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*Front cover:* Scottish silver ryal of Mary and Henry, Regular issue (not to scale); from dies A19/55, weight 468.3 grains. (See article "The Silver Ryals coinage of Mary, Queen of Scots")

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# The Silver Ryals coinage of Mary, Queen of Scots

David J Rampling

## Abstract

*This paper's primary purpose is to record an extensive die study of the silver ryals coinage of Mary, Queen of Scots. In addition to descriptions of dies and a chronology of their use, it has been possible to offer a classification that encompasses all the silver ryals and their fractions, to comment on contemporary operations of the Scottish mint, estimate original die numbers and compare these and obverse/reverse die ratios to similarly sized English coins, estimate mint outputs and numbers of extant coins, and identify rarities and the percentages of coins countermarked as a revaluing device in 1578. Commentaries on counterfeits, the emblematic significance of the palm tree/tortoise reverse design, and the popular 'Crookston dollar' epithet, complete the paper.*

## Keywords

[Crookston dollar] [dies] [Mary, Queen of Scots] [ryal] [Scottish coins] [Scottish mint]

## Introduction

The silver ryals coinage of Mary Queen of Scots, like the life under whose reign it was struck, has enigmatic accretions that make this series of coins a delight for numismatists and historians. The issue of face to face portrait ryals in 1565, inaugurated a series of large Scottish silver coins, albeit some fourteen years behind the initiative in England. The shrouded circumstances of their almost immediate withdrawal seem a prelude to the veiled mystery of the palm tree and tortoise reverse design of the subsequent regular issue, and the lore imputed to the series in ascribing a connection to Crookston Castle, in the popular 'Crookston dollar' epithet.

Knowledge of the dies used and their linkages has not significantly advanced for this coinage since Burns published his *magnum opus* in the nineteenth century,<sup>1</sup> although the published catalogues of the collections of the Hunterian and Ashmolean Museums, and National Museums Scotland, Edinburgh, have provided images, weights and brief annotations for coins held in these institutions.

It is perhaps surprising that the ryals coinage has hitherto escaped a detailed study, although this attempt to rectify the omission has proven sufficiently difficult to suggest an answer. All coins in the series are scarce, the one-third ryals being especially so,

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<sup>1</sup> Burns 1887.

making the assemblage of a sufficiently large corpus dependent on images of coins not available to hand. Initially, high quality photographs were obtained of coins in the collections of the Society of Antiquaries of Scotland, the British Museum, The Ashmolean Museum and the Hunterian Museum, images that have subsequently been published in the *Sylloge of Coins of the British Isles* (SCBI 35 and 58) and/or the internet. Archived internet images from other public collections and major auction houses are recent additions to this data bank. The desirability of handsome coins to collectors has led to many specimens having lengthy provenances, so that images of a coin may be replicated in a number of catalogues recording through whose hands it has left or is passing at the time of publication. Identifying duplicate images, where provenances have not been stated by the cataloguers, has been an obvious necessity.

The main focus of this paper is a die study of the ‘Type II Regular issues’ ryals and their fractions, to which a brief consideration of the ‘Type I Portraits issue’ ryals provides a prelude, and the newly styled ‘Type III Anomalous issues’ ryals, an enigmatic conclusion. There are no Type I or Type III two-thirds or one-third ryals. A descriptive listing of all observed dies is presented in tabular form in Appendix I with keys to access images of each die. The few known counterfeits, copies and electrotypes are briefly discussed in Appendix II. The discourse involving the emblematic significance of the palm tree/tortoise reverse design of Type II coins and the history of their popular association to Crookston Castle are reviewed in Appendices III and IV respectively.

## Typology and classification

### *Type I - Portraits issue (ryal)*

A once prevalent belief that this issue was not intended for circulation but was a celebratory marriage medal or pattern, may have drawn its inspiration from the nineteenth-century romantic ideas that have so coloured the histories of this queen.<sup>2</sup> The denomination’s status as a coin has also been obscured by later copies of similar but cruder execution that are undoubtedly medallic and of uncertain intent.<sup>3</sup> No official documents sanctioning Type I ryals are known, and their status as coins is adduced from a letter of December 1565 from Thomas Randolphe, Mary’s English ambassador, to Sir William Cecil in London. In this he states ‘that the money was coined, when they first married, with both their faces, and his name first, and that this was called in, and

2 Strickland 1853, IV, 104, provides a classical example: “Such then was Mary Stuart at two-and-twenty, when her heart had found, as she fondly believed, an object worthy of her affection; and ‘love’, to use the exquisite observation of St Pierre, the student of nature, ‘was giving forth all its beauty in the presence of the beloved.’”

3 There appears to be two varieties, one having the busts crowned [Cochran-Patrick 1884, Pl. I, Fig. 8] and the other uncrowned, as on the coin [Weir 2003, *First Section Illustrations*]. Mary’s name precedes that of Henry’s on both varieties. The medals are cast and tooled. Both varieties are extremely rare.

the alteration made in the new coinage;<sup>4</sup> of which he sent Cecil a specimen, describing its weight and value.<sup>5</sup>

The two known specimens are from identical dies. One is in the collections of the British Museum,<sup>6</sup> formerly in the Earl of Oxford collection, and the other in the National Museum of Scotland collection.<sup>7</sup> This latter coin is possibly the specimen reported to have been lost from the Sutherland collection.<sup>8</sup>

*Obv.* Busts of Henry and Mary face to face above date – 1565

 HENRICVS •  MARIA • D : GRA • R •  R • SCOTORVM

*Rev.* Crowned shield, medium thistles<sup>9</sup> each side

• QVOS • DEVS • COIVNXIT • HOMO • NON • SEPARET •

This reverse legend, signifying the sacredness of the conjugal union, was dispensed with for the regular issues and replaced with a legend having a tried and trusted precedent on the Scottish coinage. The EXVRGAT... legend first appeared on the gold unicorns and half-unicorns of James III and subsequently on the gold crowns of Mary dated 1561. The QVOS DEUS... legend was however reinstated as QVAE DEVS CONIVNXIT NEMO SEPARET on coins of James VI struck after the union of the crowns, as a convenient sign of the coming together of England and Scotland under his rule.

