THE MILLED COINAGE OF ELIZABETH I

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Introduction

THIS paper describes a detailed study of the coins produced by Eloy Mestrelle's mill at the Tower of London between 1560 and 1571. We have used the information obtained from an examination of the coins to fill out the story of Eloy and his machinery that is given by the surviving documents.

There have been a number of previous studies of this coinage. Peter Sanders was one of the first to provide a listing of the silver coins[1] and more recently one of us (DGB) has published photographs of the principal types.[2] The meagre documentary evidence relating to this coinage has been chronicled by Ruding,[3] Symonds,[4] Craig,[5] Goldman[6] and most recently by Challis.[7] Hocking[8] and Challis have given accounts of what little it known of the machinery used.

This study first summarises the history of Mestrelle and his mill as found in the documents and then describes our die analysis based on an examination of enlarged photographs of 637 coins. We combine these two to propose a classification for the coinage in Appendix 2.

Mestrelle and the Milled Coinage of Elizabeth I

Queen Elizabeth I succeeded her sister Mary I as queen of England and Ireland in November 1558. On 31 December 1558 she signed a commission to Sir Edmund Peckham as high treasurer of the mint to produce gold and silver coins of the same denominations and standards as those of her sister, differing only in having her portrait and titles.[9] The coins struck over the next eighteen months mostly never saw circulation because the large amount of base silver coin in circulation drove all the good coin into private savings or, worse, into the melting pot. To rectify this situation plans were made for a recoinage which was duly announced on 27 September 1560 by a proclamation calling down the base coins to somewhat below their bullion value.[10] On 1 October 1560 the mint started issuing the new coin, of the same 11 oz (916) standard and the same denominations as the earlier coins but differentiated from them by the inclusion of a circle of dots between the bust and the legend.[11] The initial mark of a lis remained unchanged.

During the next two months as the recoinage got underway a number of important changes were made. The standard of the silver was restored to its ancient sterling value, 11 oz 2 dwt (925), and a second mint was established within the Tower to assist in recoining the silver. These changes were given effect by two indentures; the first, signed on 8 November 1560, appointed Thomas Stanley as undertreasurer of the 'Nether Mint' situated between the west walls of the Tower of London and charged him with making the full range of gold

[1] P. Sanders, 'The milled silver coins of Elizabeth', *NCirc* 47 (1949), 410–11.

[2] D. G. Borden, 'An introduction to the mill coinage of Elizabeth I of England', *Actes 8 Cong. Internat. Num. (New York-Washington) 1973* (Paris, 1976).

[3] R. Ruding, *Annals of the coinage of Britain* (London, 1817), II, 133–67.

[4] H. Symonds, 'The mint of Queen Elizabeth and those who worked there', *NC* 5th ser. 16 (1916), 61–105.

[5] J. Craig, *The Mint* (Cambridge, 1953).

[6] P. H. J. Goldman, 'Eloye Mestrelle and the introduction of the mill and screw press into English coining. circa 1561–75', *NCirc* 82 (1974), 422–7.

[7] C. E. Challis, *The Tudor Coinage* (Manchester, 1978).

[8] W. J. Hocking, 'The first coinage by machinery in England', *NC* 4th ser. 19 (1909), 72–82.

[9] Ruding, p. 133. The denominations ordered included the 30s. sovereign, 10s. angel and 5s. half-angel in fine gold, the 20s. pound (not issued), 10s. half-pound, 5s. crown and 2s.6d. half-crown in crown gold, and the shilling, half-shilling (not issued), groat, halfgroat and penny in 11 oz fine silver.

[10] Ruding, pp. 135–7.

[11] I. D. Brown, 'A new mintmark for Elizabeth I', *NCirc* 80 (1972), 59–60.

and silver coins,[12] the second, signed on 9 December 1560, appointed Thomas Fletewood as undertreasurer of the 'Upper Houses', a new mint built between the walls on the east side of the Tower, to produce only silver coins, viz. the shilling, groat, halfgroat and penny.[13] The Nether Mint went into production immediately, marking its coins with the initial mark cross crosslet, but it was not until January 1561 that the Upper Houses were striking coins in any quantity.[14] These bear the initial mark martlet.

It was against the background of the recoinage that Elizabeth authorised Eloy Mestrelle, 'the Frenchman', to set up the first coining press in England. Little is known of the antecedents of Eloy. He was born in Paris and probably moved to London with his family, including a kinsman Philip, early in 1559. He must have learned his trade at the Moulin de Monnais at Versailles and we can only speculate on why he left. The Moulin was in full production at the time, and it is unlikely that the queen invited him to England to undertake such an experiment at a time when her energies were being so fully engaged in the recoinage. It is likely therefore that Eloy was out of favour with his superiors and left France to see if he could sell his skills to the English court. This interpretation is suggested by the first mention of Eloy in the contemporary records, a pardon, granted on 24 March 1561 when he was already established at the mint, 'for all treasons, felonies and offences committed before 1 March 1. Eliz. (1559) in respect of clipping or counterfeiting coin'.[15]

Eloy presumably made contact with the court on his arrival in London for by June 1560 he was beginning to assemble the material needed for his machinery.[16] The costs for setting up his machinery were included in the accounts of the Upper Houses,[17] though his formal relationship with the undertreasurer Fletewood is not clear nor is much known about the staff he had working with him, apart from William Blunt[18] who is mentioned in a couple of documents as the official responsible for the 'press money'. Eloy himself was responsible for the production of his own dies which, as discussed below, were produced in a different manner from those used with the hammered coins.

Mestrelle and Blunt were responible for all aspects of the production of the new coins including maintaining the standards of weight and fineness. The new coins were therefore differentiated from Fletewood's hammered pieces by having no circle of dots between the queen's portrait and the legend and by having the initial mark star. They were treated separately at the pyx trials and appear to have met the required standards.[19]

The machinery used to produce the coins has been described by Symonds[20] and Challis.[21] The metal was cast into special ingots which were passed through a cutter that gave blanks about ten per cent overweight. The accuracy of this cutter was not great enough to produce blanks within the required tolerance and they were therefore laboriously passed through rollers several times and recut (annealing between times where necessary) until their weight was within the required limits. The design was then impressed with a balancier or screw press. Unlike the presses used in Paris, which were driven by water power, the relatively small rollers used for justifying the single blanks were probably turned by hand. The workshop was equipped with several such rollers[22] but probably a single balancier (see below). At periods of peak production Mestrelle's mint must have employed at least a dozen men.

Mestrelle's machinery started production sometime after the new standard was introduced on 8 November 1560, but probably before January 1561. The first coins he produced were the shilling, groat and halfgroat. During 1561 he also struck a small number of halfpound and crown coins in gold, possibly in conjunction with the queen's visit to the mint in July.[23] It is not clear whether these coins were authorised or merely patterns. The silver

[12] Symonds, p. 66.
[13] Ruding, p. 146.
[14] I. D. Brown, 'Some notes on the coinage of Elizabeth I with special reference to her hammered silver', *BNJ* 28 (1958), 568–603; Challis, p. 126.
[15] Goldman, p. 422.
[16] Challis, p. 17.
[17] Symonds, p. 70.
[18] Challis, p. 18.
[19] Symonds, pp. 97–100.
[20] Symonds, pp. 75–6.
[21] Challis, pp. 17–19.
[22] Challis, p. 17.
[23] Symonds, p. 67.

coins (but not the gold) were pyxed together with the hammered recoinage issues on 24 October 1561.[24] Following this pyx the old silver denominations were dropped in favour of the new denominations 6d, 3d, 1½d and ¾d. More than three quarters of Mestrelle's total output was in sixpences but he produced a significant number of threepences and a small number of experimental threefarthings pieces, as well as a small coinage of gold.[25] The new denominations were proclaimed on 15 November 1561,[26] and in December Eloy was awarded an annual pension of £25, not a large sum, but a mark of royal favour.[27]

The next eighteen months were the most productive of Mestrelle's career with the Tower mint. No records survive of the amount of silver struck but most of the surviving specimens come from this period. The number of mill sixpences struck with the dates 1561 and 1562 probably runs into the hundreds of thousands, and many of them were still in circulation over a century later.

During this period a coinage of gold halfpounds, and later crowns and halfcrowns was undertaken. Bishop Grindal of London refers to these coins in a letter written on 6 June 1562 in which he encloses a sample of the new gold coins made 'in a manner resembling print'.[28]

During the following summer, in 1563, the plague arrived in London.[29] Those who had retired to the country for the summer remained there while those still in the city either left or avoided public places. Trade languished and food was scarce. Michaelmas term was not kept and the mint remained closed until the following spring. When it reopened Eloy's workshop resumed production of sixpences and threepences but silver came into the mint slowly and production was slow both for the press and the hammer.

