Further analysis of the resin is being undertaken by Margaret Serpico, Institute of Archaeology, London, who has sent the following report.

The sample has passed to Dr Raymond White, of the Science Department of the National Gallery, who has examined it by Fourier Transform Infra-red Spectroscopy. A Nicolet 710 bench was used, and the material examined under a Nicplan 1-R microscope in transmission mode. The following bands were noted:

1706 (cm-1)  
1458  
a doublet at 1683  
and 1666  
1202  
1082  
849

These results are indicative of the material being a true resin rather than a gum resin, which excludes myrrh (*Commiphora* Fr.), frankincense (*Boswellia* Fr.) and similar substances, and also fossil resins such as amber.

The results of GCMS (Gas Chromatography Mass Spectroscopy) are awaited, and should enable a more precise identification of the resin to be made.



## SUMMARY AND CONCLUSIONS

This burial is "exotic" in a Cambridgeshire, and even a national, context. There are alien elements, such as some of the figurines and the use of incense, which are otherwise unknown in Britain. Ermine Street is apparently the factor that led to this extraordinary infant burial in the Cambridgeshire countryside. London and York at either end of this highway both supply numerous parallels for lead coffins and pipeclay figurines as grave-goods. Fancy lead coffins, such as those reported recently from Upton (Cambridgeshire) and Ware (Hertfordshire)<sup>62</sup>, are not uncommon along its route.

The parents of the child were probably passing through, although it is possible they were connected with the post station and large road-side settlements at Wimpole and Arrington Bridge, two kilometres to the south. Their use of Germanic, Gaulish and eastern ritual objects, plus incense, imply a very cosmopolitan family. The coffin itself was presumably bought locally and was certainly not custom-made, as it was far too large for the baby. The choice of figurines and the attractive-sounding pink and blue wrappings imply care and affection, which must also have been needed to enable the infant to survive as long as it did, being afflicted with hydrocephalus.

The fabric from the coffin is of great interest, and the sheep figurines not only illustrate the type of ram described by Roman writers, but indicate two kinds of fleece. They give a hint of the existence of sheep with curly wool on the continent at this time, a type which later emerged in the English lustre, longwoolled sheep. It is worth noting that some of the most interesting elements of this burial were only observed in laboratory conditions. If we had attempted full excavation of the coffin interior in the field we would have certainly missed many of these. The coffin, skeleton and grave goods have now been acquired by the Cambridge University Museum of Archaeology and Anthropology, kindly donated by R.J. Hagger of Wraggs Farm.

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