#### *Type II – Regular issues (ryal, two-thirds ryal, one-third ryal)*

The Act of the Privy Council of 22<sup>nd</sup> December 1565<sup>10</sup> gave specific instructions as to the design of the new coins, and their minting appears to have commenced during that month. In addition to proclaiming the union of Mary and Henry Darnley, the new coinage served pragmatic ends. In legislating that the ryal should be current for thirty shillings, when its silver content was then twenty-two shillings, the Crown not only secured a profit of eight shillings per coined ounce, but halted the outflow of silver to

4 Randolph to Cecil, Dec. 25, 1565, *State Papers MS*.

5 Strickland 1853, IV, 236.

6 Stewart 1967, 89, 178, Pl. XIII, 179. The BM specimen weighs 470.1 gr. *cf* 471.2 gr., the standard weight of the regular issue.

7 Holmes, N. M. McQ., 2006, Pl. 44, 1165A. The NMS specimen weighs 467.8 gr.

8 Cochran-Patrick 1884, 12.

9 The terms 'large', 'medium' and 'small' are here applied to the thistles on either side of the escutcheon and to the thistle mintmarks on the reverse of the coins. The widths of the thistle's globular head beneath the brush of florets are: 'large' – 3.7 mm, 'medium' – 2.6 mm, and 'small' – 2.2 mm. The size of the thistles on the obverses are used to discriminate groups of ryal and two-thirds ryal dies. The one-third ryals all have 'small' thistles on both obverse and reverse. The 'large' thistle mintmarks appear to derive from the same punches as those used on obverse dies. The two-thirds and one-third ryal denominations have the same sized mintmark thistles as the thistles on their respective obverses, but there are subtle differences between those flanking the escutcheon and the thistle mintmarks.

10 Cochran-Patrick 1876, I, 78

the Continent, where silver had hitherto been drawn on account of it being accorded a higher value. Officials were instructed to gather in the old silver money then circulating for melting into bullion for the new coinage. Whether the ryals coinage was entirely derived from earlier coin or whether the supply of silver was augmented from the influx of silver from the New World is unknown.

The design of all three denominations is the same. The escutcheon, a lion rampant within a double tressure, flanked on either side by a thistle - the reverse design of the portrait ryals - is made the obverse design of the new coins. The royal names and titles form the circumscribing legend, but Mary's name is placed before that of Henry's, unlike the arrangement on the Type I coins. The reverse displays a crowned palm tree with tortoise ascending the trunk and ornamented by a flowing scroll bearing the motto DAT GLORIA VIRE<sup>11</sup> across the trunk's upper reaches. The date numerals are equally divided on either side of the trunk. This whole central design is surrounded by the legend EXVRGAT DEVS ET DISSIPENTVR INIMICI EIVS<sup>12</sup> in contracted form.

Burns laid claim to noticing 'a large rose' on the back of the tortoise on the one-third ryal of 1565, by which sign he connected Darnley to the reptile and his royal English lineage.<sup>13</sup> Close scrutiny of well preserved specimens of this denomination and date suggest that the 'rose' is probably an illusion formed by the segmentation of the carapace.<sup>14</sup>

### Classification

The system adopted for all three denominations is based on two features of the obverse design: the rendering of the legend, and the size of the thistles on either side of the escutcheon.<sup>15</sup>

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11 'Glory gives strength'. Ovid, *Tristia* V, xii

12 'Let God arise and let His enemies be scattered' *Psalm* 68, 1

13 Burns 1887, II, 339.

14 Stewartby 2007, 225.

15 See Note 9

## RYAL

### Fourth period – Mary and Henry

A + • MARIA • ☞ • HENRIC<sup>9</sup> • DEI • GRA • R • ☞ • R • SCOTORV̄ •

Medium thistles

21 dies

B + • MARIA • ☞ • HENRIC<sup>9</sup> • DEI • GRA • R • ☞ • R • SCOTORV̄ •

Large thistles

25 dies

### Fifth period – Second widowhood

C + • MARIA • DEI • GRA • SCOTORVM • REGINA •

Large thistles

15 dies

D + • MARIA • DEI • GRA • SCOTORV̄ • REGINA •

Large thistles

1 die

## TWO-THIRDS RYAL

### Fourth period – Mary and Henry

A + • MARIA • ☞ • HENRIC<sup>9</sup> • DEI • GRA • R • ☞ • R • SCOTORVM •

Medium thistles

2 dies

B + • MARIA • ☞ • HENRIC<sup>9</sup> • DEI • GRA • R • ☞ • R • SCOTORV̄ •

Medium thistles

13 dies

C + • MARIA • ☞ • HENRIC<sup>9</sup> • DEI • GRA • R • ☞ • R • SCOTORV̄ •

Small thistles

8 dies



Fifth period – Second widowhood

D + • MARIA • DEI • GRA • SCOTORVM • REGINA •

Small thistles

6 dies

E + • MARIA • DEI • GRA • SCOTORV • REGINA •

Small thistles

1 die

**ONE-THIRD RYAL**

Fourth period – Mary and Henry

The thistles on either side of the shield are all of the small variety.

A + • MARIA • ET • HENRIC<sup>9</sup> • DEI • GRA • R • ET • R • SCOTORVM •

10 dies

B + • MARIA • ET • HENRIC<sup>9</sup> • DEI • GRA • R • ET • R • SCOTORV̄ •

1 die

C + • MARIA • ET • HENRICVS • DEI • GRA • R • ET • R • SCOTORVM •

3 dies

Fifth period – Second widowhood

D + • MARIA • DEI • GRA • SCOTORVM • REGINA •

1 die

The reverse dies for the ryals and two-thirds ryals have the legend:

 • EXVRGAT • DEVS •  • DISSIPENT<sup>R</sup> • INIMICI • EI<sup>9</sup> •

The reverse dies of the one-third ryals usually render EIVS in full rather than in contracted form.

*Type III – Anomalous issues (ryal)*

The classificatory system adopted is the same as that applied to the Type II ryals.