It is perhaps at this time, when work was scarce, that the frictions that apparently plagued the latter days of the mill experiment started. Sometime during 1564 Eloy's machinery came to a stop even though the hammermen continued to produce a respectable quantity of coin. Indeed, hammered coin production picked up considerably during 1565 and 1566, but it was not until the end of 1566 that Eloy once again got back into production. On the 13 February 1567 a long overdue pyx was held[30] and although the press money is not explicitly mentioned it must have been included since the next coins issued by Mestrelle have a new initial mark – the lis.

Mestrelle continued to produce his modest share of the increasing output of the mint until 1 September 1568 when his fortunes dramatically changed. On that day Philip Mestrelle was arrested for producing four counterfeit Burgundian crowns and Eloy was implicated in the crime.[31] At the City of London magistrates session of 12 January 1569 Philip was convicted and on the seventeenth he was hanged at Tyburn.

Eloy's involvement appears to have been minor since he sued for a pardon which was granted on 2 May 1569,[32] but it took him a year to recover his position in the mint. When he renewed his activities in the latter part of 1570 the coins he produced showed that he was working under considerable restrictions. The only set of letter punches available to him had a retrograde N making his designs look ridiculous. The engraving of the bust was also inferior. A little medallion (No. 53)[33] struck by Mestrelle at this time in gold and silver is probably a poignant plea to the queen. Usually called the 'Defence of the Realm Medal',[34] its obverse has the portrait of the queen with the flattering message QUID NOS SINE TE

[24] Symonds, p. 99.

[25] There are no records of how much silver or gold Mestrelle struck, nor are the pyx records helpful. Small numbers of milled sixpences continue to appear in hoards deposited as late as 1697 indicating that appreciable amounts of silver were struck. Apart from the half pounds of 1567 only token quantities of gold appear to have been struck.

[26] Ruding, p. 152.

[27] Goldman, p. 422.

[28] Hocking, p. 73.

[29] Ruding, p. 158.

[30] Symonds, p. 100.

[31] Ruding, p. 159; Goldman, p. 423.

[32] Goldman, p. 423.

[33] Numbers in parentheses refer to the type numbers listed in Appendix 2 and illustrated in the figures.

[34] Hawkins, Franks and Grueber, *Medallic Illustrations of the History of Great Britain and Ireland* (London, 1904–11), no. 57 (p. 120). There dated to 1572 but this piece is clearly a product of Mestrelle's workshop from 1570.

(what are we without Thee?) and the reverse a picture of the Tower with the plea QUID HOC SINE ARMIS (what is this without tools?). From the sad quality of this little piece it is clear that Mestrelle had been denied the tools he needed.

In December 1571 undertreasurer Stanley died[35] and on 19 April 1572 a new indenture was signed with John Lonison as master, reinstating the old mint organisation in which the master and warden were fully responsible for the running of the mint including finding the salaries of the staff from their seigniorage.[36]

Martin had no desire to see his profit used to support inefficient experiments and, to justify discontinuing Mestrelle's press, he ordered the assay-master to run a series of trials in May and June to assess the efficiency of the machinery.[37] The tests showed that two men using Mestrelle's equipment could produce twenty-two sixpence blanks an hour compared to the hammermen's capacity to produce 280 blanks in the same time. Furthermore the hammermen could size their blanks more accurately and with less waste. Martin deprived Mestrelle of access to the mint. In a letter written on 25 August 1572 to Lord Treasurer Burghley, Martin lists a variety of problems with Mestrelle ranging from non-payment of debts to difficulties with sightseers. In any case Martin regarded Mestrelle's conviction as voiding his patent.[38]

Although Eloy retained his lodgings in the Tower, he never struck any more coins there. For the next five years nothing is known of his movements, but in October 1577 he was arrested in London and charged at the Norfolk Assizes with counterfeiting.[39] On his apprehension his goods were seized, his house was shut up and his widowed mother and family turned out to fend for themselves. Later, when the evidence against him appeared sufficient to ensure a conviction, he attempted to save his life by turning queen's evidence and implicating a number of others who were also involved in counterfeiting. But his revelations did not satisfy the Crown, and in the spring of 1578 Eloy appears to have met the same fate as his kinsman Philip.

Eloy's machinery remained in the Tower, and in 1574 and 1575 a series of very handsome sixpenny and threepenny patterns (50–52) was struck. Little is known about the origin of these pieces. In style they are similar to some of the fine early mill pieces but the bust is much more flamboyant. It is difficult to believe that they were produced by Eloy who was out of favour and would not have had access to the die shop or his machinery. The portrait is similar to that used at this time on the semi-official Wickliffe and Humphrey pattern billon halfpenny.[40] It is likely that Derek Anthony was responsible for both sets of dies and decided to test the abilities of the machinery that was now lying idle.

Mestrelle's coins have survived both him and his machinery. They were accepted into circulation where they continued to provide service for 130 years until the recoinage of 1696-97. However, because of their round shape and different style they did stand out and were often retained for special purposes. Shakespeare refers to them being kept as gaming counters in which capacity they seem to have commanded a premium.[41] A series of forty-five mill sixpences culled from circulation and gilded was recently sold at an auction together with its mid-eighteenth century silver gilt container.[42] The two milled sixpences appearing in the Painswick Hoard[43] deposited in 1642 during the Civil War constitute a pair of matched love tokens, two coins bent together in the shape of an S and one retained by each of the parties. Perhaps the most unusual fate to befall any of these coins was

[35] Challis, p. 134.

[36] Challis, pp. 134–5.

[37] Symonds, pp. 75–6.

[38] Symonds, pp. 73–4.

[39] The various documents relating to Eloy's trial are quoted by Goldman, pp. 425–6.

[40] C. W. Peck, *English Copper, Tin and Bronze Coins in the British Museum 1558–1958*, second edition (London, 1964), Coin no. 1, illustr. Pl. I.

[41] See the opening of *The Merry Wives of Windsor* discussed by Evans in *NC* 4th ser. 5 (1905), 307.

[42] Spinks Coin Auction No. 27 (16 March 1983), Lot 201.

[43] Reported in the *BNJ* 27 (1952/4), 219. (Brown and Dolley EP33). The coins are in the Gloucester Museum. The silver portion of this hoard appears to be a collection of keepsakes rather than a bag of currency.

experienced by the thirty mill sixpences (presumably kept as counters) that found their way to the Indian Northwest Frontier in the possession of an Englishman who was murdered there during the sixteenth century.[44]

The Coins

For the purpose of this study we acquired photographs of as many of the coins of the series as possible. These were printed at double scale and provided the principal source material.[45] In total we studied 637 coins representing 104 obverse and 96 reverse dies as listed in Appendices 1, 2 and 3. The relatively large number of dies represented by only a single coin suggests that about twelve obverse and eight reverse dies are not represented in our sample and still have to be identified.

Although no indentures of this coinage survive and the pyx records are meagre, the silver coinage can be divded into four separate accounting periods, the first (initial mark star) belonging to the first[46] issue of the reign (1560 to 24 October 1561), the remainder (initial marks star (24 October 1561 to 13 February 1567), lis (14 February 1567 to 13 February 1571) and castle (14 February 1571 to December 1571)) belonging to the second issue. The gold all belongs to the first gold issue and falls into two accounting periods, star (1561–13 February 1567) and lis (14 February 1567–13 February 1571). Within each period there are well defined varieties, each of which may be represented by as many as a dozen dies.

The method of making the dies is not described in the contemporary documents but an examination of the coins shows that it was different from the method used in sinking dies for the hammered coins. Punches were used to produce the designs but the dies were extensively re-engraved afterwards. Thus the same bust punch can be followed through several dies but on each the details of the clothing, jewellery and hair is slightly different.

An analysis of the die pairings shows that apart from a brief period in the early summer of 1562 only one pair of sixpence dies was in use at a time. This suggests that for most of the period the mint had only one operating balancier. Frequently both dies were changed together but in at least one case a reverse die was used with six different obverse dies, and in another case an obverse was used with four different reverse dies. The slight excess in the number of obverse (104) over reverse dies (96) is an unusual feature of this coinage. The relatively short lifetime of the punches is also remarkable, the longest surviving bust punch produced only forty-one dies and at least six bust punches were used on the milled sixpennies during the nine years in which they were issued. For comparison a bust punch used on the hammered coinage might last from ten to fifteen years and produce many hundreds of dies. The production of dies, like the production of the coins, must have been a labour of love; its cost could only be justified by the superior appearance of the coins.

