

**MAKING A MINT**  
**COMPARATIVE STUDIES IN**  
**LATE IRON AGE COIN MOULD**

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Cover: Conjoining fragments of a Verulamium form mould tray from Ford Bridge, Braughing

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*Mark Landon  
April 2016*



# Chapter 1

## Starting point

### 1 The background to this study

In 2006, the author of this book discovered a large deposit of clay coin mould fragments eroding from a river bank in one of the Scheduled Monument Areas south of Braughing. The find was reported, and funding was provided by English Heritage for a two-day, single-trench evaluation in advance of bank stabilization work,<sup>1</sup> which was carried out under the direction of Dr Jonathan Hunn of ASC Ltd. In all, nearly 10kg. of mould was recovered, together with 6 kg. of pottery, bone and furnace debris. Since the deposit of coin mould was increasing in thickness as it disappeared into the trench section, it is clear that much still remains in situ. Braughing Local History Society and Dr Stewart Bryant of the Hertfordshire County Council Historic Environment Unit provided funding for a programme of Energy Dispersive Spectroscopy and electron microscopy,<sup>2</sup> which was carried out as part of her Masters degree by Henrietta Longden, then of Liverpool University.

However, the Ford Bridge site was not the first in Braughing to yield pellet mould.

The first assemblage to be found, the Henderson Collection, was unearthed at some point between 1935 and 1960. It comprises 64 fragments of coin mould, many of them small and abraded. Sadly, the finder has left absolutely no record of the context of the find, and only the vaguest indication of its location. A brief account, together with a short report by Craddock and Tite on the XRF analysis of the fragments for metal residues, is included in Partridge, 'Skeleton Green'.<sup>3</sup> Accounts which are in some respects more detailed are included in 'Report on the Scientific Examination of Iron Age Coin Moulds'<sup>4</sup> and 'The examination of refractory ceramics from metal-production and metalworking sites'.<sup>5</sup>

Two small deposits of coin mould were discovered during the course of rescue excavations at Gatesbury Track<sup>6</sup> and Wickham Kennels.<sup>7</sup> Although most, if not all, of the Wickham Kennels material remains available for examination at Hertford Museum, it has proved impossible to locate the Gatesbury Track assemblage. Other finds from this excavation are held at Hertford

Museum, but the mould is no longer with them: it has been suggested that it may have been retained by the British Museum following metal residue testing by Freestone.

Since 2006, five isolated surface finds of mould have also been made in the Braughing/Puckeridge area, all at some distance from known mint sites.

Then, in November 2008, the so-called 'Puckeridge Assemblage' first came to public notice.<sup>8</sup> This assemblage comprises some 30 kg. of coin mould fragments, 17 kg. of associated pottery, around 2 kg. of bone, and some fragments of white stone. It is the second largest single find of coin mould ever made. It was found, allegedly in 1999, by an anonymous amateur under circumstances that remain unclear. An unknown quantity of the material was sold on eBay, but the bulk of the material was purchased from the finder by Chris Rudd, who commissioned the full evaluation which forms the basis of Chapter 6 in the current work.

Taking all of these assemblages together, the Braughing/Puckeridge settlement becomes the largest<sup>9</sup> known centre for the production of coin pellets in the whole of Europe, surpassing even Old Sleaford.<sup>10</sup>

It was felt that an assemblage of the size of Ford Bridge should receive proper evaluation, and that a comparative study should be made with the other pellet mould retrieved. However, it was discovered that the literature on the manufacture and use of pellet mould is sparse, and that this was a reflection of the small amount of primary research that had taken place. As a result, for many years there has been no real progress in the subject. Claims, contentions and controversies remain unsubstantiated or unsettled since they were set out by Elsie M. Clifford in her 1960 work 'Bagendon: A Belgic Oppidum',<sup>11</sup> and little of the continuing debate has been data-driven.

There are three main reasons for this stagnation. The first is that the study of pellet-mould morphology has been almost completely ignored. Instead, attention has been almost exclusively focussed on testing the material for metal residues. Why this should be is not clear. Were one to be facetious, one might suggest that the glamour and glitter of precious metals has perhaps bedazzled and distracted. However, even in a more serious vein, this

<sup>1</sup> Hunn, J, 2007.

<sup>2</sup> Longden, H, 2009.

<sup>3</sup> Craddock, P. and Tite, M. in Partridge, C. 1981: p. 326

<sup>4</sup> Tite, M. and Freestone, I, 1983.

<sup>5</sup> Tite, M, Freestone, I, Meeks, N, Craddock, P, 1985: p. 54.

<sup>6</sup> Partridge, C, 1979: p. 99 and Freestone, I. in Partridge, C, 1979: p. 129.

<sup>7</sup> Partridge, C, 1982: p. 41 and Cowell, M. and Tite, M, in Partridge, C, 1982: p. 57.