E     • HENRIC<sup>9</sup> • ☞ MARIA ; DEI • GRA • R • ☞ • R • SCOTORV •

Large thistles

1 die

F     + • MARIA • DEI • GRA • SCOTORVM • REGINA •

Large thistles. Broad escutcheon. (Marians issue)

2 dies

The Group E and Group F ryals subsumed under Type III are a curious and enigmatic assortment. It must be acknowledged that in distinguishing them from counterfeit productions I am relying on rather inconclusive historical and numismatic evidence, but also the more reassuring opinion of Joan Murray with whom I co-authored a brief commentary.<sup>16</sup>

The Group E ryals are distinguished by having Henry's name preceding that of Mary's. Mrs Murray made the observation that the reverse die was shared with a genuine coin dated 1566, and on that basis we came to the conclusion that the single specimen<sup>17</sup> then available for study was 'probably genuine despite its low weight'. Nicholas Holmes is more guarded in his opinion, suggesting that the coin 'appears more likely to be an irregular striking'.<sup>18</sup>

Four further specimens<sup>19</sup> of Group E have now come to attention, making a total of five coins available for study. All five coins are from identical obverse and reverse dies. None are countermarked. Their respective weights are 30.07g (464.1gr), 29.71g (458.5gr), 28.65g (442.1gr), 27.81g (429.1gr) and 25.77g (397.7gr).

It is now possible to record that the obverse die also derives from an authentic die, albeit significantly altered to give precedence to Henry's name. These Group E coins derive from a B9 obverse die and a 65 reverse die. The B9 die has had the regnal names filled in and puncheons used to render the first part of the legend HENRIC<sup>9</sup> • ☞ MARIA : Other minor alterations include the addition of a stop above the orb, the removal of the contraction mark above the V of SCOTORV, and the extension of the distal serif of this letter. The 65 die appears to be worn as the legend and design elements are somewhat

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<sup>16</sup> Rampling and Murray 1989.

<sup>17</sup> Ex. R. C. Lockett collection, part lot 913, now in the NMS collection, H.C4103.

<sup>18</sup> Holmes 2006, commentary to coin 1189, H.C4103.

<sup>19</sup> Three retained by Spink and Son, London, and another offered in Auction 35 of Davissons Ltd., Cold Spring.

blunted. The tortoise has been applied to the die with a new puncheon giving it a more 'lizard-like' appearance.

The ingenuity and dedication of the operators that produced these coins is a marvel, and their identity and motivation a mystery. Did a faction sensitive to the circumstances surrounding Henry's death and with access to old dies contrive these fabrications? Perhaps they were propaganda pieces or merely commercial fantasy productions. In any event, their fabricator(s) had the skills and access to equipment suggestive of a familiarity with the workings of the mint.

Their survival as a group of at least five coins with matched dies is not dissimilar in size to the commonest groups of identical coins in the sample of Type II ryals. Whilst it is likely that the Group E coins would have been selectively hoarded by antiquarians and collectors, they were possibly produced in quantity. The absence of the revaluation countermark on any of the five specimens may be attributable to a number of causes, and is thus an unhelpful arbiter of whether these coins circulated to any extent; nevertheless, the spread of weights of the coins suggest that conformity to the standard of the ordinance, as would be required for the regular currency, was not a priority.

The Group F ryals are represented by two coins, a second example having recently come to light. The two coins are from different obverse and reverse dies, but share the characteristics observed on the original coin. They display the design of the Fifth period, Second widowhood ryals, but have larger date numerals, and the diameter of the circle of pellets enclosing the central design on both the obverse and reverse is greater than for the Regular issue ryals. Mrs Murray and I provisionally ascribed the one example then known to the group of coins said to have been struck by Mary's adherents in Edinburgh Castle in 1572, although it must be acknowledged that the lure to provide tangible evidence of the historical reference<sup>20</sup> may have influenced this decision. In any event these coins appear to be contemporary productions 'by a hand well practised in engraving the Scottish symbols'<sup>21</sup>.

## Die study of Type II coins

### *Aims*

The study's primary aim was to identify, describe and classify the dies displayed by ryals, two-thirds ryals and one-third ryals in a comprehensive sample of this coinage drawn from institutional, private, retail and internet sources. The survey commenced in 1972 and was continued with varying degrees of application up to recent years when time became available to analyse the observations. The cut off point for a coin's inclusion in the study is 31<sup>st</sup> October 2015. The great majority of sources available since *circa*

<sup>20</sup> Burns 1887, II, 352.

<sup>21</sup> Rampling and Murray 1989.

1970 have been studied. The availability of coins for personal examination, or quality images of coins in the many instances when this was not possible, was the necessary pre-requisite for inclusion in the sample. The accumulated group of coins comprised all examples of the three denominations I was able to access by these means. I believe it to be an unselected and therefore representative sample of extant coins, encompassing a significant portion of surviving specimens. Inevitably there are coins in private collections either unknown to me or lacking available images, but while these sources may be numerous, it seems unlikely that many contain more than one or two relevant coins. Unpublished institutional holdings have not been accessed, but it is safe to assume that the published collections of British museums hold the great majority of ryals and their fractions.

The frequency with which collectors' coins re-appear on the open market, and the infrequent appearance of previously unknown coins, gives some indication of the number of coins outside institutional collections. On these criteria it seems likely that the combined total of the three denominations in all repositories, both private and public, is less than a thousand coins. The relative rarity of individual coins according to denomination, date and dies used, can be appreciated from the tabulated data.

A second aim was to establish the pattern of die links for each denomination, and in so doing glean insights as to the way dies were used and their approximate chronology of service. Estimates could then be made of the total number of obverse and reverse dies originally employed for each denomination, using appropriate algebraic formulae. Individual dies or groups of dies are distinguished for commentary, either on the basis of their singular usage, as for example, the dies of the undated two-thirds ryals, or because they exhibit unique or rare features.

