

# COIN-WEIGHTS IN ENGLAND – UP TO 1588

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ALTHOUGH the objects used for weighing coins are familiar to numismatists, and often mentioned in the literature, a coherent account of the English series is lacking. Recent discoveries have enlarged our knowledge of the field to the point where an attempt may be made to remedy this deficiency. At the same time the steady progress of our understanding of all aspects of weights, currency, and coinage calls for a revision of some traditional assumptions.

This article covers the period from Anglo-Saxon times up to 1588, a date which marks the final establishment of satisfactory weight-standards throughout England. For the earlier part of this period documentary evidence is rare and artefacts are (apparently) rarer still. But both types of evidence are discovered in proportion to the number of people who know what to look for, and so it is desirable to describe what is already known, however sketchy that knowledge may be, so that important evidence is recognised when it turns up. One of the aims of the first part of this article is to provide such descriptions; another is to establish the context for the practice of coin-weighing which continues, with periodic ebb and flow, throughout the centuries.

Around the end of the thirteenth century the general picture becomes clearer, and it is fairly complete from the early fifteenth century onwards. Consequently, in the latter part of the article the aim is to give an account which, although inevitably incomplete, will answer all the major questions about English coin-weights that a numismatist might ask. Of course, there are still many points which need further research, but the framework can now be delineated with some confidence.

The natural point of departure is the Later Roman Empire, because the use of coin-weights in Late Roman times is well-documented.<sup>1</sup> For example, there are laws of Constantine relating to the use of scales and weights, some of them being very explicit about the manner in which weighing is to be carried out. There are also coin-weights (*exagia*) from the time of Julian (361–363) and later emperors which are clearly intended for the specific purpose of checking a single gold solidus.<sup>2</sup> As we know, the weight<sup>3</sup> of the solidus remained stable at around 70gr for many centuries, and it was identified with one-sixth of the Roman-Byzantine ounce. Thus the weights used for general purposes in the Byzantine empire could also be used for checking gold coins and, in particular, the one-sixth ounce weight (*nomisma*) was used as a coin-weight for the solidus. Examples of this weight, bearing the letter N and varying degrees of decoration, are very common. *Exagia* and *nomismata* which have survived are made of a copper alloy, but it is quite possible that lead weights were also used.

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<sup>1</sup> M.F. Hendy, *Studies in the Byzantine Monetary Economy* (Cambridge, 1985), pp. 329–333.

<sup>2</sup> F.G. Lavagne, 'Les Poids Byzantins', *Archeonumis* 3 (1972), 19–27; Hendy, Plate 3; A. Dieudonné, *Manuel des Poids Monétaires* (Paris, 1925), Figs. 2, 3, 4; N. Durr, *Catalogue de la Collection Lucien Naville* (Geneva, 1964).

<sup>3</sup> The word *weight* is used here as a synonym for the scientifically correct *mass*. This usage seems to be preferred by most people, there being little chance of confusion between the object known as a weight and the property of matter denoted by the same word. Throughout this article the unit of weight (mass) will be the *grain*, because that is the unit which is most appropriate for English coin-weights from the fifteenth to the nineteenth century, when most of them were produced. The conversion to grams is given by the equation  $15.432 \text{ grains} = 1 \text{ gram}$ .

*Pre-conquest material from England*

Of course, the high level of organisation in the Late Roman and Byzantine empires has no direct relevance to the situation in contemporary Britain. But, as we shall see, the indirect influence was manifest throughout the centuries, almost until the very end of the Byzantine period.

When the Romans departed from this island they left behind a people familiar with the use of scales and weights. Steelyards and equal-arm balances are often found in Romano-British sites, and although it appears that the steelyard may not have been used in Anglo-Saxon times, the balance certainly was. There is ample evidence from finds at graves in Kent and elsewhere that small balances were owned by wealthy people, even in the period when coins did not circulate as money. These balances were almost certainly used for weighing small objects of gold and silver, including obsolete Roman coins and pieces of them. A typical find<sup>4</sup> is from the Gilton hoard; it comprises a small beam, fragments of scale pans, scraps of gold and silver, and about seventeen small metallic objects, most of which appear to have been used as weights. Some of the weights are Roman coins ('first and second brass'), worn or rubbed down, and bearing a number of dents or punchmarks. There are also two Byzantine weights, both light in comparison with the 70gr standard:

- two-nomismata, square, *Obv.* NB (N = nomisma, B = two), *Rev.* two punched dots, 124gr (= 0.88 of the 140gr standard);
- third-nomisma, square, *Obv.* H (= 8, indicating 8 siliquae at 24 to the nomisma), *Rev.* nine punched dots in the shape of an X, which may therefore represent 10, 19gr (= 0.82 of the 23gr standard).

Similar Byzantine weights are frequently offered for sale nowadays, and it is possible that some of them have been found 'casually' in England. Confirmation of this suggestion, and determination of the actual weights of examples with a firm English provenance, would be a very welcome contribution to our knowledge of Anglo-Saxon weight systems.

Several other Kentish hoards of scales and weights are described in the older literature, among them finds from Ozingell<sup>5</sup> (near Ramsgate) and Sarre.<sup>6</sup> The recent publication<sup>7</sup> of finds from excavations near Dover contains a detailed list of the weights found there in conjunction with a bronze balance, and a list of similar finds from other English sites. An object currently (1990) on display in the Yorkshire Museum, and described as a ninth century find from York, is a polyhedral weight of the type common in Islamic countries throughout the middle ages. The presence of alien weights such as this and the Byzantine ones mentioned above would seem to confirm, at the very least, that early medieval England was by no means isolated from international trading practices.

At first sight, the weights from these finds appear not to belong to a clearly-defined system, and it is possible that they were used by individual traders on a custom-and-practice basis. But the marks which appear on some of the weights, and the orderly progression within each set, would tend to indicate some degree of coherence and organisation. In 1923 R. A. Smith<sup>8</sup> suggested that several different weight systems might be

<sup>4</sup> For illustrations and details of the Gilton scales and weights see: B. Faussett, *Inventorium Sepulchrale* (London 1856); T. Sheppard and J.F. Musham, *Money Scales and Weights* (Reprinted by Spink, London, 1975), Fig. 7.

<sup>5</sup> C. Roach Smith, *Collectanea Antiqua*, vol. 3 part 4; Sheppard and Musham, Fig. 8.