<sup>8</sup> Rudd, C, 2008: pp. 30 – 31.

<sup>9</sup> By weight.

<sup>10</sup> In terms of weight: Braughing/Puckeridge coin mould is significantly thicker than that from Old Sleaford.

<sup>11</sup> Clifford, E, 1960: p. 144 – 147.



FIGURE 1.1: THE FORD BRIDGE MINT TRENCH.

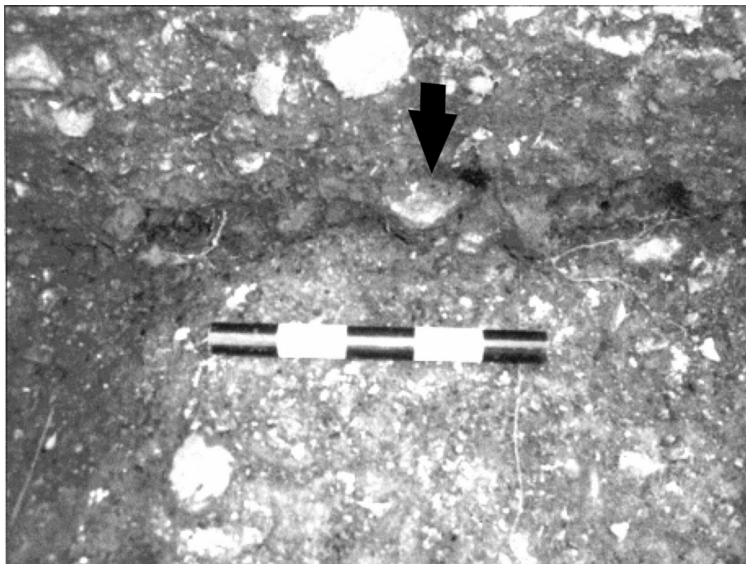


FIGURE 1.2: IN SITU COIN MOULD AT FORD BRIDGE.

preoccupation is strange, not least because of the price differential: to test 1 kg. of mould for metal residue will cost more than the full morphological evaluation of 14 kg. It becomes stranger still when one considers that nobody has disputed that pellet mould was made for use in a process involving molten metal. Yes, it is interesting and useful to know exactly which metals are associated with a particular assemblage, but this is only a single aspect of a class of artefacts which were part of a process which was both technologically and socially complex. The testing of pellet mould for metal residues on its own can never address many of the questions surrounding the stuff itself.

A second, and perhaps greater, obstacle to progress has been the absence of an agreed protocol for recording pellet mould. The collection and recording of morphological data has for the most part been patchy and unsystematic (although Collis<sup>12</sup> and Bayley<sup>13</sup> both

proceeded methodically and carefully in the collection of data), at worst, nearly non-existent – to the point where it has been impossible to carry out even the most basic comparative study, because measurements have not been taken, or have not been taken using compatible methodologies.

In consequence, one of the principal aims of this study has been to evolve a recording protocol for pellet-mould designed to facilitate comparative work, and to address the major issues in the study of the manufacture and use of pellet mould.

The third reason has been the relative paucity of the material: little more than 200 kg. of coin mould has been found in the whole of Europe, spread between Štaštin near Bratislava in Slovakia and Bagendon in Gloucestershire, England. In the course of the present study, some 45 kg. – almost 25% of all the coin mould ever found – has been examined.

<sup>12</sup> Collis, J, in Tournaire et al. 1982.: pp. 422 – 423.

<sup>13</sup> Bayley, J, 1979: p. 1.



Nonetheless, it should be made clear that this book is not the final word on the subject. It had been hoped originally to integrate this study of the supra-microscopic morphology of coin mould with a comprehensive programme of electron microscopy and electron dispersive spectroscopy, to be carried out by Henrietta Longden MA, then of Liverpool University. Unfortunately it proved impossible to obtain funding in time, and this book is much the poorer for it. Indeed, given the current ‘consumption of the purse’ afflicting academe, it is all too possible that this work will never take place.

Moreover, although coin mould from eight different assemblages has been studied in this work, a far larger quantity remains unexamined. Only a minute sample of the very large Old Sleaford assemblage has been subjected to the techniques evolved during this study, many other assemblages have received no attention at all, and more are coming to light at a rate of around two a year.<sup>14</sup> Perhaps more seriously, no comparable work has been undertaken on coin mould from mainland Europe, and so it is not yet possible to evaluate the similarities and differences across the whole area in which coin mould was used. It is to be hoped that the recording protocol which underpins the research on which this work is based will, in due course, contribute to the resolution of these uncertainties.

In conclusion, far more information has been collected in the course of this study than has actually been used. It is to be hoped that this unused material will prove of use to future workers in this field: it will certainly be made available to anyone who wishes.<sup>2</sup> What is coin mould?