### *Method*

The following resources provided the material for the study:

1. National Museums Scotland, Edinburgh – commissioned photographs; coins also illustrated in *SCBI* 58
2. Ashmolean Museum, Oxford and Hunterian Museum, Glasgow – commissioned photographs; coins also illustrated in *SCBI* 35 and at [http://www.fitzmuseum.cam.ac.uk/coins/emc/emc\\_search.php](http://www.fitzmuseum.cam.ac.uk/coins/emc/emc_search.php)
3. British Museum – commissioned photographs and personal examination; illustrations can also be accessed at [http://www.britishmuseum.org/research/collection\\_online/collection\\_object\\_details.aspx?](http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?)
4. Spink & Son Ltd., internet image archive - <https://www.spink.com/archive.aspx>

5. Dix, Noonan, Webb internet image archive - <http://www.dnw.co.uk/auction-archive/catalogue-archive/>
6. acsearch info, auction database - <http://www.acsearch.info/about.html>
7. Printed sale and auction catalogue images, predominately of the period 1970-2015
8. Spink's *Coins of Scotland Ireland and the Islands* – Third edition, 2015
9. Private collections – most by personal examination
10. Miscellaneous sources, each of isolated or few coins - photographs and/or personal examination

Care was taken to identify coins re-appearing on the market or present in more than one publication, so as not to gain falsely inflated numbers. Weights were noted where given or the coins weighed where this was possible.

It is perhaps worth emphasising that the sample, while representative of the original coinage, is not identical to it. This is an obvious handicap in a die study if the sample is small and possibly biased in its selection. The internet has been a boon in assembling a sufficiently large corpus where, as in this case, surviving coins are scarce. This spread of resources also gives credence to the claim that the sample is unbiased with regard to die representation, especially since hoards, which may produce quantities of die-duplicates, are not known to have contributed to surviving numbers. Many factors determine survival, including the predilections of collectors. The popularity of large coins may have been a factor in determining the apparent survival of more ryals than fractions, but there seems no reason for supposing that extant coins are unrepresentative in regard to their representation of dies. Collectors and museum curators do not appear to have chosen specimens with regard to dies, although coins struck both before and after Mary's second widowhood would have been sought for larger collections.

*Description of study group (confined to Type II - Regular issues)*

Ryal

*by obverse:*

Mary & Henry - 180 coins (91 cmk.) from 46 obverse dies

Mary - 50 coins (26 cmk.) from 16 obverse dies

*by reverse:*

1565 - 65 coins (34 cmk.) from 6 dies

1566 - 101 coins (49 cmk.) from 9 dies

1567 - 64 coins (34 cmk.) from 10 dies

## Two-thirds ryal

*by obverse:*

Mary &amp; Henry - 88 coins (22 cmk.) from 23 obverse dies

Mary - 32 coins (8 cmk.) from 7 obverse dies

*by reverse:*

1565 - 65 coins (16 cmk.) from 3 dies

1566 - 22 coins (6 cmk.) from 6 dies

1567 - 33 coins (8 cmk.) from 5 dies

## One third ryal

*by obverse:*

Mary &amp; Henry - 44 coins (12 cmk.) from 14 obverse dies

Mary - 9 coins (4 cmk.) from 1 obverse die

*by reverse:*

1565 - 38 coins (10 cmk.) from 3 dies

1566 - 7 coins (2 cmk.) from 1 die

1567 - 8 coins (4 cmk.) from 4 dies

Total number of coins: 403 (230 ryals, 120 two-thirds ryals, 53 one-third ryals); of these, 111 are in museums.

Whilst it cannot be assumed that the ratio of extant coin numbers between denominations in this sample approximates that of the original mintage, it is noteworthy that ryals were encountered twice as frequently as two-third ryals, which in turn were twice as common as one-third ryals.

A glance at Table 1 might suggest a gradual decline in mint output over time, but the silver ryals coinage of James VI commenced in 1567 must be taken into account, and is evidence of a maintained production.

|           | 1565 | 1566 | 1567 |  |     |
|-----------|------|------|------|--|-----|
| Ryals     | 65   | 101  | 64   |  | 230 |
| 2/3 Ryals | 65   | 22   | 33   |  | 120 |
| 1/3 Ryals | 38   | 7    | 8    |  | 53  |
|           | 168  | 130  | 105  |  | 403 |

**Table 1.** Number of each denomination in the sample by date

Ryals with the revaluation countermark of 1578 marginally outnumbered unmarked coins in the sample. This was not the case with the fractions where countermarked examples were scarcer than unmarked coins. Ryals may have been treated preferentially in the re-valuing as the countermark assured a dividend of 6s 9d for each coin, whereas the fractions, while re-valued at the same rate of 2¼ percent, yielded a smaller gain per strike. A parallel discrepancy between the larger and smaller coins is found with the testoons and their halves, despite both denominations being re-valued at double the rate of the ryals and fractions. Thus countermarked half-testoons of any of Mary's issues are very rare. Collector preferences over the centuries may have also favoured unblemished coins, especially for denominations of smaller module, where the countermarking process obliterated a proportionally greater area of the obverse and reverse design.

It would appear from the distributions of the three denominations across time that the minting of the two-thirds and one-third ryals may have been given initial priority over the ryals. The evidence for this being so is more obvious for the two-thirds ryals in view of their pre-eminent numbers for 1565, despite their total sample numbers being approximately half that of the ryals. There is also the extraordinary circumstance of the group A dies of this denomination having the same full rendition of SCOTORVM as observed on the Type I Portrait ryals. It seems plausible that the new initiative of striking large silver coins at the Scottish mint was further trialled with the more modestly sized modules of the two-thirds ryals, and that the engravers, having followed a precedent, subsequently decided that contracted spellings were more in accord with the available space, not only for this denomination but also for the ryals. The one-third ryals, if predominantly an early production, appear to have passed by this refinement, as with one exception, they bear a cluttered obverse legend until, like the larger denominations, they assumed the shorter legend dictated by Mary's second widowhood.

### *Die links and metrology*

The ratio of obverse to reverse dies within the sample as a whole is approximately 2.3:1. This is probably an underestimate of the disproportion between the two groups of dies as the relatively small number of coins yielded many obverse dies, some being represented by single coins. It is thus likely that more obverse dies were in use than noted here. By way of contrast, the number of reverse dies observed in the sample is almost certainly a closer approximation to their original number.