We have grouped the coins into fifty-three types according to the denomination, initial mark, date, bust and major stylistic variations. Different dies within a type are indicated by the notations O1, O2 and R1, R2 for the obverse and reverse respectively. The types have been arranged chronologically and as far as it is possible to tell so have the dies. However, the die sequences are broken and it is not usually possible to say which end of a sequence was chronologically first. A description of the various features of the coins follows. A description of the types and dies is given in Appendix 2 and an historical summary in Appendix 4. Every die in the sample is illustrated in the plates. Appendix 3 lists the die combinations and the provenances of the coins studied.

[44] *Gentleman's Magazine* (1865), I, 595. (Brown and Dolley KR1).

[45] The photographs used as source material have been deposited with the Department of Coins and Medals at the British Museum.

[46] According to the classification proposed in I. D. Brown, 'A Classification of the Coins of Elizabeth I', *NCirc* 92 (1984), 116–18.

The Busts

Eight different busts can be identified. Although the details may vary from one die to another the general features are common to all dies. When a change is made from one bust to another, it is deliberate and occurs at the same time in all denominations, providing a useful method of dating the gold coins relative to the silver.

Bust A 1560–1561

A small-faced bust with an ornate dress having two rows of beads or pearls at the bottom of the dress and sleeve. The collar has three or four rows of diamonds in its design. A high ruff conceals the ear. The bust undergoes an evolution during the year and, particularly on the small shillings, one of the rows of beads at the bottom may be missing. On the sixpences the two rows of beads are arched and reveal a flower pattern below.
Types: Half-pound (1), Crown (7), Shillings (12–17), Sixpence (21), Groat (18), Threepence (44), Halfgroats (19, 20).

Bust B 1561–1562

A small bust with a very plain dress. There is considerable variation in the width of the bust, the size of the sleeves, etc.
Types: Sixpences (22, 23).

Bust C 1562

A tall or upright bust with an ornate dress. Very neat with a richly decorated dress having a high ruff and a single row of pearls about the face. There is a single row of beads at the bottom of the bust with a flower pattern below.
Types: Half-pound (2), Sixpence (24), Threepence (45).

Bust D 1562–1564

A large, broad bust with an elaborate dress. The shoulders are plain or almost plain except for vertical rows of beads. There are no pearls on the bonnet and a high ruff conceals the ear.
Types: Half-pounds (3–5), Crown (8), Half-crown (10), Sixpences (25–34), Threepences (46–8), Threefarthings (49).

Bust E 1564–1566

Similar to D but with a low ruff which exposes the ear. The two versions used on the sixpence in 1566 have distinctive treatments of the clothing.
Types: Half-pound (6), Crown (9), Half-crown (11), Sixpences (35, 36).

Bust F 1567–1568

A small plain bust with a low ruff and exposed ear. The shoulders are shown more in profile.
Types: Sixpences (37–40).

Bust G 1570–1571

A large crude bust which breaks the legend. Always accompanied by retrograde N's in the legends.
Types: Sixpences (41–3), 'Defence of the Realm' medal (53).

Legends

The normal obverse legend is ELIZABETH·D·G·ANG·FRA·ET·HIB·REGINA. There are some accidental variations on some dies as noted in Appendix 2. On the 1567 sixpences, two major variations in the legend are found: ELIZABETH·D: G: ANG: FRA: ET·H: REGI' (37)

and ELIZABETH·D: G: ANG: FR: ET·HI: REGIN: (38) later expanded to REGINA' (39, 40). The reading REG was apparently reported by Sanders in error.[47]

The 1570–1 sixpences have as an obverse legend ELIZABETH·D·G·/AN·F·& ·HI·REGINA with retrograde N's and the bust breaking the legend at the slash.

The 1563 threefarthings pieces have the obverse legend, E·D·G·ROSA SINE SPINA.

The reverse legend on the gold reads SCVTVM·FIDEI·PROTEGET·EAM. (The shield of faith shall protect her.) The reverse of most of the silver coins reads, POSVI/DEVM·AD/IVTORE/M·MEVM. (I have made God my helper), with the cross breaking the legend as incidated. On the 1567–71 sixpences, the reverse legend reads, POSVI/DEV'.AD/IVTORE/MEV'. The reverse of the mill threefarthings pieces reads, CIVI/TAS/LON/DON/.

The Borders – Dogtooth and Pellet

One of Mestrelle's innovations was a twin punch used to produce the beads (pellets or teeth) in the circle which forms the border around the outside of the coins.[48] The first blow with this punch made two circular or oval pits in the die. The punch was then moved until the boss of the first was in the second pit. A second blow sunk a third pit, and so on round the circle which had previously been traced with a compass.

In most cases, the 'teeth' are actually elongated ovals but where there is a raised or flat rim they appear more like triangles or 'teeth' with their points inward. There were a number of variations in the borders during the brief eleven years of the coinage. One of the first sixpences (21) had 164 very closely spaced long, thin 'teeth' but subsequent dies had only 120–40. Late in the 1562 sixpence series, fine 'teeth' were again used (30) with the introduction of the pattée cross. Still later, a very fine pellet border was used (31–3) with 200–10 very tiny beads. This was also used for the 1563 and early 1564 sixpences. With some of the 1564 sixpences (34), and some of the 1566 sixpences (36), a flat rim was introduced together with rather coarse 'dogtooth' denticles which appear as teeth pointing inward (120 'teeth'). The borders of the 1567–8 sixpences comprise about 120 large 'dogteeth' but on one die (37–R3) they have a distinctly braided look. However, one of the 1568 dies (40–R2) does have a fine-toothed border. The pattern sixpence of 1570 (41) has an interesting border consisting of elongated 'teeth' alternating with double stops or colons. On the regular 1570 and 1571 sixpences (41, 43) the coarse-toothed border was used.

Edges

There is no evidence that the coins were struck in collars. The edges are for the most part plain but the gold coins with the mark lis have serrated edges which Hocking supposes were put on the blank by some kind of knurling tool before the coin was struck.[49]

Roses

The roses were placed behind the queen's head on the sixpences, threepences and threefarthings in 1561 to distinguish them from the groats, half-groats and pennies of the previous coinage. The rose appears with various sizes and orientations which can be used in differentiating different dies.

Shields

The shields used on the reverses of the mill coins are generally much larger than those on the hammered coins. Their size, shape and positions are useful in die identification. Attention should be paid to the position of the upper corners of the shields with reference to the legends. As the flans of the shillings shrank from 32 to 29 mm the shields appear to be

[47] Sanders, pp. 410–11. [48] Craig, p. 124. [49] Hocking, pp. 79–80.

larger and they crowd the legend. Some shields are more square, some more elongated and some are more rounded.

Crosses

All the silver mill coins bear a large cross and shield on the reverse. Until late in the 1562 coinage, a fourchée cross was used with floriate or leafy terminations in each of the forks. From then until 1566 a pattée cross was used, after which the fourchée cross was again used. A simple flat cross was used on the patterns of 1574–75.

Crowns

All the portraits on the mill coins show the queen's head crowned. The crowns vary considerably, having 5–13 pearls or beads on either side of the orb atop the crown. The bands of the crowns vary with different stops or lozenges in the designs. The position of the cross on the orb relative to the legend is a useful way to distinguish different dies. All the gold pieces have a large crown on the reverse with ER at the sides. These crowns vary, especially in the width of the opening.

Some of the crowns are 'frosted', a process which produces a beautiful matt surface in the background. Frosted crowns are found on dies 1–R1, 3–O1, 4–R1 in the half-pounds, 7–R1 in the crowns, and 25–O4, 25–O5, 25–O8 and 29–O4 and possibly others in the sixpences. Hatching, or fine diagonal lines, appears within a few crowns such as 5–R1 and 6–R1.

Letters

As the mill coinage proceeded, the letter z changed from a plain z with straight bars to one with slightly wavy bars and finally to a very curly z with an upswept lower bar.

The letter N is retrograde in the AN and REGINA of the obverses used in 1570–1 and in both the obverse and reverse dies of the 'Defence of the Realm' medals (53). The spacings of the letters in the legends and variations in the punches used for the letters and numbers are useful for differentiating dies. Variations in punctuation are also known.

Die Flaws

A number of the dies developed cracks or other flaws during striking which can be a useful method of identification. These are listed in Appendix 2 and are visible in many of the illustrations.