<sup>6</sup> J. Brent, 'Account of the Society's Researches in the Anglo-Saxon Cemetery at Sarre' *Archaeologia Cantuana*, 6 (1866), 157-185; G. Baldwin Brown, *The Arts in Early*

*England*, vol. 4, (Murray, London, 1915), p. 417 and Plate xcvi.

<sup>7</sup> V.I. Evison, *Dover: Buckland Anglo-Saxon Cemetery*, (HMBC, London, 1987). See also: C. Scull, 'Scales and Weights in Early Anglo-Saxon England', *Archaeological J.* 147 (1990), 183-215.

<sup>8</sup> R.A. Smith, 'Early Anglo-Saxon Weights', *Antiquaries Journal*, 3 (1923), 122-129.

represented. Circumstantial evidence in support of this suggestion comes from two sources. First, there is some indication that gold and silver were weighed by different units, at least in later Anglo-Saxon times. Secondly, there is the analogy with the Akan gold-weights used in West Africa from the fourteenth to the nineteenth centuries.<sup>9</sup> There we find that different cultural and trading influences resulted in no less than four separate weight-systems being used concurrently, so that (genuine) accumulations of Akan gold-weights contain a bewildering spectrum of denominations. It may not be too fanciful to compare that experience with the situation in early Anglo-Saxon England, where the residual influence of the Romans mingled with the customs of various Teutonic settlers. In his analysis of the Kentish weights Smith proposed three units: the 'solidus' (which he took at about 67gr), the 'tremissis' (22gr, although the 20gr Merovingian standard of the triens might make more sense) and an 'Anglo-Saxon unit' of 48gr. The last is one-tenth of a Troy ounce, a point which has led to much speculation about the antiquity of the Troy-weight system. Of course, the more units we allow, the more likely it is that each object from an accumulation of weights will be 'approximately' a multiple of one of them. But, on the other hand, the presence on some of the objects of a number of punchmarks which corresponds closely to the alleged multiple is compelling. As with many aspects of the English coin-weight series, there is the exciting prospect that new finds may throw more light on the subject, and in particular the question of the existence of weights for checking a specific coin.

In the North, the Vikings also brought a tradition of weighing with them. Their scales frequently had a folding beam, and for weights they used small pieces of lead, as in the examples found at the Coppergate excavations in York.<sup>10</sup> Scales and weights of the same type are found throughout the Viking lands, and it appears that they were used for weighing specific amounts of silver, made up of coins, bits of coins, and all kinds of small pieces of metal. Again it is possible that some of the weights were intended for checking an individual coin, as suggested by the York archaeologists, but this is by no means certain.

It is worth remarking that the use of weights made of lead was the norm in England for many centuries; in fact, bronze weights of any kind are extremely rare until the fourteenth century, and there is no evidence of their widespread use until the fifteenth century. From pre-conquest times there are several lead objects which have some claim to be weights, among them some pieces cited by Smith<sup>11</sup> and Connor<sup>12</sup> as possible evidence for the use of the Troy-weight system. Most relevant to our present concern are objects which bear the impressions of coin dies, and perhaps the most famous of these is the object bearing the obverse and reverse impressions of a rare type (*BMC* 5) penny of Alfred the Great, which was found in 1841 during the digging of a new sewer in the vicinity of St Paul's Churchyard. No pennies from the actual dies used are known. The original report<sup>13</sup> of its finding exasperatingly fails to mention its weight. Miss Archibald gives it as 2489gr, suggesting that it may have deteriorated in the meantime<sup>14</sup>; Professor Connor gives the weight as 2515gr<sup>15</sup>. The presence of the coin impressions may simply indicate a trial striking of the dies, but the lumpy shape of the object (37×34×13mm) tends to refute this — one would rather expect a trial-piece to be a thin sheet of lead, as found at York, for

<sup>9</sup> T.F. Garrard, *Akan Weights and the Gold Trade*. (Longmans, London, 1980).

<sup>10</sup> R.A. Hall, *Notes on the Coppergate Slide Set* (York Archaeological Trust, 1981).

<sup>11</sup> See ref. 8, pp. 127–128.

<sup>12</sup> R.D. Connor, *The Weights and Measures of England* (Science Museum, London, 1987), p. 120. For a discussion of the numismatic evidence relating to the Troy-weight system see: P. Nightingale, 'The Evolution of Weight Standards and the Creation of New Monetary and Commercial

Links in Northern Europe from the Tenth Century to the Twelfth Century', *EcHR*, 38 (1985), 192–209, and other references given there.

<sup>13</sup> E.B. Price, *Gentleman's Magazine* 16 (New Series) 1841, pp. 263–265 and 498–499.

<sup>14</sup> M.M. Archibald, 'Anglo-Saxon and Norman Lead Objects with Official Coin Types', in *Aspects of Saxon and Norman London 2: Finds and Environmental Evidence*, edited by A.G. Vince (1991), pp. 326–346.

<sup>15</sup> Connor, pp. 108–109.

example.<sup>16</sup> Thus there is good reason to regard this as a weight of some kind, possibly for checking coin in bulk. Miss Pirie has suggested that the presence of the reverse die with (apparently) the name of a moneyer may indicate that it was used at the mint.<sup>17</sup> But it could also have been used for checking any bulk payment of coin. If the pound-of-account contained 240 pennies at that time (which is almost certainly true) and the weight represents half a pound-of-account, then the implied weight of a single penny works out at about 20.8gr, within the accepted weight-range for this type. The weight of the object is also close to half a Roman pound-of-weight, as pointed out by Dr Stewart.<sup>18</sup> The relationship between the pound-of-account and the pound-of-weight, and the magnitude of the latter, are matters about which there has been much debate, but little hard evidence.

There are two other lead objects of moderate size which may well have been used for weighing coin in bulk.<sup>19</sup> One of them, found at Thetford and bearing the impressions of a Thetford penny of Æthelred II, could be a mancus-weight. The word mancus is probably derived from the Arabic dinar *manqūsh*, a gold coin which circulated in parts of Western Europe from about 770.<sup>20</sup> The word occurs in a large number of Anglo-Saxon wills and charters from the period 800–1020, where it appears to represent a unit of weight for gold, somewhere in the range between 65gr (the weight of a dinar *manqūsh*) and 70gr (the classical solidus/nomisma). The extent to which these coins actually circulated in England is still unclear,<sup>21</sup> but the conjecture that they set the standard for weighing gold in the ninth and tenth centuries is almost beyond doubt. The documents indicate that it was the custom to express larger payments in mancus-weights of gold, but we can infer that an equivalent amount of silver would be equally acceptable. There is convincing evidence that thirty silver pence was the equivalent of a mancus, so that a 'mancus-worth' of silver would weigh in the range 600–720gr. The Thetford piece, at 691gr, may thus qualify as a weight for checking bulk payments of silver in mancus-equivalent units. Another roughly comparable example, from the time of Edward the Confessor, was found at Winchester. It weighs only 580gr, which is on the light side for thirty pennies, but not so light as to rule out that interpretation completely.