The preponderance of obverse dies indicates that these were engraved on the trussel, thus sustaining the direct hammer blow, and consequently suffering more damage than the reverse die on the pile.<sup>22</sup> This arrangement of the striking implements, contrary to

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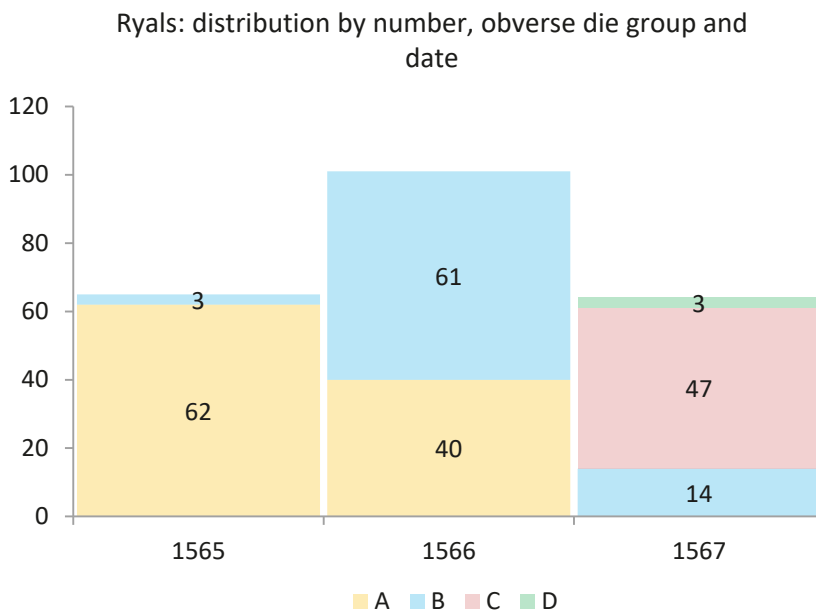
22 Discussions have arisen as to what determines the allocation of 'obverse' and 'reverse' to the sides of a coin. (See eg., *The E-Sylum*: Vol. 18, No. 22, May 31, 2015, Article 7). I have adhered to the conventional practice of regarding the side bearing the sovereign(s) name(s) and titles as the obverse.

the usual practice of having the obverse design on the pile, was probably determined by the complexity of the palm tree, scroll and tortoise reverse that required more detailed engraving than the escutcheoned obverse design. There may have been an occasional transposition in the allocation of the instrument bearing the obverse, as seems to have been the case with the one-third ryals dated 1567, where a single obverse die linked to four different reverse dies accounts for all eight coins of that date in the sample.

The die linkages suggest an approximate sequencing of the obverse dies, as individual or groups of dies appear loosely tied to one or more of the three dated reverses. It will be convenient to consider each of the three denominations separately before any conclusions are drawn.

### Ryal

The distribution of the four obverse die groups as linked to reverses of the three dates of issue is illustrated in Fig. 1. It can be seen that the Group A dies with the medium sized thistles on either side of the shield were pre-eminently responsible for the ryals of 1565, but still utilized in 1566. Those of Group B with the large thistles appear to have dominated in 1566 but extended over all three years, and Groups C and D with only Mary's name, confined to 1567.



**Figure 1**

The linkages of individual dies and the numbers of each die combination are illustrated in Table 2.