APPENDIX 1

Statistics on Numbers of Dies found in the Present Study

Denomination	*Obverse Dies*	*Reverse Dies*	*Die Pairs*	*Coins*
Half-pounds	6	4	6	44
Crowns	3	3	3	11
Half-crowns	2	2	2	5
Shillings	10	10	11	89
Sixpences	66	61	94	381
Groats	2	2	2	21
Threepences	5	6	7	48
Half-groats	3	3	3	24
Threefarthings	3	1	3	3
Late patterns, medals	4	4	4	11
Totals	104	96	135	637

APPENDIX 2

Descriptions of the Principal Types and Dies

Type

1 Half-pound star, Bust A. From its style this piece was struck during the recoinage, possibly on the occasion of the queen's visit in July 1561. Only one example is known and as no milled gold was included in the pyx of October 1561 it is possible that this coin was a pattern. The obverse die is the same as 16–O3.

2 Half-pound, star, Bust C. Issued before June 1562. Obverse legend reads FR instead of FRA. This is probably the piece referred to in Bishop Grindal's letter.

3 Half-pound, star, Bust D, tooth border. Struck in 1562.

4 Half-pound, star, Bust D, pellet border plain Z. Struck in 1563.

5 Half-pound, star, Bust D, pellet border curly Z. Struck in 1564.

6 Half-pound, lis, Bust E, serrated edge. Struck in 1567–8. These are the most common of the milled gold coins.

7 Crown, star, Bust A. Struck during 1561. Although several examples are known this piece may have been a pattern (see type 1). Obverse die same as groat (18–O1).

8 Crown, star, Bust D, pellet border, curly Z. Struck in 1564.

9 Crown, lis, Bust E. Struck in 1567–68. Reverse reads FIDI:EI.

10 Half-crown, star, Bust D, pellet border, curly Z. Struck in 1564.

11 Half-crown, lis, Bust E. Struck in 1567–8.

12 Shilling, martlet. This is a specimen hammered coin struck by Fletewood's mint in early 1561 (Brown, 'Some notes', p. 574). Its similarity with the contemporaneous type 13 suggests some connection, possibly an attempt by the hammered moneyers to show that they could produce as handsome a coin as the pressmen.

13 Shilling, mullet. Struck probably in December 1560 or January 1561 as a pattern for the milled coinage. The mullet initial mark was used to denote patterns.

14 Shilling, star, Bust A with plain dress, large size (32 mm diameter). Probably the first currency issue.
- O1
- O2
- R1 large shield.
- R2 smaller shield.

15 Shilling, star, Bust A with decorated dress, large size (32 mm diameter).
- O1 cross points to centre of L.
- O2 cross points to right of L.
- R1 shield points to left side of O.
- R2 shield points to right side of O.

16 Shilling, star, Bust A, intermediate size (30 mm diameter).
- O1 cross to right side of E, star closer to E.
- O2 cross to right side of E, star closer to A.
- O3 cross points to L. Also used on halfpound (see type 1).
- R1 shield to left of E.
- R2 shield to right of E.
- R3 shield to centre of E.

17 Shilling, star, Bust A, small size (29 mm diameter). Although represented by a single die pair this is the most common shilling variety.

18 Groat, star, Bust A. Die O1 also used on Crown (see type 7).
- O1 5 jewels on each side of crown, broken B in HIB.
- O2 8 jewels on each side of crown.
- R1 space between M and fleur on cross.
- R2 M crowds fleur.

19 Half-groat, star, Bust A. Two rows of beads at base of bust.

20 Half-groat, star, Bust A. Single row of beads at base of bust.
- O1 cross touches E.
- O2 cross clear of E.
- R1 top of T weak.
- R2 inverted A for V in MEVM.

21 Sixpence, star, 1561, Bust A. With arched double row of beads at base of bust.
- O1 space between rose and crown.
- O2 rose almost touches crown. No stop after D.
- R1 shield to right of O.
- R2 shield to left of O.

22 Sixpence, star, 1561, Bust B, large rose.

23 Sixpence, star, 1562, Bust B, medium rose.

O1 die break through HIB, thorn points to T, cross to L.
O2 thorn points to left side of H.
O3 thorn points between T and H.
O4 die break through H of name, thorn points to E.
O5 ELIZABTH, thorn points between B and E.
O6 thorn points between T and H.
O7 thorn points to T, cross to E.
R1 misshapen M in ADIVTOREM.
R2 die flaws at 8 and 11 o'clock.
R3
R4 small shield, stops at date almost at edge of shield.
R5 shield between P and O.
R6 star touches fleur of cross.
R7 small 5, no stops at date.
R8

24 Sixpence, star, 1562, Bust C, medium rose. Note that each die has different decoration on the bust.

O1 cross points to E.
O2
O3
O4
R1 no stops at date, reads DEVMA.D.
R2 A and D overlap.
R3 space between I of POSVI and fleur.
R4 6 of date lower than 2.
R5 no stops at date.
R6 stop at date close to P.
R7 stop after date close to corner of shield.

25 Sixpence, star, 1562, Bust D, small rose. Right shoulder of bust penetrates legend between FRA and ET. The crown is usually frosted.

On the normal obverse the cross points to the centre of the L and a thorn to the middle of the H. Obverse dies can be differentiated by the position of the point of the right sleeve relative to the stop after FRA. Reverse dies can be differentiated by the shape and position of the date.

O1
O2 die flaw through R of REGINA, thorn points between T and H.
O3 cross points to left side of L. Star points between teeth, bust to left of stop.
O4 cross points to right of short L. Star points at tooth.
O5
O6 small rose, petal points to H.
O7
O8 cross points to right side of E.
O9 cross points between E and L, thorn points between T and H.
O10
O11 cross points to left side of L. Star points at tooth, bust to right side of stop.
R1
R2 period after date close to right of P.
R3
R4 base of shield not tapered.
R5 bottom of 5 curls to left.
R6
R7 spaces after IVTORE and MEVM.
R8
R9 large space after I of POSVI.

26 Sixpence, star, 1562, Bust D. Cross on crown penetrates legend between E and L. Right shoulder of bust does not penetrate legend and the star is closer to A than E.

Dies of this type are extremely hard to differentiate. The number and arrangement of beads on the crown arches and the position of the stop relative to the bars of the H's are the best way to distinguish obverse dies. There are small variations in the dress ornamentation.

O1
O2 2 beads on each inner arch of crown.

Appendix 2. Descriptions of the Prinicpal Types and Dies (cont.)

O3
O4 2 beads on each inner arch of crown.
O5 die flaw through REGINA.
O6 2 beads missing on front arch of crown.
O7 single bead on forward inner arch of crown.
O8 single bead on forward inner arch of crown.
O9 die flaw through star, 2 beads on forward inner arch of crown.
O10 single bead on both inner arches of crown.
R1 flaw through SVI and IVT.
R2
R3
R4
R5 I of POSVI parallel to right limb of V.
R6

27 Sixpence, star, 1562, Bust D. Neither cross nor right shoulder penetrate legend. Z is broad and slightly curly. Fourchée cross on reverse.
O1 cross points to centre of E.
O2 cross points to right side of E, reads A.GERA.
O3 cross points to upright of E.
R1 stop directly below V.
R2 stop slightly to right of V.

28 Sixpence, star, 1562, Bust D. As type 27 but with pattée cross on reverse.

29 Sixpence, star, 1562, Bust D. As type 28 but with curly Z.
O1 cross points between E and L.
O2 crown points to E.
O3 die flaw over ELI, top bar of Z slopes to left.
O4 crown covered by L.
R1 shield points to right of E.
R2 shield points to left of E.

30 Sixpence, star, 1562, Bust D. As type 29 but with border of fine teeth.
O1 bust fully pierces legend after FRA, star touches fourth bead on crown.
O2 star touches fifth bead on crown.
O3 E higher than T in ET.
R1 2 fleur-de-lis in fourth-quarter touch cross. V and M of DEVM elided.
R2 space between cross and fleur de lis in fourth-quarter.

31 Sixpence, star, 1562, Bust D. As type 29 but with border of pellets.

32 Sixpence, star, 1563, Bust D. As type 31 apart from date.
O1 stop after FRA above cross bar of A.
O2 stop after FRA below cross bar of A.
R1

33 Sixpence, star, 1564, Bust D. As type 31 apart from date. Date overstamped on 1562 or 1563.
O1 right arm truncation opposite stop.
O2 right arm truncation opposite A.
R1 1564/3 stop after date closer to shield, same as 32-R1 overstamped.
R2 1564/3 (?) stop after date closer to P.