It is worth remarking that there is at least one extant reference to the use of lead weights to check payments in mancuses.<sup>22</sup> It occurs in an endorsement of a mortgage in 1018, in which the Bishop of Crediton declared that he had borrowed 'thirty mancuses of gold by lead weight' from one Beorhtnoth. The mancus itself appears to have been abolished as a unit for weighing gold by the reforms of Cnut in the 1020s, but there is no reason to suppose that the general use of weights made of lead was affected by these reforms. However, by the end of the eleventh century the thirty-pence unit for silver had been replaced by the mark of 160 pence and its binary subdivisions.<sup>23</sup>

### *Weighing pennies*

Because the silver penny was, almost uniquely, the circulating coin of England for several

<sup>16</sup> E.J.E. Pirie, *Post-Roman Coins from York Excavations 1971–81* (York Archaeological Trust, 1986), Plate viii.

<sup>17</sup> Pirie, p. 38.

<sup>18</sup> B.H.I.H. Stewart, 'A lead striking of William II's last coin type', *NC* 138, (1978), 185–7.

<sup>19</sup> Archibald, ref. 14, nos. 13 and 17.

<sup>20</sup> C.S.S. Lyon, 'Historical Problems of Anglo-Saxon Coinage – Denominations and Weights', *BNJ* 38 (1969), 204–222; P. Spufford, *Money and its Use in Medieval Europe* (Cambridge, 1988), p. 50; P. Nightingale, 'The Ora, the Mark, and the Mancus', *NC* 143 (1983), 248–257 and 144 (1984), 234–248.

<sup>21</sup> For the occurrence of solidi in pre-conquest England, see: I. Stewart, 'A solidus from Yorkshire', *BNJ* 56 (1986), 182–3, and the references given there. For dinars see: M.A.S. Blackburn and M.J. Bonser, 'Single finds of Anglo-Saxon and Norman coins – 3', *BNJ* 57 (1987), item 124 and the references given there.

<sup>22</sup> A.S. Napier and W.H. Stevenson, *The Crawford Collection of Early Charters and Documents* (Oxford, 1895), p. 9 and p. 77.

<sup>23</sup> See the papers by Pamela Nightingale cited in footnotes 12 and 20.

centuries we might expect to find some evidence of attempts to provide the means to check its weight. As we have seen, the general evidence suggests that weights for this purpose would be made of lead. But small lead objects weighing about 22.5 grains are not particularly durable, and even if they survive the centuries they are not wildly attractive to numismatists. Thus our current knowledge of this topic is, in many respects, unsatisfactory. The details recorded here may help numismatists to recognise relevant material when it comes before them.

We should begin by remarking that weights for checking multiples of the penny may also occur. For amounts like 120 pence (half a pound-of-account) and thirty pence (the mancus-equivalent), this possibility has already been mentioned above. From the later part of the eleventh century, and throughout most of the twelfth and thirteenth centuries, we might expect to find weights for the Tower mark of silver (160 pence = 3600gr), and the half-mark and quarter-mark. Among the bewildering variety of lead weights which come to light, there are indeed some which seem to fit this prescription. A typical example is a square weight (**pl. 14, 1**) weighing almost exactly 3600 gr. But until a number of such pieces have been accurately dated by context, and the typology of their designs has been studied more closely, we cannot be positive about identifying them.

Additionally, we can envisage the need for checking smaller multiples of the penny, such as 2d or 3d, because these would represent the price of a fairly common object, or the fee for some simple service. A person who received such payments regularly might well need to check coins by weight, and if that person acted in an official capacity, the necessary weights might be provided on an official basis.

Some evidence of weights of this kind is beginning to accumulate, but the picture is complicated by the existence of objects which might be weights but probably are not. For example, a group of small leaden objects stamped with coin dies have been tentatively identified as receipts for customs payments.<sup>24</sup> Of course, it is easy to envisage other possibilities; they may be forgeries, trial-pieces, tokens, or seals, for example,<sup>25</sup> or they may even be weights, albeit rather haphazard ones. It is inevitable that more examples of such objects will be found, and details of them may help to clarify their function.

The first documentary confirmation of the suggestion that weights for checking pennies might be provided officially comes from an entry in the Patent Roll for 1205 (6 John, mem. 7d):

... there was issued from the mint a penny poise wanting one-eighth of a penny, to be delivered to anyone who would have it, to be used until Easter in the next year.

This extract was first noted by Ruding<sup>26</sup> and it has subsequently been quoted by most writers on coin-weights. Its significance is theoretical, rather than practical. No examples of the penny poise of King John are known, which is perhaps not surprising, given the limited period allowed for its use. But the extract does provide firm evidence that the notion of weighing the pennies used in trade was a familiar one. If officialdom could be moved to produce such weights, it is likely that some people would use unofficial 'penny poises' in order to safeguard themselves against clipped and light coin.

From a little later in the thirteenth century we have a possible candidate for an official penny poise.<sup>27</sup> It is a small thick silver object (**pl. 14, 2**) struck with coin-dies of the type

<sup>24</sup> Archibald, ref. 14.

<sup>25</sup> For earlier discussion of these objects see Stewart (ref. 18) and R.H.M. Dolley, 'A piedfort lead trial-piece of Edward the Confessor' *BNJ* 27 (1953), 175-8, plate vi.

<sup>26</sup> R. Ruding, *Annals of the Coinage*, (London, 1840), p.

178. See also: S. Smith, *Pipe Roll for VI John*, Pipe Roll Society, 1941.

<sup>27</sup> This object is in a private collection and was first published in the *Sacra Moneta* catalogue, April 1990.

used for the short-cross Class 8b2 pennies of Henry III. The weight is 20.5gr, suggesting that some allowance was made for wear. Of course, it is possible to argue that this is not a weight for a silver penny, but no other convincing explanation of its purpose has yet been forthcoming.

By the end of the thirteenth century the problem of clipping was just one of several factors which stimulated a growing concern with weighing coin, either singly or in bulk. By this time the volume of trade was such that substantial payments were often required, and the silver penny was the only generally available medium. Thus, it seems inevitable that the larger payments would often be checked by weighing rather than by counting. The new sterling coinage of 1279–80 totally replaced the older coins in circulation, and provided a uniform medium which would allow checking by weight. By this time too some steps had been taken to regulate the weights and measures used in trade,<sup>28</sup> although malpractice was still the rule rather than the exception.