|         | 1565 |    |    |    |    |    | 1566 |    |    |    |    |    |    |    |    | 1567 |    |    |    |    |    |    |    |    |     |         |        |            |            |            |
|---------|------|----|----|----|----|----|------|----|----|----|----|----|----|----|----|------|----|----|----|----|----|----|----|----|-----|---------|--------|------------|------------|------------|
|         | 51   | 52 | 53 | 54 | 55 | 56 | 61   | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 71   | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 710 | n coins | n dies |            |            |            |
| A1      | 10   |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 10      | 1      | Cluster a1 |            |            |
| A19     |      |    |    |    | 4  | 4  |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 8       | 2      |            |            |            |
| A6      |      |    |    | 6  |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 6       | 1      |            |            |            |
| A5      |      |    | 2  |    |    | 3  |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 5       | 2      |            |            |            |
| A9      |      |    |    |    | 4  | 1  |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 5       | 2      |            |            |            |
| A7      |      |    |    | 2  |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 2       | 1      |            |            |            |
| A11     |      |    |    | 2  |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 2       | 1      |            |            |            |
| A3      |      |    |    | 1  |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 1       | 1      |            |            |            |
| A4      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     | 1       | 1      |            |            |            |
| A13     |      |    |    |    | 1  | 5  | 1    |    |    |    | 1  |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 8      | 4          | Cluster a2 |            |
| A2      | 2    | 3  |    |    |    |    |      |    |    |    | 1  |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 6      | 3          |            |            |
| A18     |      |    |    |    | 1  |    | 3    |    |    | 1  | 1  |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 6      | 4          |            |            |
| A8      |      |    |    |    |    | 3  | 1    | 2  |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 6      | 3          |            |            |
| A12     |      |    |    |    | 1  |    |      |    |    |    |    | 1  |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 2      | 2          |            |            |
| A16     | 1    |    |    |    |    |    |      | 6  |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 7      | 2          |            |            |
| A20     |      | 1  |    |    |    |    |      |    | 5  |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 6      | 2          |            |            |
| A15     |      |    |    |    |    |    |      | 1  |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 1      | 1          |            | Cluster a3 |
| A10     |      |    |    |    |    |    |      | 2  |    |    | 1  |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 3      | 2          |            |            |
| A14     |      |    |    |    |    |    |      | 2  |    | 2  |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 4      | 2          |            |            |
| A17     |      |    |    |    |    |    |      |    | 4  |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 4      | 1          |            |            |
| A21     |      |    |    |    |    |    |      | 1  |    | 8  |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 9      | 2          |            |            |
| B7      |      |    |    |    |    | 1  |      |    |    |    |    |    |    |    | 3  |      |    |    |    |    |    |    |    |    |     |         | 4      | 2          | Cluster b1 |            |
| B13     | 1    |    |    |    |    |    |      |    |    |    |    |    |    | 1  | 1  | 1    |    |    |    |    |    |    |    |    |     |         | 4      | 4          |            |            |
| B9      |      |    |    |    |    | 1  |      |    |    |    | 4  | 2  |    |    |    | 1    |    |    |    |    |    |    |    |    |     |         |        | 8          | 4          |            |
| B2      |      |    |    |    |    |    |      |    |    |    | 6  | 3  |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 9      | 2          | Cluster b2 |            |
| B24     |      |    |    |    |    |    | 2    |    |    |    | 2  |    |    |    |    | 1    |    |    |    |    |    |    |    |    |     |         |        | 5          |            | 3          |
| B1      |      |    |    |    |    |    |      |    |    |    | 2  |    |    |    |    | 2    |    |    |    |    |    |    |    |    |     |         | 4      | 2          |            |            |
| B10     |      |    |    |    |    |    |      |    |    |    |    | 4  |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 4      | 1          |            |            |
| B19     |      |    |    |    |    |    |      |    |    |    |    | 4  |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 4      | 1          |            |            |
| B23     |      |    |    |    |    |    |      |    |    | 1  |    |    |    |    | 1  | 2    |    |    |    |    |    |    |    |    |     |         | 4      | 3          |            |            |
| B4      |      |    |    |    |    |    |      |    |    |    |    |    | 2  |    |    |      |    |    |    |    |    |    |    |    |     |         | 2      | 1          |            |            |
| B5      |      |    |    |    |    |    | 2    |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 2      | 1          |            |            |
| B6      |      |    |    |    |    |    |      |    |    |    |    | 2  |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 2      | 1          |            |            |
| B14     |      |    |    |    |    |    |      |    |    |    |    |    |    | 2  |    |      |    |    |    |    |    |    |    |    |     |         | 2      | 1          |            |            |
| B18     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 2      | 1          |            |            |
| B22     |      |    |    |    |    |    |      |    |    |    | 1  |    | 2  |    |    |      |    |    |    |    |    |    |    |    |     |         | 3      | 2          |            |            |
| B8      |      |    |    |    |    |    |      |    |    |    | 1  |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 1      | 1          |            |            |
| B15     |      |    |    |    |    |    |      |    |    |    | 1  |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 1      | 1          |            |            |
| B17     |      |    |    |    |    |    |      |    |    |    |    | 1  |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 1      | 1          |            |            |
| B25     |      |    |    |    |    |    | 1    |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 1      | 1          |            |            |
| B21     |      |    |    |    |    |    |      | 1  |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 1      | 1          |            |            |
| B16     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    | 1  |    |    |    |    |    |     |         | 1      | 1          | Cluster b3 |            |
| B3      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    | 1  |    |    | 1  |    |    |    |     |         | 2      | 2          |            |            |
| B12     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    | 2  |    |    |    |    |    |    |     |         | 2      | 1          |            |            |
| B20     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    | 3  |    | 1  |    |    |    |     |         | 4      | 2          |            |            |
| B11     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    | 1  | 2  | 2  |    |    |    |    |     |         | 5      | 3          |            |            |
| C5      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    | 4  |    | 2  | 1  |    |    |    |     |         | 7      | 3          | Cluster c  |            |
| C11     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    | 1  |    |    |    |    |    |     |         | 6      | 2          |            |            |
| C6      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    | 2  | 1  | 1  | 2  |    |     |         | 5      | 1          |            |            |
| C7      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    | 5  |    |    |    |    |    |    |     |         | 5      | 1          |            |            |
| C3      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    | 4  |    |    |    |    |    |    |     |         | 4      | 1          |            |            |
| C1      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 3      | 1          |            |            |
| C13     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    | 3  | 1  |    |     |         | 4      | 2          |            |            |
| C14     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    | 1  | 1  |    |    | 1  |    |     |         | 3      | 3          |            |            |
| C2      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    | 1  |    |    |    |    |    |    |     |         | 2      | 2          |            |            |
| C8      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    | 2  |    |     |         | 2      | 1          |            |            |
| C4      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    | 1  |    |    |    |    |     |         | 1      | 1          |            |            |
| C9      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    | 1  |    |    |    |    |    |    |     |         | 1      | 1          |            |            |
| C10     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    | 1  |    |    |    |    |     |         | 1      | 1          |            |            |
| C12     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    | 1  |    |    |    |     |         | 1      | 1          |            |            |
| C15     |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    |    |    |    |    |    |    |     |         | 1      | 1          |            |            |
| D1      |      |    |    |    |    |    |      |    |    |    |    |    |    |    |    |      |    |    | 2  |    | 1  |    |    |    |     |         | 3      | 2          | d          |            |
| n coins | 14   | 4  | 2  | 1  | 14 | 17 | 7    | 18 | 8  | 12 | 17 | 15 | 10 | 5  | 9  | 4    | 20 | 7  | 4  | 7  | 2  | 4  | 6  | 6  | 4   |         | 230    |            |            |            |
| n dies  | 4    | 2  | 1  | 7  | 4  | 8  | 5    | 7  | 3  | 5  | 9  | 5  | 5  | 3  | 6  | 3    | 7  | 5  | 4  | 5  | 2  | 2  | 4  | 2  | 2   |         |        |            |            |            |

Vertical axis: Obverse dies, type A, B, C and D

Horizontal axis: Reverse dies grouped by date

**Table 2.** Ryal die link matrix showing the number of coins per die, the number of coins of each die combination, and the number of links per die.

While this chart suggests a certain sequencing of dies,<sup>23</sup> it relies on the unlikely assumption that individual dies had similar survival spans. Other factors affecting interpretation include the number of work stations, the number of dies embedded in the pile, the degree to which trussels and piles were interchangeable between work stations, and whether the dated dies were superseded by new reverses at the commencement of a new year. Such uncertainties render any temporal sequencing of the use of dies tenuous.

Bearing the forgoing caveats in mind, the obverse dies bearing the joint titles of Mary and Henry can be clustered into six groups according to their links to reverse dies as broadly categorized by date: three clusters for Group A dies, and three clusters for Group B dies. It is near certain that the Group A dies were of early manufacture as they share the same medium sized thistle puncheons used on the recalled portrait ryals.