34 Sixpence, star, 1564, Bust D. Toothed border. Date overstamped on 1562 or 1563.
O1 lower left point of star points to bottom of A.
O2 die flaw at FRA, lower left point of star points to middle of A.
R1 1564/3. Space after I of POSVI.
R2 1564/2.

35 Sixpence, star, 1564, Bust E. Toothed border with rim. Date overstamped over 1562 (?).

(35A) The sixpence with date 1565 has been reported in the Ashmolean Museum but this piece belongs to type 36.

36 Sixpence, star, 1566, Bust E. The two obverse dies have quite different treatment of clothing. 6 of date overstamped over an indecipherable figure.
O1
O2
R1 shield points to centre of E.
R2 shield points to left of E.

37 Sixpence, lis, 1567, Bust F.
Reads ELIZABETH.D'G:ANG:FRA:ET.HI:REGI'. The reverses from here on read POSVI/

DEV'.AD/IVTORE/M.MEV'. The reverse dies are best differentiated by the relative positions of the 6 and 7.

O1 front of bust points to G, I of REGI at angle to G.
O2 front of bust points to F.
O3 front of bust points to G, I of REGI parallel and close to G.
O4 no punctuation after REGI.
R1
R2 fault on left stroke of M in ADVTOREM.
R3 6 higher than 7 in date.
R4
R5

(37A) The REG sixpence was reported by Sanders in error and does not exist.

38 Sixpence, lis, 1567, Bust F.
Reads ELIZABETH.D:G:ANG:FR:ET.HI:REGIN: The bust is smaller and the shield larger.
O1 front of bust points to G.
O2 front of bust points to punctuation mark.
R1 stop after date to right of P.
R2 stop after date to left of P.

39 Sixpence, lis, 1567, Bust F.
Reads ELIZABETH.D:G:ANG:FRA:ET.HI:REGINA from here on.
O1 thorn on rose points to T.
O2 thorn on rose points to E.
R1 lis in shield points to right of 5.
R2 lis in shield points to left of 5.

40 Sixpence, lis, 1568, Bust F.
O1 legend almost touches cross of crown.
R1 = 39–R2 with 8 over 7 of date.
R2 lis in shield points to right of 5.

41 Pattern sixpence, mullet, 1570, Bust G. Border of alternating teeth and colons. Retrograde N.
Reads ELIZABETH·D·G·/AN·F·&·HI.REGINA from here on.

42 Sixpence, lis, 1570. Bust G. Retrograde N.

43 Sixpence, castle/lis, Bust G, 1570/1. Same dies as 42 but overmarked.

44 Threepence, star, 1561, Bust A.

45 Threepence, star, 1562, Bust C.
O1 beads around left shoulder continuous.
O2 diamond pierces row of beads around left shoulder.
R1 E and V of MEVM touching.
R2 E and V of MEVM properly spaced.

46 Threepence, star, 1562, Bust D. Forchée cross on reverse, small rose.

47 Threepence, star, 1562, bust D. Pattée cross on reverse.
Border of fine teeth.

48 Threepence, star, 1564/3, same dies as type 47.

49 Threefarthings, star, 1563, Bust D. Probably a trial coinage to test the feasibility of producing very small coins. Only three specimens known, one of which bears a mullet mark on reverse.
O1 front of bust points between I and N.
O2 front of bust points to I, space between R and O of ROSA.
O3 front of bust points to I.
R1
R1a star recut.
R1b large mullet stamped over star.

50 Pattern sixpence, mullet, 1574. Ruff curves around chin.

51 Pattern sixpence, mullet, 1575. Ruff does not curve around chin.

(51A) Pattern threepiece, mullet, 1574. Although illustrated in Ruding this piece probably does not exist.

52 Pattern threepence, mullet, 1575.

53 'Defence of the Realm' medal. Bust G. (*Æ* weight 3.8 g).

APPENDIX 3

Die Combinations and Provenances of Coins Studied

Die linked series are indicated by a line in the left hand magin

Key to Collection Referred to in Appendix 3 and in the Plates

Individual coins are numbered arbitrarily unless otherwise indicated.

A *Ashmolean Museum* (Heberden Coin Room), Oxford.
B *British Museum*, London.
C *Coats Collection* (Hunterian Museum) Glasgow. Ticket number given.
D *D. G. Borden Collection* (USA).
E *SCMB*. Year/coin number given.
F *Fitzwilliam Museum*, Cambridge. Photographs reproduced by permission of the Syndics of the Fitzwilliam Museum.
G *Glendining Sales*, London. Date/lot number given.
H *Hunterian Cabinet*, Glasgow. Ticket number given.
L *Lockett* Sales Pts IV and VII 1956–8. Given by lot numbers. Letters used to differentiate specimens from multi-coin lots given on photographs in BNS library.
M *C. Comber Collection* (UK).
N *Linda Fenton Collection* (USA).
P *NCirc* Year/coin number. Some photographs supplied by P. Finn.
PA *Spink's Auction Catalogue*, 31 (1983). Lot numbers given.
S *Sanders Collection* (UK).
U *Burstal Sale*, Glendining, London, 1968. Lot numbers given.
W *I. D. Brown Collection* (Canada).
Z *W. Castenholz Collection* (USA).

Obv. Die	*Rev. Die*	*Date*	*IM*	*Provenance*	*Remarks*
Half-pound					
1-O1	1-R1		Star	L2038	
2-O1	1-R		Star	A44, A45, B1, E60/G797, F1, F70, L3206, N1, S21	'FR' on obverse
3-O1	1-R1		Star	A2, B2, E77/A1711, E81/EG52, L4396, P73/149, P74/198, S23	
4-O1	4-R1		Star	B3	
5-O1	5-R1		Star	B4, P68/8693, S24	Small crown, pellets
6-O1	6-R1		Lis	A1, A46, A47, B5, E56/G1036, E70/G647A, E72/G176, E73/G2126, E79/A1246, E82/EG22, E82/EG75, E83/EG11, F2, F71, F72, L2039, P67/8182, P69/6267, P71/4178, P72/11572, P83/4673, PA153, S22	Coarse teeth (knurled edge)
Crown					
7-O1	7-R1		Star	B6, F3, L2040, N2, P72/5243	
8-O1	8-R1		Star	B7	Pellet border
9-O1	9-R1		Lis	B8, F3, L3307, P72/11573, PA154	FIDIEI on reverse
Half-crown					
10-O1	10-R1		Star	B9, L3308	Pellet border
11-O1	11-R1		Lis	B10, L2041 = PA155, S25	
Shilling					
12-O1	12-R1		Martlet	A48, B84, B85, M1, S7, L2044	Hammered Fletewood pattern
13-O1	13-R1		Mullet	B30, S6	
14-O1	14-R1		Star	B12, M2, S20	Large flan
14-O2	14-R2		Star	M3	
15-O1	15-R1		Star	A6, D26, M60, S13	Large flan

15–O2	15–R2		Star	A49, B11, C1094, F5, F19, H1, L2045, M4, N3, P69/2165, P70/395, PA168, S11, U205	
16–O1	16–R2		Star	D13, E68/X128, S18	Intermediate flan
16–O1	16–R2		Star	M5, P81/5406, P80/2954, S14, S16	
16–O2	16–R2		Star	A4, A3, H2, M61, PA169, PA170, S17	Very fine teeth
16–O3	16–R3		Star	A5, A50, B13, B15, C1095, D21, E74/2058, E76/E56, E76/E205, F15, H2, M6, P79/2819, P81/5405, S12, S15, U206	
17–O1	17–R1		Star	A51, A52, A53, B14, D14, E78/E128, E78/E461, E83/E405, F4, F14, F16, F17, F18, F20, F21, F22, H1, L2046, M7, P70/396, P72/9296, P79/10248, P81/5407, P82/1685, S19, U207	Small flan
Groat					
18–O1	18–R1		Star	A34, A54, B16, B17, B18, C1122, D15, E72/H2439, E78/E131, F10, F66, F67, F68, H14, L2053, M8, N6, P79/10262, PA176, S120, U217	
18–O2	18–R2		Star	M9	
Half-groat					
19–O1	19–R1		Star	A43, M10, P79/10264, S130	
20–O1	20–R1		Star	A55, A56, A57, B25, M11, N8, P82/7405, S129	
20–O2	20–R2		Star	B26, B27, D18, E66/H3329, F13, F69, H16, L2058, M12, P70/403, PA178, S128	
Sixpences					
21–O1	21–R1	1561	Star	A7, B32, D27, F6, M13, P70/11297, S9	
21–O2	21–R2	1561	Star	B33, B38, C1107, D1, D34, E76/E57, F23, F24, F25, F26, H3, L2049a, M14, M15, M16, S8, Z1	
22–O1	22–R2	1561	Star	B39, L2049b, S5	
23–O1	23–R1	1562	Star	A9, B34, F46, M17, R1, S1	
23–O2	23–R1	1562	Star	A33, B40, B41, C1109, D2, F47, S34	
23–O2	23–R2	1562	Star	F40, F43, H5, M18, P70/11301, S37	
23–O3	23–R3	1562	Star	S10	
23–O4	23–R4	1562	Star	A10, B37, B43, D28, F37, F41, F45, M19, P70/11299, S31, S32	
23–O5	23–R5	1562	Star	B36, C1111, M72, P70/11298, S2	
23–O6	23–R5	1562	Star	B35, B42, S35	
23–O6	23–R6	1562	Star	A14, E82/E322, M20, S4, S3	
23–O6	23–R7	1562	Star	M22, P70/11300, S36	
23–O7	23–R8	1562	Star	L2049c, M21, S33	
24–O2	24–R1	1562	Star	A11, A22, B75, D4, F7, F42, F44, M25, P70/11305, PA173, S40	
24–O1	24–R2	1562	Star	A8, B78, D33, M26, P70/11304, S39	
24–O1	24–R3	1562	Star	B77	
24–O2	24–R3	1562	Star	S41	
24–O2	24–R4	1562	Star	B51	
24–O2	24–R2	1562	Star	D33	