The influx of inferior foreign imitations of the sterling penny was perhaps the most pressing problem affecting the coinage, and this was probably the stimulus for the promulgation of the document known as the *Statuta de Moneta*. This set of Statutes concerning Money is usually assigned to 1292, although it may have originally been issued separately in parts at various dates. For our purposes the most interesting article is the following.

And because that many of the poor and rich people cannot know the light and clipped money [from the other], now it is ordained that hereafter he which ought to receive or pay money shall receive and pay the same by weight of v.s. of even weight by the tumbrel, delivered by the Warden of the exchange marked with the King's mark as the measures are; and it shall be lawful to any man to pierce the money which shall not weigh [pass] the tumbrel; and the money of any other coin than of the coin of the King of England, Ireland, and Scotland, the weight shall be as well delivered and marked by the Warden of the Exchange, as the tumbrel.

The modern English text given here is the version from the nineteenth-century publication of the Statutes of the Realm.<sup>29</sup> Ruding's gloss<sup>30</sup> is slightly different, but the main points are clear. Bulk payments of money are reckoned in amounts of five shillings (60 pence), and must be checked with a weight 'marked with the King's mark'. No weights corresponding exactly to this description are known, but there are some which might be relevant. An unusually fine round weight (pl. 14, 3), with a cross-floretty motif, weighs 1334gr. This is almost exactly correct for five shillings in pence at the post-1279 standard of 243 to the Tower pound. ( $5400/243 \times 60 = 1333.3$ .)

Another intriguing question arising from the *Statuta de Moneta* concerns the *tumbrel*, and here we can be rather more confident about the identification of the corresponding artefacts. The word was commonly used to denote a small two-wheeled farm cart, which could be tipped up to empty its contents. Hence it came to denote a simple kind of balance to weigh coin: if the coin is of good weight then the beam tips, if not it remains horizontal. Such balances are familiar to us mainly because of their widespread use for checking sovereigns in the nineteenth century, but the idea seems to have originated in the Byzantine Empire. Possibly the returning crusaders brought it home with them, because in recent years a number of tumbrels, apparently of thirteenth–fourteenth century date, have been discovered in England.<sup>31</sup> The tumbrels which have been found so far are small

<sup>28</sup> For some relevant documents, see the Appendices to Connor's book (ref. 12).

<sup>29</sup> *Statutes of the Realm* (HMSO, London 1810–28), vol. 1, p. 219.

<sup>30</sup> Ruding, p. 198.

<sup>31</sup> For discoveries of tumbrels in England see: N.J.

Mayhew, 'A tumbrel in the Ashmolean Museum', *Antiquaries Journal*, 55 (1975), 394–396 and Plate LXXXI; A. MacGregor, 'Coin balances in the Ashmolean Museum', *Antiquaries Journal*, 65 (1985), 439–445; C. Marshall, 'The medieval tumbrel', *Treasure Hunting*, March 1987, June 1987, January 1988.

instruments which could be folded flat (pl. 14, 4) in order to fit easily into a purse or pocket, and they were used to check the weight of a single silver penny (pl. 14, 5). Their relationship to the procedure for weighing coin in bulk, as described in the passage quoted above, is not entirely clear. However, there is a further reference in the Statutes to the use of the tumbrel, and this may be relevant to the weighing of single pence. It occurs in the passage describing the duties of the official appointed to guard against the importation of inferior foreign coin.<sup>32</sup>

The Viewer and Warden of the Money which shall come from beyond the sea, when he shall have any, he shall have regard unto the age thereof, and shall weigh the same. And if he find of the new money that the pound weigh not xx s. by the number of iiii pence, then he shall have regard by the tumbrel where the default shall be [and shall pierce the light money] . . .

This appears to mean that if a pound-of-account in the 'new money' (that is, 240 pence) weighs less than the full weight of 236 good pence, then each coin is to be weighed individually by the tumbrel and the bad ones destroyed.

Our general picture of the circulation of silver pennies in the fourteenth century points very strongly to the belief that several methods of checking the weight of a single penny, or small multiples thereof, would be in use. In addition to the tumbrel we might expect that ordinary scales were used for this purpose, and that would imply the existence of suitable weights. There are several objects which may be relevant. Dieudonné<sup>33</sup> described some *poids d'esterlin* which he believed to be of French manufacture and intended for weighing a pennyweight (24gr) of silver rather than for checking the weight of a penny. Some of the pieces he illustrated are clearly French, but it is possible that some are English, and some may be true coin-weights. A rectangular lead object (pl. 14, 6) found beside the Thames in a fourteenth century context has all the appearance of a weight for checking a payment of 2d. The 'sterling head' is clearly a mark indicating some authority on the part of the issuer or user, and the weight of just under 37gr would place it around the middle of the century. Another object which may be relevant is the triangular object in copper-alloy, also with a sterling head, first published by Dieudonné as a weight for the French franc à pied of Charles V.<sup>34</sup> In 1937 D.F. Allen reported that an example had recently appeared in the British Museum, and he suggested that it could be an early weight for a half-noble of 60gr.<sup>35</sup> The fact that only three of these very distinctive objects were known at the time of Allen's paper, and no more have appeared in the last fifty years, would seem to indicate that they were intended for a very specific purpose. In the light of all the circumstantial evidence, perhaps we should consider the possibility that they are officially-issued weights for checking a payment of 3d.

#### *Contemporary weights for the noble coinage*

The revival of gold coinage in Western Europe brought with it a new and more important role for coin-weights. Dieudonné suggested 1330 as the approximate date of the first coin-weights of this era,<sup>36</sup> and there is no reason to suppose that he was far wrong on this point. It appears that by the late fourteenth century a range of well-made bronze weights was in use for checking coins in continental Europe. For this reason alone we might expect that the instigation, in 1344, of a gold coinage in England would be swiftly followed by a native issue of coin-weights for checking it. But there is surprisingly little relevant material,

<sup>32</sup> *Statutes*, p. 219.

<sup>33</sup> Dieudonné, p. 10, pp. 112–113, Plate VI: 32–37.

<sup>34</sup> Dieudonné, p. 92, Plate 1:28.

<sup>35</sup> D.F. Allen, 'A fourteenth-century coin weight', *BNJ*

(1934–7), 189–190. The 'recent' appearance of the piece is to be interpreted in the BM context: in fact the piece was donated in the nineteenth century.