Clusters a1, a2 and b1 are all linked to 1565 reverses, a1 exclusively so. It would appear that cluster a1 dies were operational from the outset of the coinage and abandoned by 1566. The clusters a2 and b1 may have either had exceptional survival times or come into use late in 1565. This latter scenario seems likely for the b1 cluster as only 19% in this cluster are linked to 1565 reverses, compared to over half of the a2 cluster. A combination of both factors is also possible. Cluster a3 obverses are linked exclusively to four 1566 reverses that are in turn each linked to one or more cluster a2 obverses. Two of these four reverse dies are linked to cluster b2 obverses, and are represented by only 6 of the 48 coins in the cluster, suggesting that cluster a3 dies were used early in 1566 being superseded by cluster b2 dies, also exclusive to that year. Clusters b3, c and type d dies are all linked to 1567 reverses; the cluster b3 dies may have taken precedence of use as they have the joint regnal titles. Thus a tentative sequencing of the obverse dies is a1, a2, b1, a3, b2, b3, c and d.

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23 The listing of obverse dies in the far left hand columns of Tables 2 and 3 does not follow a numerical sequence. The procedure by which the clustering of dies was determined was based on the proportion of coins in the sample derived from dies linked to reverses of a particular year, an allocation performed subsequent to the identification of the individual obverse dies. This identification began by observing the numbers of fleur-de-lis around the shield. The dies initially described and thus accorded a low numerical identifier were those having the greatest number of fleur-de-lis, a factor that tended to place these dies early in the temporal sequence. This correlation of fleur-de-lis numbers with a temporal sequence is by no means exact, especially for the two-third and one third ryals. I have thus not endeavoured to assign numeral sequencing to the dies lest this give the impression of a greater precision than that afforded by the designated clusters. It also enables newly discovered obverse dies to be added to the listing without being ordered within the trammels of a too narrow classification. Reverse dies are positioned in a row across the tops of the charts, with the first numeral of a two numeral signifier indicating the last date numeral. The second numeral distinguishes the die from others of the same year, and does not indicate any particular sequence.

I have dispensed with a numerical format to illustrate the die links of the one-third ryals in view of the small number of coins involved. (Table 4)

The sequencing of individual reverse dies within each of the dated groups is even less certain in view of their fewer number and longer survival times. It is enticing, for example, to assume that the two dies 63 and 64 preceded in use the other 1566 dies as they are exclusively linked to Group A obverses. It is, however, possible that the moneyer(s) working with a pile having either or both of these reverse dies affixed, was allocated only trussels bearing older obverse dies.

The Mary and Henry ryals dated 1567 provide a classic example of the engagement of older dies. Henry died in 1566 (old style) and yet the sample reveals that at least five obverse dies bearing his name are linked with five different reverse dies all dated 1567. The total of 14 specimens suggests that Burns' claim that 'these hybrid pieces are extremely rare'<sup>24</sup> is perhaps overstated.

It cannot be assumed that the sample displays all the dies that were originally used for this coinage. This is especially the case for the obverse dies where 14 dies are represented by single coins. There will inevitably be coins lost to posterity that displayed other dies.<sup>25</sup> The numbers of original reverse dies is more accurately reflected by the sample as all the identified dies are represented by a number of coins.

Various formulae have been devised for calculating original die numbers. All are based on the assumption that the sample is random, a criterion probably approximated in this widely garnered corpus. Applying appropriate formulae<sup>26</sup> gives an estimate of 74 original obverse dies, an increase of 12 over the observed number, and an estimate of 27 original reverse dies, an increase of two. Based on these estimates, it would appear that reverse dies had an average output two and three-quarter times that of obverse dies.<sup>27</sup>

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24 Burns 1887, II, 342.

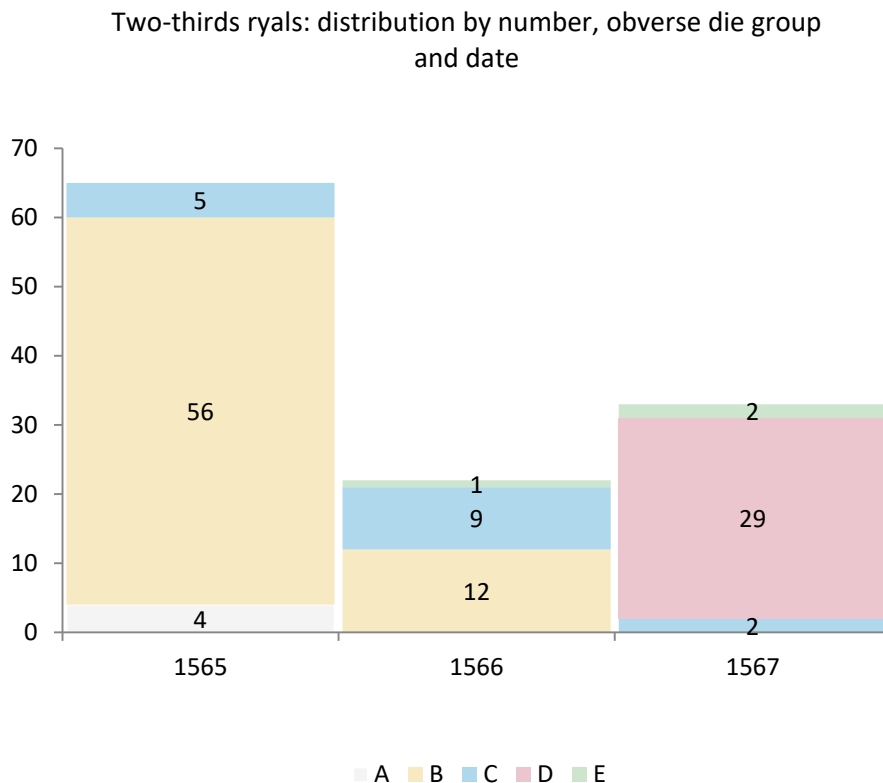
25 It is only possible to gain a very approximate indication of the numbers of coins struck. Burns (II, 337-338) quoting a contemporary source, gives the total weight of bullion coined into ryals and fractions between December 1565 and March 1572 as amounting to 562,209 ounces, this giving a currency value of £843,313/10/- (wrongly printed in Burns as £8433:13:10.). Making the very bold assumptions of a ratio of about 2:1 for the numbers minted under James compared with those under Mary, and equal numbers of each denomination, the figure obtained is 93,700 coins for each of the three denominations issued under Mary.