Coin mould has been found on sites across Europe. Collis, in his list of 1982,<sup>15</sup> mentioned find-sites in Austria, Belgium, the Czech Republic, England, France, Germany, Luxemburg, Poland and Slovakia. Most of these discoveries have been made within the last hundred years, but the earliest recorded find of possible coin mould was apparently made in the eighteenth century at Haverhill in Suffolk<sup>16</sup> - a ‘clay box’ containing coins is mentioned. It should be noted that England has so far yielded 23 assemblages, more than any other country in Europe. Possible reasons for this will be examined later in this work.

Made of clay, these moulds fall into three main types: ‘potin’ moulds, in which strips of coins joined together by sprues were cast at once, complete with the design, by pouring molten metal into holes linked by channels,<sup>17</sup> and which seem in Britain to be associated with the earliest episodes of minting; ‘potsherds’ moulds, where mould-holes have been bored into a fragment of prefired ceramic,<sup>18</sup> which seem to be associated with very small-scale coin manufacture; ‘pellet mould’, in which small quantities of metal were melted to make the precursors to coin flans,<sup>19</sup> although this account has not been universally accepted.<sup>20</sup>

It is this last type of coin mould which has been the main focus of the study which underpins this work. It is also, by a very large margin, the most common type of coin mould found.

In the most general terms, pellet mould was made by creating many cup-shaped depressions in a slab of wet clay 10mm – 28mm thick,<sup>21</sup> itself usually formed in a mould and then fired. When completed, the slab is known as a ‘tray’. Several different forms bearing varying numbers of mould-holes are known.<sup>22</sup>

Some specimens appear to have been tempered with powdered charcoal,<sup>23</sup> some with vegetable matter,<sup>24</sup> others with shell and crushed chalk; yet more have had the inner surfaces of the mould holes coated with calcium carbonate.

Experiments in casting coin pellets using this type of mould<sup>25</sup> have assumed that measured amounts of metal were placed in each hole; that the tray was then placed on a bed of charcoal, and that charcoal was then heaped over the holes. The temperature necessary to achieve melting was created using a tuyère. It is then assumed that the resulting pellet was again heated (annealed) and beaten into a flan, and then possibly reheated before being impressed with a design by being struck between two dies.

By no means all of the pellet mould retrieved shows to the naked eye obvious signs of use, here to be understood as the effects of extreme heat such as vesiculation and vitrification. On the contrary, many specimens

<sup>14</sup> During 2014, a deposit of coin mould was reported from Switzerland by Dr Roy Tritschack of the University of Fribourg (Tritschack, R., 2014: *pers. comm.*), and a major deposit from Blackfriars, Leicester was examined by the author of this work on behalf of Wardell Armstrong Archaeology (Landon, M, 2015: *unpubl. report*). In March 2015 came the startling discovery of coin mould at Scotch Corner on the line of the widened A1 by Northern Archaeological Associates (Landon, M, *forthcoming*), which is forcing the reappraisal of so many of our ideas about the chronology and geographical extent of the use of coin mould.

<sup>15</sup> Collis in Tournaire et al. 1982, Appendix I: p. 433.

<sup>16</sup> *Archaeologia*, xiv, 1882, 72; cited in Elsdon, 1997.

<sup>17</sup> Debord, J, 1989:p. 12.

<sup>18</sup> Collis, J, in Tournaire et al, 1982: p. 433.

<sup>19</sup> Tylecote, R, 1962: p. 102; Collis, J, 1985: p. 237; Haselgrove, C, 1987: pp. 28 – 29.

<sup>20</sup> Sellwood, D, 1980: pp. iii - vii; Casey, J, 1983: pp. 358 – 360.

<sup>21</sup> Most specimens thicker than 30 mm tend to be puffed up with vesiculation, although a possible fragment of mould from Micheldever Wood Banjo Enclosure (Fasham 1987, Fig 34, C.5) is around 50 mm thick (inf. Dr T. Moore of Durham University) (Although Dr Leo Webley of the University of Bristol disputes this identification).

<sup>22</sup> See below, Chapter 3.

<sup>23</sup> Tylecote, R, 1962: p. 102; Longden, H, 2008: p. 17.

<sup>24</sup> Longden, H, 2008: p. 17 and Fig. 10, p. 18.

<sup>25</sup> Tylecote, R, 1962: p. 102 and De Jersey, P. (with Burridge, N.), 2007: pp. 261 – 262.

which have given positive results for metal residue have shown no evidence of extreme heating beyond a blackening of surfaces.<sup>26</sup> This stands in stark contrast to the experimentally derived finding of Gebhard his collaborators,<sup>27</sup> that ‘The surface usually shows a noticeable degree of vitrification’. Of those specimens which do show clear signs of having been subjected to extreme heat, the majority appear to have been heated on the upper surface only, a significant minority show these traces on both upper and lower surfaces, and a very few examples have been heated to such a degree that the fabric of the mould has begun to slump.