<sup>36</sup> Dieudonné, p. 5.

especially for the first effective issue of English gold, the 'heavy' noble coinage from 1344 to 1412.

If we discount (as a gold-weight, at least) the triangular object mentioned above, then the earliest pieces are a scarce group of rectangular, uniface, lead weights, bearing a simple image of a ship. Three examples are illustrated here. The first (pl. 14, 7) weighs 126gr and so it could be associated with the period 1346–51 when the nobles were issued at the weight of just over 128gr. The second (pl. 14, 8) weighs 57gr and is probably a weight for the half-noble at the standard of 60gr from 1351–1412. The third (pl. 14, 9) weighs 105gr and is probably intended for the 'light' noble of 108gr issued from 1412 onwards. The provenances cannot be confirmed as the pieces were acquired at second- or third-hand through the trade. A few other lead pieces of this kind are known, and it is likely that more will be recognised now that their existence has been pointed out. The identification of these pieces is not certain, and it is possible that some of them were intended for the ryal coinage of 120gr from 1465 onwards. But the design of those illustrated here is typical of later bronze weights whose association with the noble, rather than the ryal, is beyond doubt.

After so many centuries of 'uncertain' pieces, it is something of a relief to arrive at an issue for which both documentary evidence and a good number of specimens are in existence. In 1421 Parliament persuaded the king to agree to several measures designed to improve the unsatisfactory state of the gold coinage. A statute (9 Henry V, c.11) enacted that in future gold should be received in payment 'by the King's weight'. Several ancillary measures were authorised, among them a statute (9 Henry V, st.2 c.7) stating:

That the King do to be ordained good and just weights of the noble, half-noble and farthing of gold, with the rates necessary to the same for every city, borough and market town of the realm, to be delivered by the chancellor of England to them that will have them, to the intent that they be not deceived by false counterfeiters, and them that use false weight, to the deceit of the people.

A document summarised in the Calendar of the Patent Rolls gives the names of those commissioned to undertake the necessary work.<sup>37</sup> They were Bartholomew Goldbeter (described as 'goldsmyth', although he was already Master of the Mint, according to Craig),<sup>38</sup> John Paddesley (goldsmyth, afterwards Master), John Bernes (goldsmyth), John Derlyngton (Assayer at the Mint), and Gisbright Vanbranburgh ('the King's sculptor within the Tower'). They were urged to use all possible speed, and to take any persons necessary for the work, with power of imprisonment. A couple of months later the commission was repeated,<sup>39</sup> with the additional instruction that they were to make five punches with the impression of a crown and five with the impression of a fleur-de-lis, and each weight was to be stamped with both devices.

Weights with the crown and fleur-de-lis marks are known for the noble, half-noble and quarter-noble (pl. 15, 10–15). They are well-made and well-rounded, with the two marks enclosed in a border of one or more incised circles. The metal is a copper alloy. There is some variability in the details of the punchmarks and the circular border, but the crown is rendered in a very characteristic way. In particular, the four dots which represent the decoration on the upper rim of the crown are a constant feature. There is also a specimen in lead (pl. 15, 16) which, although rather light, bears the characteristic marks. These weights must be regarded as the earliest authenticated coin-weights of the English series.

In 1423, following the accession of Henry VI, John Bernes was appointed to make the weights 'to the exclusion of all other persons'.<sup>40</sup> Later in the same year a new commission

<sup>37</sup> *Calendar of the Patent Rolls* (henceforth abbreviated as *CPR*), *Henry V 1416–1422* (HMSO, London, 1901), p. 420.

<sup>38</sup> Craig, p. 85. Possibly the confusion is due to the style in which the dates are given. *CPR* seems to use the new style,

with the year starting in January.

<sup>39</sup> *CPR Henry V*, p. 422.

<sup>40</sup> *CPR Henry VI 1422–1429* (HMSO, London, 1911), p. 65.



was granted; the summary from the Calendar of the Patent Rolls is worth giving in full.<sup>41</sup>

Appointment, by assent of the council, of John Bernes of London, 'goldsmith', south of Trent, and Robert Curteys of York, 'mercier' north of Trent, to make steelyards (*stateras*) and good and lawful weights of the noble, half noble and farthing of gold with 'les rates' necessary thereto, and to mark them with a fleur de lys and a crown, to be graven in the manner ordained in the Parliament held at Westminster in 9 Henry V. Any other persons found making such steelyards or weights will be subject to a penalty ordained by the council, but the said John and Robert are not to take more than 4d for each pair of steelyards, and 2d for each weight of the noble, half noble and farthing of gold with 'les rates' necessary thereto.

The appointment of Curteys was probably a consequence of the operation of the mint at York in 1422–3, when about £40,000 worth of gold was coined.<sup>42</sup> The reference to steelyards is a minor difficulty, but is easily explained. The word *statera*<sup>43</sup> was used for any kind of weighing instrument and so it may be translated as 'steelyard' rather than 'balance'. But there are several reasons for thinking that 'balance' is meant here. First, a steelyard would not require the use of weights, since weighing is done by moving a counterpoise along a graduated scale. Secondly, the weighing of money and bullion was traditionally done with a balance. Finally, the reference in the document itself to a 'pair of steelyards' must surely indicate that a pair of scales (that is a balance) was meant.

The prices assigned to the scales and weights may be compared with some contemporary records.<sup>44</sup> In 1421 a 'pair of scales for weighing gold' was bought at Heyford for 9d, and a 'pair of stateres (*sic*) for weighing gold' was bought at Oxford for the same price. In 1424 a 'set of weights' was bought at Cambridge for 9d also. These records may quite possibly refer to the scales and weights of the crown-and-lis issue.

The last point of interest in the commission is the reference to 'les rates'. The words seem to refer to objects which were to be made and sold with the coin-weights, and the most likely interpretation is that they were grain-weights: that is, small pieces of thin metal used to assess the deficiency of light coin. The words thus mean 'less rates'. If this is so, there is the possibility that examples, stamped with the crown and lis, may turn up, either out of the ground or from some museum repository.

We do not know for how long the production of the crown-and-lis type continued. Craig says that William Rus, Master of the Mint 1431–34, also made coin-weights for the public,<sup>45</sup> and it is reasonable to suppose that his weights were of this type. The type is scarce, but not excessively so, and in recent years examples have been found with metal detectors in several parts of the country. Of course, only a small minority of the people would use gold coins regularly at this time. The weights benefitted the wealthy merchant who could check the coins offered to him, but doubtless it would be all too easy for him to pass on light coins to unsuspecting 'occasional' users, who had no scales or weights. The work of providing the weights cannot have been very profitable, at least after the initial demand had been met.