Appendix 3. Die Combinations and Provenances of Coins Studied (cont.)

The following two die link sequences run in parallel.

24-O3	24-R5	1562	Star	M23, S38	
24-O3	24-R6	1562	Star	A19, B76, B80, B81, B82, D3, F38, F39, F48, F49, L2049d, M24, P70/11306, P79/2826, P82/4081, S42	
25-O1	24-R6	1562	Star	M64	
25-O1	25-R1	1562	Star	D23	
25-O1	25-R2	1562	Star	S45	
25-O2	25-R1	1562	Star	F30, M27, S30	
25-O2	25-R2	1562	Star	S62	
25-O3	25-R1	1562	Star	S49	
25-O4	25-R2	1562	Star	S46	
24-O4	24-R7	1562	Star	M62, N4, S43	
25-O5	24-R7	1562	Star	M63, S44	
25-O5	25-R3	1562	Star	M28, S47	
25-O6	25-R3	1562	Star	B47, B50, F36, S52	
25-O6	25-R4	1562	Star	C1108	
25-O7	25-R4	1562	Star	F27, F28, S50	
25-O8	25-R4	1562	Star	M30, S74	
25-O8	25-R5	1562	Star	S72	
25-O9	25-R6	1562	Star	B48, D5, F35, S70	
25-O10	25-R7	1562	Star	S51, S71	
25-O10	25-R8	1562	Star	B49, S53	
25-O11	25-R9	1562	Star	A21, B44, M29, P70/11303, S48, S54	
26-O1	26-R1	1562	Star	B45, C1110, D6, F33, M69, S29, S58	
26-O2	26-R1	1562	Star	F31, S60, S75	
26-O3	26-R2	1562	Star	S67	
26-O4	26-R2	1562	Star	B51, L2049e, P70/11307, S61, S77	
26-O5	26-R2	1562	Star	D24, M67, S26, S78	
26-O6	26-R2	1562	Star	M70, S73	
26-O7	26-R2	1562	Star	A18	
26-O7	26-R3	1562	Star	A15, A16, A20, F29, M68, S29, S76	
26-O7	26-R4	1562	Star	B45, S66	
26-O8	26-R2	1562	Star	M31	
26-O8	26-R3	1562	Star	A12	
26-O8	26-R4	1562	Star	A17, B52, B79, F32, P70/11302, P70/11308, S63, S65, S69	
26-O8	26-R5	1562	Star	H4, S64	
26-O9	26-R6	1562	Star	S68	
26-O10	26-R6	1562	Star	S59	
27-O1	27-R1	1562	Star	S55, S56	
27-O2	27-R1	1562	Star	B46, M32, S27, S28	
27-O3	27-R2	1562	Star	P70/11309, S57	
28-O1	28-R1	1562	Star	F34, M33	
29-O1	28-R1	1562	Star	M65, S80	
29-O1	29-R1	1562	Star	B34, B54	
29-O2	29-R1	1562	Star	A13, C1112, C1121, D29, M34, P70/11313, S81	
29-O3	29-R1	1562	Star	S82	
29-O4	29-R2	1562	Star	B53, M35, P70/11310, S79	
30-O1	30-R1	1562	Star	D19, M36, S84	
30-O2	30-R1	1562	Star	S83	
30-O3	30-R2	1562	Star	S85	
31-O1	31-R1	1562	Star	L2049f, M37	
32-O1	32-R1	1562	Star	A58, H6, L2050, M38, S92	
32-O2	32-R1	1563	Star	B55, B56, B57	
33-O1	33-R1	1564/3	Star	A24, B59, C1113, E70/6584, F52, H7, M39, P70/11314, S93	(33-R1 = 32-R1)
33-O2	33-R2	1564/3	Star	B58, D30, M40, P70/11315, S94, S95	

34–O1	34–R1	1564/3	Star	A23, D7, S89, S90, S91	
34–O2	34–R2	1564/2	Star	A25, B60, F50, F51, F53, L2051a, M41, S87, S88	
35–O1	35–R1	1564/2	Star	M42, S96	
36–O1	36–R1	1566/?	Star	A27, B61, B62, H8, L2051b, M43, P70/11316, S98	
36–O2	36–R2	1566/?	Star	A26, A28, B63, D8, F54, M44, S97	
37–O1	37–R1	1567	Lis	A32, D9, M46, S113, S114, S115, S116	
37–O1	37–R2	1567	Lis	P70/11320	
37–O2	37–R2	1567	Lis	A36, L2051c, M45, P70/11321, P71/488, S101	
37–O3	37–R2	1567	Lis	D31, S99	
37–O3	37–R3	1567	Lis	B64, S104	
37–O3	37–R4	1567	Lis	A31, C1114, H9, M47, N5, S111, S112	
37–O4	37–R2	1567	Lis	S100	
37–O4	37–R5	1567	Lis	F57, M71, S102	
38–O1	38–R1	1567	Lis	D10, F55, L2051d, M48, S110	
38–O2	38–R2	1567	Lis	B65, F56, M49, P70/11319, S117, U213	
39–O1	39–R1	1567	Lis	A29, F8, F58, M73, PA175, S109	
39–O2	39–R2	1567	Lis	A30, B66, C1115, D20, L2051e, M50, P70/11318, P71/487, P82/4083, S103	
39–O2	40–R1	1568/7	Lis	D11, L2051f, H10, M51, P70/11323, S107, S108	(Die 40–R1 = 39–R2)
40–O1	40–R1	1568/7	Lis	A37, A39	
40–O1	40–R2	1568	Lis	A35, A38, B67, B71, B72, B73, C1116, D25, F59, F60, M52, P70/11322, P70/11324, S105, S106	
41–O1	41–R1	1570	Mullet	B31, H12	(Pierced mullet pattern)
42–O1	42–R1	1570	Lis	A40, B68, B69, B74, D32, E77/E1236, F9, H11, M53, S118	
43–O1	43–R1	1571/0	Castle/Lis	A59, B70, D12, H13, L2052, M54 S119, U216, W2	(Die 43–O1 = 42–O1) (Die 43–R1 = 42–R1)
Threepences					
44–O1	44–R1	1561	Star	A60, B22, E66/H3327, F61, L2055, M55, P70/399, S121	
45–O1	45–R1	1562	Star	B23, D16, E76/E373, F11, H15, L2056, M56, P74/1329, PA177, S124	
45–O1	45–R2	1562	Star	A41, F62, F63, F64, M66, P74/1329, P79/10263, S123,	
45–O2	45–R2	1562	Star	B19, E72/H2440, M57, S122	
46–O1	46–R1	1562	Star	A42, A61, B20, C1131, D17, E79/E323, E81/E81, F65, M58, N7, S125	
47–O1	47–R1	1563	Star	S126	
47–O1	48–R1	1564/3	Star	B21, B24, F65, M59, S127	(48–R1 = 47–R1)
Threefarthings					
49–O1	49–R1	1563	Star	B28	
49–O2	49–R1a	1563	Star	D22	(49–R1a = 49–R1 with star recut)
49–O3	49–R1b	1563	Star	B29	(49–R1b = 49–R1 with large mullet recut over star)

Appendix 3. Die Combinations and Provences of Coins Studied (cont.)