It has been assumed by many that there is a direct link between the size of hole on a given fragment and the denomination of the coin to be produced from the blank cast in it, but this has not been demonstrated. Indeed, few subsequent accounts betray any awareness of the implications of the warnings of both Clifford<sup>28</sup> and Tylecote<sup>29</sup> about the variability they observed in the conformation of mould holes on a single fragment.

It should be noted that there is considerable variation in the material in several parameters. For this reason it would seem unwise to reason by analogy from one assemblage to another until it has been proved on the material that the analogy is valid.

Finally, the minting of coin is not an activity that takes place in a social or economic vacuum. Money is the physical expression of a mutable conceptual construct peculiar to the social unit producing it. Ideas of value and worth, the projection of power and the expression of prestige can govern the choice of metal and the design upon the coin, while the economic context might decide the weight and precise composition. The function of money is not a constant. It is constantly defined and redefined by the culture within which it is used.

Minting in the British Late Iron Age marks the start in these islands of a long road that leads ultimately to ideas of monetary value and function so complex and so abstract that it is impossible to generate a single, coherent definition. If we can begin to understand this initial point, we take a step towards understanding subsequent developments. That we now have good evidence that the use of this technique for minting persisted into the later C4th AD<sup>30</sup> would seem to suggest that native ideas about minting (and hence the coin itself) continued as the dominant local tradition right through the Roman period.

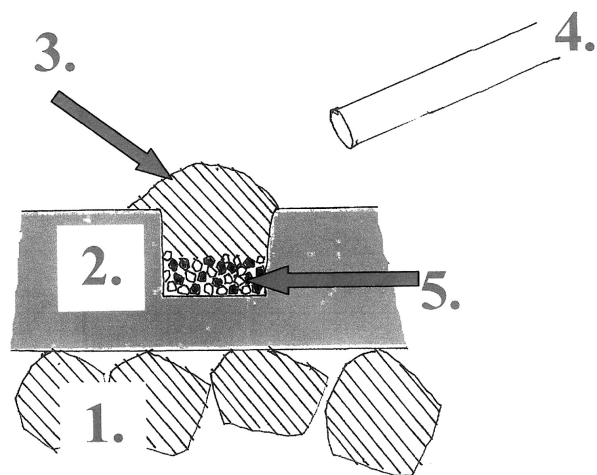


FIGURE 1.3: PRESUMED METHOD OF USING PELLET MOULD.

1. CHARCOAL BED; 2. PELLET MOULD; 3. GRANULATED CHARCOAL HEAPED OVER HOLE; 4. TUYÈRE; 5. GRANULATED METAL.

We know that people of the Iron Age imbued much of what we would regard as mundane and secular activity with symbolic significance and quasi-religious numen,<sup>31</sup> and this clearly extended to coinage as well: not only are the designs upon the coins themselves freighted with symbols the meaning of which can often only be guessed at, but we can tell from the context from which many coin-hoards have been retrieved that the coin itself had a religious function. Given the relative complexity of the process chosen to make these coins, it would be unsurprising to discover that the process of manufacture was in turn enriched with symbolic meanings, and that the cultural and conceptual framework of the society producing the coins had influenced significantly the technique of minting. That the evidence suggests the continuance of this tradition until the last decades of the Roman occupation indicates, perhaps, the degree to which native British thinking remained unaffected by *Romanitas* – a useful counterpoint to the sneers of Tacitus.<sup>32</sup>

If we start with the coin mould itself, note its archaeological context carefully enough, examine it closely enough, and consider it minutely enough, if we can reconstruct the process of which it was a part, we may begin to see points at which native British conceptualisation differed significantly both from the Roman and from our own, and from these hints perhaps glean some insights into the rich interconnectivity that informed areas of this vanished world of the mind.

<sup>26</sup> Craddock, P. and Tite, M. in Partridge, C, 1981: p. 326.

<sup>27</sup> Gebhard et al. 2007, cited in Longden, H, 2008: pp. 9 – 11.

<sup>28</sup> Clifford, E, 1960: p. 144.

<sup>29</sup> Tylecote, R, 1962: p. 101.

<sup>30</sup> Ponting, M, 2015: *pers. comm.* ‘...this method of blank production is very ‘Native’ and not at all Roman. But I also think that it continues as the preferred method of blank manufacture at least up to the period of the so-called Barbarous Radiates – I am pretty certain that the blanks in the Fenny Stratford hoard were produced this way.’

<sup>31</sup> Collis, J, 2008: *pers. comm.*

<sup>32</sup> Tacitus, *Agricola*, 21