In 1465 the new coinage of rials (rose-nobles) of 120gr and angels of 80gr began. The old nobles of 108gr were not withdrawn, there being (for a time) considerable confusion as to what value they should properly represent.<sup>46</sup> The correct value for a coin of 108gr (given that a ryal of 120gr passed for ten shillings) was nine shillings, but there is no evidence that this was proclaimed. It is very probable that many people were persuaded to part with nobles for a lesser sum, on the grounds that the coins were now only bullion at the Mint

<sup>41</sup> *CPR Henry VI*, p. 140.

<sup>42</sup> C. Oman, *The Coinage of England*, (Oxford, 1931), p. 210.

<sup>43</sup> For a discussion of terminology see: J. A. Kingdon, *The Strife of the Scales*, (London, 1904). Not all the conclusions

reached therein are reliable.

<sup>44</sup> J. T. Rogers, *History of Agriculture and Prices*, (Oxford, 1882), vol. 3, pp. 548–549.

<sup>45</sup> Craig, p. 87.

<sup>46</sup> *CPR Edward IV*, pp. 149–150.

price for gold (untrue), or that eight shillings and sixpence is greater than the old value of six shillings and eightpence (true, but misleading).

There is no known record of an official commission to produce weights for the new ryaIs and angels. However, some weights have come to light which resemble in style the crown-and-lis type, but with a rose in place of the fleur-de-lis. One well-preserved example weighs 117gr and it is difficult to resist the temptation of saying that it is a coin-weight for the ryal, probably produced soon after 1465. I have also seen a possible angel-weight of this type, bearing a crown and what may be a Lombardic letter A. But the production of a truly 'popular' issue of coin-weights awaited the expansion of the domestic economy in early Tudor times.

### *The early Tudor period*

In 1491 Parliament enacted a petition (7 Henry VII c.3) seeking to bring into effect the pledge of Magna Carta that 'one measure and one weight should be throughout all this realm of England'. The eventual result was another Act (11 Henry VII c.4, 1495) which announced that the king had caused to be made standard weights and measures, and these were to be distributed to major towns and boroughs. The weights and measures used in ordinary trade were to be compared with the local standards, and stamped with a crowned H if correct. Unfortunately, the first issue of standards proved to be defective, and a further Act (12 Henry VII c.5, 1496) proclaimed that they were to be destroyed and replaced by new sets. A few of these standards are still in existence,<sup>47</sup> and examples of trade weights stamped with a Lombardic H surmounted by a crown turn up from time to time.<sup>48</sup> The smaller trade weights, such as the Avoirdupois eighth-ounce (54gr), may have been used for weighing coins (specifically the old half-noble), but they were not made exclusively for that purpose.

It seems likely that the general concern with weights and measures evident at this time resulted in a renewed demand for coin-weights. An added stimulus was the increasing complexity of the circulating gold coin: not only were there old nobles (colloquially known as henry-nobles), new ryaIs (rose-nobles), and new angels, but foreign coin too was becoming common. The Cely Papers provide conclusive documentary evidence that this was so in Calais by 1482,<sup>49</sup> and the situation in other major centres of commerce must have been very similar.<sup>50</sup>

The weights which answered this demand were rather different from the official issue of 1421 and thereafter. The fact that there is no documentary evidence for them is just one reason for supposing that they were produced unofficially. Like the crown-and-lis type they are round and made from a copper-alloy, but the details of the design and construction are new. Most obviously, the design is a crude representation of the relevant coin. For example, the weights for the ryal and its subdivisions show a crowned figure, whose head appears above a shield, standing in a ship with a flag bearing the letter E, and with a rose on the side of the ship. This corresponds to the main features of the obverse of the ryaIs of Edward IV. There are several distinctive varieties of the design (pl. 15, 17–26), which suggests that more than one unofficial maker was involved. Almost certainly the goldsmiths played some part in the making and selling of these weights, but no documentary evidence for their involvement has yet come to light.<sup>51</sup> The construction is

<sup>47</sup> Connor, Fig. 48.

<sup>48</sup> N.L. Biggs, *NCirc*, 97 (1989), 81–82; C. Comber, *ibid.* 223–4.

<sup>49</sup> H.E. Malden (ed.), *The Cely Papers*, (Longmans, London, 1900).

<sup>50</sup> An extensive discussion of the economic circumstances affecting the circulating medium, and a useful list of the

principal coins is given by Spufford, ref. 20.

<sup>51</sup> The authorised history by T.F. Reddaway, *The Early History of the Goldsmiths Company 1327–1509* (London, 1975), contains some useful information about weights (not coin-weights), but rather naively assumes that the goldsmiths were models of probity, whose only concern was to safeguard the public from the evils of false weighing.

usually rather rough, there being little effort to round off the flan; indeed there is almost always a small straight segment on the edge, as if the flans had been cut from a straight-edged strip of material. The weights for the half-ryal and quarter-ryal are from the same dies as for the unit.

The coins for which weights of this general style are commonly found are listed in the following table.

<i>Coin</i>	<i>Full weight of coin</i>	<i>Coin Issued</i>
Ryal	120gr	1465-
Half-ryal	60gr	1465-
Quarter-ryal	30gr	1465-
Angel	80gr	1465-
Half-angel	40gr	1465-
Noble	108gr	1412-1464
Half-noble	54gr	1412-1464
Quarter-noble	27gr	1412-1464
French crown	52gr	1388-
French half-crown	26gr	1388-
Ducat/Florin	54gr	1252-

The ryal-weights have already been described. The angel-weights bear the famous design of an angel slaying a dragon. Here too there are several distinctive types (pl. 15, 27-36), and on most of them the details conform fairly closely to the design of the angel coins issued after 1495; in particular the angel usually appears to have both his feet on the dragon. A classification of the types may be attempted in terms of the configuration of the angel's legs, which is always curious and in some cases distinctly unangelic. The design of the weights for the old noble (pl. 15, 37-42) is worthy of comment for a different reason. As will be seen, there is a ship, often with a leopard and a fleur-de-lis, but no crowned figure or shield, despite the fact that the coin carried the same design as the ryal, lacking only the rose. The comparative lack of detail confirms that the weights were produced when the noble was no longer part of the active coinage, and therefore regarded as of subsidiary importance relative to the ryal and angel. This point bears repetition, because a cardinal error among early students of coin-weights was to suppose that the weights were always contemporary with the relevant coins. In fact weights for the henry-noble were made in England as late as 1588, and even later on the continent.