Derek Anthony (?) Patterns Struck on Mestrelle's Mill

50–O1	50–R1	1574	Sixpence	IM Mullet B86
51–O1	51–R1	1575	Sixpence	IM Mullet B88
52–O1	52–R1	1575	Threepence	IM Mullet B87, F12, L2057, S134

Defence of the Realm Medal

53–O1	53–R1	23mm in silver	IM Lis A62, B83, N9, S136
53–O1	53–R1	23 mm in gold	IM Lis B89, G1974iii6/287

APPENDIX 4

Chronological Table and Principal Types

Year	*Event*	*Mark*	*Date*	*10/-*	*5/-*	*2/6*	*1/-*	*6d*	*4d*	*3d*	*2d*	*¼d*	*Bust*	*Remarks*
1559	Mestrelle arrives in England													
1560	Sets up machinery													
1561		(Martlet)					12							Hammered pattern
		Mullet					13						A	Pattern
		Star					14							
		Star					15							
	July: Queen's visit to mint	Star		1	7		16		18		19			
		Star					17				20			
	24 Oct: Pyx	——												
	15 Nov: New Denominations	Star	1561					21						
1562		Star	1561					22		44			B	
		Star	1562					23						
	6 June:	Star	1562	2				24		45			C	
	Grindall's	Star	1562					25					D	
	letter	Star	1562	3				26		46				
		Star	1562					27						
		Star	1562					28						Pattée cross
		Star	1562					29						Curly Z
1563		Star	1562					30						Fine tooth border
		Star	1562					31						Pellet border
		Star	1563	4				32		47		49		
	Michaelmas term not kept													
1564		Star	1564	5	8	10		33						
		Star	1564					34		48				Tooth border
		Star	1564					35					E	
1565	No mill coinage													
1566		Star	1566					36						
1567	13 Feb: Pyx	——												
		Lis	1567	6	9	11								
		Lis	1567					37					F	REGI
		Lis	1567					38						REGIN
1568		Lis	1567					39						REGINA
		Lis	1568					40						
	1 Sept: Mestrelle arrested													
1569	No mill coinage													
1570		Mullet	1570					41					G	Pattern
		Lis	1570					42						(also medal 53)
1571	13 Feb: Pyx	——												
		Castle	1571					43						
	Dec: Death of T. Stanley													

Year	*Event*	*Mark*	*Date*	*10/-*	*5/-*	*2/6*	*1/-*	*6d*	*4d*	*3d*	*2d*	*¼d*	*Bust*	*Remarks*
1572	13 Feb: Pyx Trial of Machinery													
1573														
1574		Mullet	1574					50						Pattern
1575		Mullet	1575					51		52				Pattern
1576														
1577	Mestrelle's arrest													
1578	Mestrelle's execution													