There are two major groups of foreign coins for which weights of the crude representational style are found. The first group comprises the various issues of the French crown (ecu), the weights for which show a simple crowned shield bearing three fleurs-de-lis, flanked by two small crowned lis. Both ecu-weights and half-ecu weights are known (pl. 15, 43-44). They are generally on the light side, around 48-49gr for the ecu, perhaps indicating that only the scruffier coins were exported from France to England. The second group comprises the many types of ducat and florin produced in the fourteenth and fifteenth centuries, and weighing about 54gr. Dr Spufford<sup>52</sup> tells us that the word *ducat* was used as a

<sup>52</sup> Spufford, p. 321.

generic term for such coins by this time, and so it is perhaps slightly surprising that the design of the weights is a large lis, representing the florin. There are several varieties known (pl. 15, 45–47). Weights for other foreign coins, apparently in the general style of the English weights of this period, occasionally turn up. Examples for the Burgundian rider and postulat florin are illustrated (pl. 15, 48–49). In addition, weights of foreign manufacture, especially Flemish, are sometimes found in the Thames and elsewhere. Most of these were lost by visiting merchants, but some may also have been imported for use by the natives. Indeed there is evidence<sup>53</sup> that ‘troy weights’ were being imported as early as 1390, and in 1507 they were listed in the Book of Rates for the port of London.<sup>54</sup> Because there is no documentary evidence for the whole group of representational weights discussed above, we must bear in mind the remote possibility that all of them were imported too, but the circumstantial evidence makes this very unlikely.

As one might expect, the weights for ryals and angels are the most frequently encountered among the representational types. Examples have been found quite frequently with metal detectors, and occasionally in archaeological excavations.<sup>55</sup> Perhaps the most interesting find was made at Roche Abbey in 1928, as reported by Rigold.<sup>56</sup> It comprises a brass box containing a pair of folding scales and two weights of the representational type. The weights are for the angel and the quarter-ryal, the latter being mis-identified by Rigold. Apparently, the box as found also contained a grain-weight, probably similar to those referred to in the documents of the early 1420s as ‘les rates’, but this has since been lost. This find must date from around 1500, and it is, somewhat surprisingly, the only known example in which late medieval coin-weights and scales have been found together in England.<sup>57</sup>

All the evidence points to the fact that the representational weights were in widespread use for a considerable period of time. However, as we shall see, it seems that their manufacture ceased rather abruptly around 1526.

### *Doubt and decline*

In May 1522 the fact that foreign gold was circulating in England was recognised by an official proclamation which fixed the values of certain coins.<sup>58</sup> Ducats were valued at 4s 6d, French crowns *au soleil* at 4s 4d, and other crowns at 4s. Later in the same year a similar proclamation repeated these valuations and added some other coins;<sup>59</sup> among them was a florin of base gold valued at 3s 3d, which must have been the florin of the Rhine, rather less than a ducat in weight and only 0.79 fine.<sup>60</sup> According to Feavearyear these measures were intended simply for the convenience of continental visitors who accompanied Charles V on a visit to England to negotiate an alliance against France.<sup>61</sup> But it seems likely that more devious diplomatic motives were also involved. Unfortunately, the implications of official recognition for foreign coin, and the need for valuations compatible with the gold/silver ratio in other countries, were not properly worked out. Indeed, these matters continued to trouble the authorities for the next two centuries.

The official values for foreign coins were repeated in two proclamations issued in 1525.<sup>62</sup>

<sup>53</sup> L.F. Salzman, *English Trade in the Middle Ages*, (Oxford, 1931), p. 50.

<sup>54</sup> N.S.B. Gras, *The Early English Customs System* (Harvard, 1918), p. 705.

<sup>55</sup> Pirie, Catalogue, No. 165, p. 64 and Plate XV.

<sup>56</sup> S.E. Rigold, ‘A medieval coin-balance from Roche Abbey, Yorkshire’, *Antiquaries Journal* 58 (1978), 371–4.

<sup>57</sup> A folding scale-beam similar to the Roche Abbey one has been found in Norwich: M. Atkin and S. Margeson, *Life on a Medieval Street* (Norwich 1985), Fig. 26 (wrongly

captioned as seventeenth century).

<sup>58</sup> P.L. Hughes and J.F. Larkin, *Tudor Royal Proclamations* (Yale University Press, 3 vols, 1964–69), number 88. Henceforth referred to as TRP 88.

<sup>59</sup> TRP 95.

<sup>60</sup> Spufford, p. 320.

<sup>61</sup> A. Feavearyear, *The Pound Sterling* (2nd edn., London, 1963), p. 48.

<sup>62</sup> TRP 102, 103.

But in 1526 it became clear that much gold was being exported to the continent, because it was more highly valued there in terms of silver. On 22 August 1526 the values of all current gold coins (including the foreign ones) were raised, the ryal becoming 11s, for example.<sup>63</sup> The French crown *au soleil* was raised to 4s 6d, and an English crown of the same value, 'the crown of the rose', was promised. As we know, the crown of the rose was a short-lived experiment. On 5 November of the same year the values were raised again,<sup>64</sup> the ryal becoming 11s 3d, and all foreign gold (apart from the French crowns) was declared to be no longer current 'except as the payer and receiver shall agree'. At the same time, a new gold coin, the crown of the double rose (57.3gr of 22 carat gold, valued at 5s) was authorized.

Large numbers of crowns of the double rose were minted in the period 1526–43, but it is significant that no weights for them in the round, uniface, representational style are known. Indeed, English weights of any style for the crown of the double rose are so rare as to be anomalous. For this reason alone, it seems appropriate to suggest that 1526 marks the end of the first period of coin-weight production in England. Dr Challis points to a sea-change in the production of gold coin at that time,<sup>65</sup> but it is nevertheless something of a mystery to find so great a discontinuity in the coin-weight record. It is possible that the production of unofficial weights was actually prohibited, although there is no documentary evidence for this. The debasement of the gold coinage in the later years of Henry VIII is another factor to be considered, since it is hard to believe that the production of coin-weights was officially encouraged at that time.

Of course, merchants involved in international trade continued to use scales and weights. The papers of the Johnson family are probably typical for the period around 1550, and they contain several references to gold-weights and scales.<sup>66</sup> In one letter Otwell Johnson asks his brother John to buy for him 'a small pile and a balance' in Flanders. Another letter refers to gold-weights and a touchstone, and another refers to 'two balances and a pile'. The weights referred to here may have been of a newer style, distinguished by being square instead of round. We know that, in the first half of the sixteenth century, continental scalemakers began to produce square weights and distinctive wooden boxes for them, but the reason for the change of shape is not clear. Although square weights fit more neatly into boxes, it is easier to make round recesses in a block of wood than square ones, so the change was not occasioned totally by practical considerations. Many of these square weights were imported into England in the mid-sixteenth century, as may be seen from the London Port Book<sup>67</sup> of 1567/8, which contains numerous records of the importation of weights and scales. In particular, the goldsmith Nicholas Spering is named as the importer of gold-weights on at least nine occasions, all of them relating to ships coming from Antwerp.

A few square weights dating from the earlier part of the sixteenth century appear to belong to the English series. The identification is tentative, partly because most early square weights have a blank reverse, distinctive signs like the 'hand' of Antwerp not coming into general use until the latter part of the century. But there are a few square weights which appear to be struck from dies also used to strike the round weights of the representational type. For example, there is a square angel weight (pl. 15, 50) from the same die as a variety of the earlier (round) angel and half-angel weights (27 and 28). Other examples are for the half-ryal and quarter-ryal (pl. 15, 51–52). Some of these transitional square weights are made of yellowish brass rather than the reddish copper-alloy used for the earlier weights.

<sup>63</sup> TRP 111.

<sup>64</sup> TRP 112.

<sup>65</sup> C.E. Challis, *The Tudor Coinage* (Manchester, 1978), p. 221.

<sup>66</sup> B. Winchester, *Tudor Family Portrait* (Cape, London, 1955), p. 210.

<sup>67</sup> B. Dietz (ed.), *The Port and Trade of Early Elizabethan London* (London, 1972).

With the re-introduction of a sound coinage under Mary and Elizabeth, it might be expected that wealthy people in general (as opposed to merchants in particular) would, once again, acquire the habit of weighing coins. Indeed, in 1556 a proclamation exhorted the people to check their gold coins 'by weight, or know by other means the goodness thereof'.<sup>68</sup> But the natural reluctance of people to spend money on scales and weights was a great obstacle: usually the owner of a gold coin was quite content to be able to pass it on to another, equally uninformed, person at the face value, without worrying about the weight and fineness. The lack of official standards was another problem. In fact, it proved to be much more difficult to establish a sound system of weights for trade in general than it had been to reform the coinage. The story of the repeated attempts to provide official standard weights in Elizabeth's time is admirably told by Connor.<sup>69</sup> The problem was not adequately resolved until 1587–8, when satisfactory weight-standards were issued and the next era of coin-weight production in England began, albeit rather slowly. Thus all the evidence points to the conclusion that, for most of the sixteenth century (specifically 1526–88), the number of coin-weights produced in England was very small, and the demand was met almost entirely by imported weights.

## KEY TO THE PLATES

For each coin-weight the denomination is followed by the weight in grains, the size in millimetres, and a brief note of any supplementary information. In the plates all items are shown at their actual size. All weights except number 2 are uniface.

1.	Tower mark?	3600	45 × 45	Found in Essex
2.	Penny?	20	12	Silver
3.	60 pence?	1334	43	
6.	2 pence?	37	15 × 9	Pewter
7.	Noble	126	18	
8.	Half-noble	57	12	Pewter
9.	Noble	105	13	
10.	Noble	106	20	
11.	Half-noble	52	14	
12.	Quarter-noble	26	12	
13.	Noble	96	18	
14.	Half-noble	52	13	
15.	Quarter-noble	25	11	
16.	Half-noble	47	16	Lead
17.	Ryal	114	16	
18.	Half-ryal	55	14	Same die as 17
19.	Ryal	111	18	
20.	Half-ryal	52	14	Same die as 19
21.	Ryal	107	17	
22.	Half-ryal	56	16	Same die as 21
23.	Ryal	115	17	
24.	Ryal	116	17	
25.	Half-ryal	56	15	Broad sword and long hair
26.	Quarter-ryal	28	12	
27.	Angel	73	15	
28.	Half-angel	36	13	Same die as 27
29.	Angel	77	15	
30.	Half-angel	32	11	Same die as 29
31.	Angel	76	15	
32.	Half-angel	34	13	Same die as 31
33.	Angel	75	17	

<sup>68</sup> TRP 427.

<sup>69</sup> Connor, pp. 241–243.

34.	Angel	78	17	
35.	Angel	77	15	
36.	Angel	75	18	
37.	Noble	102	17	
38.	Noble	98	17	
39.	Half-noble	51	16	
40.	Noble	98	17	Very basic design
41.	Half-noble	49	13	Very basic design
42.	Quarter-noble	26	11	Nobles and halves from the same die known
43.	French crown	48	14	
44.	Half-crown	24	11	
45.	Ducat	52	14	
46.	Ducat	52	14	
47.	Ducat	52	13	
48.	Rider	53	15	
49.	Postulat?	44	14	
50.	Angel	73	16	Same die as 27 and 28
51.	Half-ryal	56	14	Same die as 25
52.	Quarter-ryal	26	12	Same die as 19 and 20



1



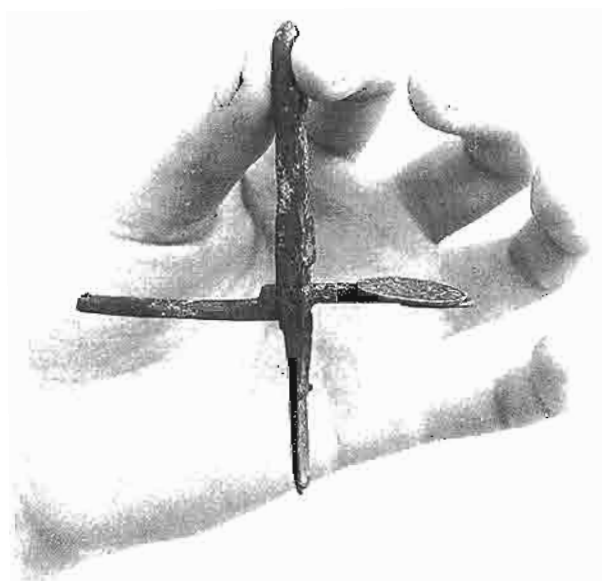
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3



4



5



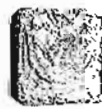
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7



8



9

BIGGS: COIN WEIGHTS IN ENGLAND (1)