Acknowledgments

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PLATE I


1-O1
(= 16-O3)
L2038


2-O1
B1


3-O1
B2


1-R1
B2


4-O1
B3


5-O1
B4


5-R1
B4


6-O1
B5


4-R1
B3


7-O1
(= 18-O1)
B6


8-O1
B7


9-O1
B8


6-R1
B5


10-O1
B9


10-R1
B9


7-R1
B6


8-R1
B7


9-R1
B8


11-O1
B10


11-R1
B10


12-O1
B85


13-O1
B30


14-O1
B12


14-O2
M3


12-R1
B85


13-R1
B30


14-R1
B12


14-R2
M3

Gold and Shillings

PLATE 2


15-O1
A6


15-O2
B11


16-O1
(= 1-O1)
D13


16-O2
A3


15-R1
A6


15-R2
B11


16-R1
D13


16-R2
A3


16-O3
A5


18-O1
(= 7-O1)
B16


18-O2
M9


17-O1
A52


16-R3
A5


18-R1
B16


18-R2
M9


17-O2
A52


19-O1
A43


20-O1
B25


20-O2
B26

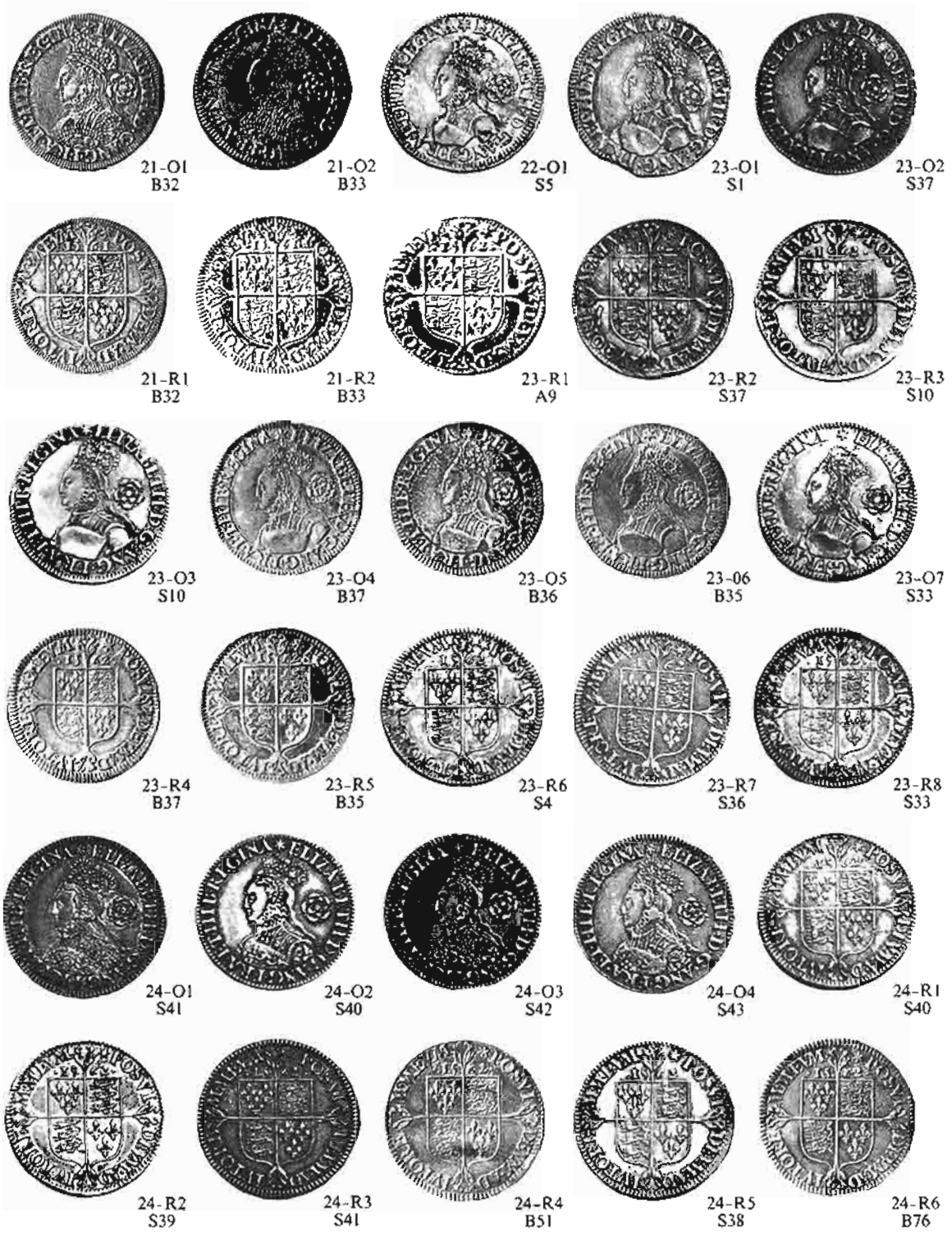

19-R1
A43


20-R1
B25


20-R2
B26

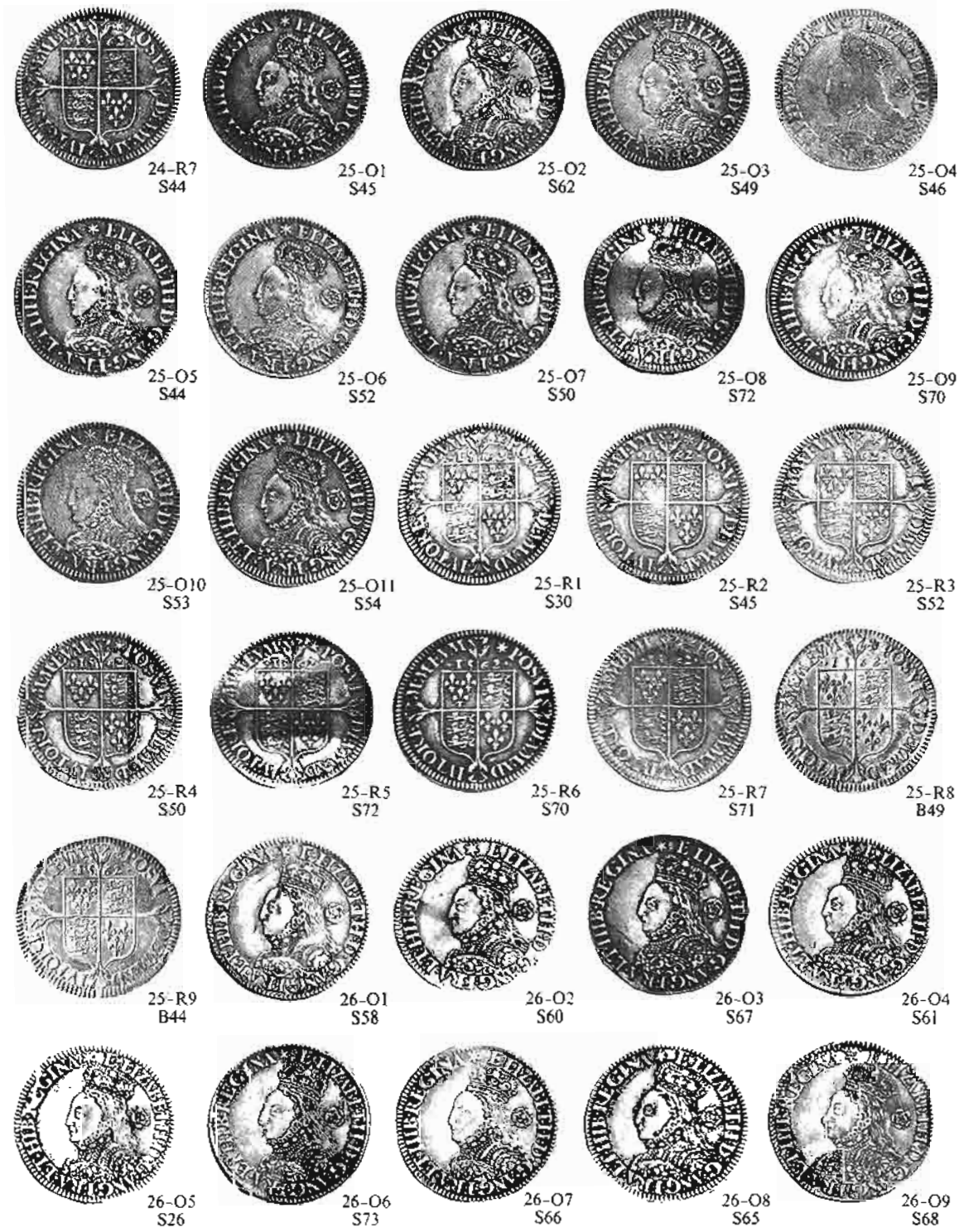
Shillings, Groats, and Halfgroats

PLATE 3



Sixpences 1561–2

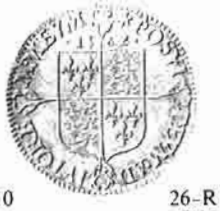
PLATE 4



Sixpences 1562

PLATE 5


26-O10
S59


26-R1
B45


26-R2
S26


26-R3
S69


26-R4
S65


26-R5
H4


26-R6
S59


27-O1
S56


27-O2
S27


27-O3
P70/11309


27-R1
S56


27-R2
P70/11309


28-O1
F34


28-R1
S80


29-O1
S80


29-O2
S81


29-O3
S82


29-O4
B53


29-R1
S82


29-R2
B53


30-O1
S84


30-O2
S83


30-O3
S85


30-R1
S84


30-R2
S85


31-O1
L2O49f


31-R1
L2049f


32-O1
S92


32-O2
B58


32-R1
B55

Sixpences 1562–3

PLATE 6


33-O1
B59


33-O2
S94


33-R1
B59


33-R2
B58


34-O1
S89


34-O2
S87


34-R1
S89


34-R2
B60


35-O1
S96


35-R1
S96


36-O1
B61


36-O2
S97


36-R1
S98


36-R2
S97


37-O1
D9


37-O2
S101


37-O3
B64


37-O4
S102


37-R1
S116


37-R2
S101


37-R3
B64


37-R4
S111


37-R5
S102


38-O1
S110


38-O2
B65


38-R1
S110


38-R2
B65

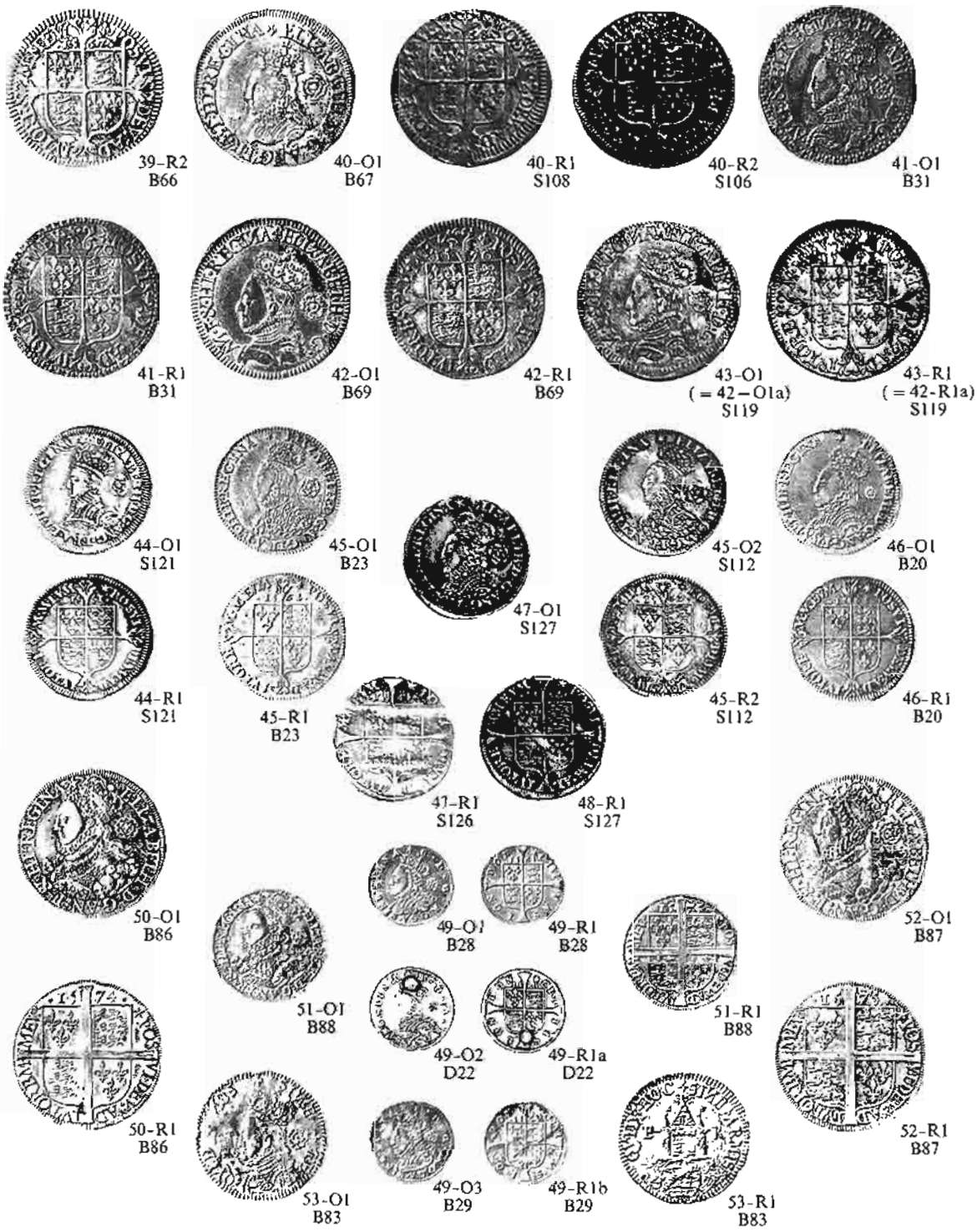

39-O1
F8


39-O2
B66


39-R1
F8

Sixpences 1564–7

PLATE 7



Sixpences 1567-71, Threepence, Threefarthings, Patterns, and Medals