26 For obverse dies:  $D = n \times d / (1.069n - 0.843d)$  and for reverse dies:  $D = 0.95n \times d / (n - d)$ , where D is the original number of dies, n is the number of coins in the sample and d is the number of observed dies. (See - Giles F. Carter 2007, 'New Methods for Calculating the Original Number of Dies in a Given Series', *Numismatic Circular*, CXV, No. 3, 151-153) Calculated values derived from equations are hedged about by many qualifications. These are discussed by Stewart Lyon 1989, 'Die Estimation: Some Experiments with Simulated Samples of a Coinage', *BNJ* 59, 1-12.

27 While acknowledging the errors inherent in sample distribution, total mintage figures, and estimated number of original dies, the calculated mintage of 1266 coins per obverse die and 3470 coins per reverse die may be regarded as a 'best guess' of mean outputs.

## Two-thirds ryal

A similar pattern is exhibited by the two-third ryals (Fig. 2), the 1565 reverses being predominantly linked to obverses having ‘medium’ thistles either side of the escutcheon (Groups A and B) suggesting their precedence in use over the Group C dies (‘small’ thistles), although this latter group of dies is linked to reverse dies of all three dates. The reverse dies of 1566 link with Groups B, C and E, and those of 1567 with Groups C, D and E.



**Figure 2**

Individual die links are illustrated in Table 3. The caveats applied to Table 2 also apply to the ryal fractions.

|                   | 1565 |    |    | 1566 |    |    |    |    |    | 1567 |    |    |    |    | <i>n</i><br>coins | <i>n</i><br>dies |    |
|-------------------|------|----|----|------|----|----|----|----|----|------|----|----|----|----|-------------------|------------------|----|
|                   | 51   | 52 | 53 | 61   | 62 | 63 | 64 | 65 | 66 | 71   | 72 | 73 | 74 | 75 |                   |                  |    |
| A2                | 2    |    | 1  |      |    |    |    |    |    |      |    |    |    |    | 3                 | 2                | a  |
| A1                | 1    |    |    |      |    |    |    |    |    |      |    |    |    |    | 1                 | 1                |    |
| B1                | 3    | 3  | 1  |      |    |    |    |    |    |      |    |    |    |    | 7                 | 3                | b1 |
| B7                | 1    |    | 6  |      |    |    |    |    |    |      |    |    |    |    | 7                 | 2                |    |
| B5                | 1    | 3  |    |      |    |    |    |    |    |      |    |    |    |    | 4                 | 2                |    |
| B9                |      |    | 3  |      |    |    |    |    |    |      |    |    |    |    | 3                 | 1                |    |
| B4                | 1    |    |    |      |    |    |    |    |    |      |    |    |    |    | 1                 | 1                |    |
| B12               |      | 1  |    |      |    |    |    |    |    |      |    |    |    |    | 1                 | 1                |    |
| B13               |      |    | 1  |      |    |    |    |    |    |      |    |    |    |    | 1                 | 1                |    |
| B6                | 2    | 7  | 6  | 4    | 1  |    |    |    |    |      |    |    |    |    | 20                | 5                | b2 |
| B2                | 2    | 4  |    |      | 1  |    |    |    |    |      |    |    |    |    | 7                 | 3                |    |
| B3                | 1    | 4  | 1  |      | 2  |    |    |    |    |      |    |    |    |    | 8                 | 4                |    |
| B8                | 3    | 1  | 1  |      | 1  |    |    |    |    |      |    |    |    |    | 6                 | 4                |    |
| B11               |      |    |    |      |    |    |    | 2  |    |      |    |    |    |    | 2                 | 1                | b3 |
| B10               |      |    |    |      |    | 1  |    |    |    |      |    |    |    |    | 1                 | 1                |    |
| C1                | 2    |    |    |      |    |    |    |    |    |      |    |    |    |    | 2                 | 1                | c1 |
| C2                | 2    |    |    |      |    |    |    |    |    |      |    |    |    |    | 2                 | 1                |    |
| C3                | 1    |    |    |      |    |    |    |    |    |      |    |    |    |    | 1                 | 1                |    |
| C4                |      |    |    |      |    |    | 3  |    |    |      |    |    |    |    | 3                 | 1                | c2 |
| C5                |      |    |    |      |    |    | 2  |    |    |      |    |    |    |    | 2                 | 1                |    |
| C8                |      |    |    |      |    |    | 1  |    | 1  |      |    |    |    |    | 2                 | 2                |    |
| C7                |      |    |    | 1    |    |    |    |    |    | 1    |    |    |    |    | 2                 | 2                | c3 |
| C6                |      |    |    |      |    |    | 1  |    |    | 1    |    |    |    |    | 2                 | 2                |    |
| D3                |      |    |    |      |    |    |    |    |    | 10   | 3  |    |    |    | 13                | 2                | d  |
| D4                |      |    |    |      |    |    |    |    |    |      | 4  | 1  |    |    | 5                 | 2                |    |
| D6                |      |    |    |      |    |    |    |    |    |      |    |    | 5  |    | 5                 | 1                |    |
| D1                |      |    |    |      |    |    |    |    |    | 3    |    |    |    | 1  | 4                 | 2                |    |
| D2                |      |    |    |      |    |    |    |    |    | 1    |    |    |    |    | 1                 | 1                |    |
| D5                |      |    |    |      |    |    |    |    |    |      |    | 1  |    |    | 1                 | 1                |    |
| E1                |      |    |    |      |    |    | 1  |    |    |      |    |    | 2  |    | 3                 | 2                | e  |
| <i>n</i><br>coins | 22   | 23 | 20 | 5    | 5  | 1  | 8  | 2  | 1  | 16   | 7  | 2  | 7  | 1  | 120               |                  |    |
| <i>n</i><br>dies  | 13   | 7  | 8  | 2    | 4  | 1  | 5  | 1  | 1  | 5    | 2  | 2  | 2  | 1  |                   |                  |    |

**Table 3.** Two-thirds ryal die link matrix showing the number of coins per die, the number of coins of each die combination and the number of links per die. Vertical axis: Obverse dies, Groups A, B, C, D, and E. Horizontal axis: Reverse dies grouped by date.

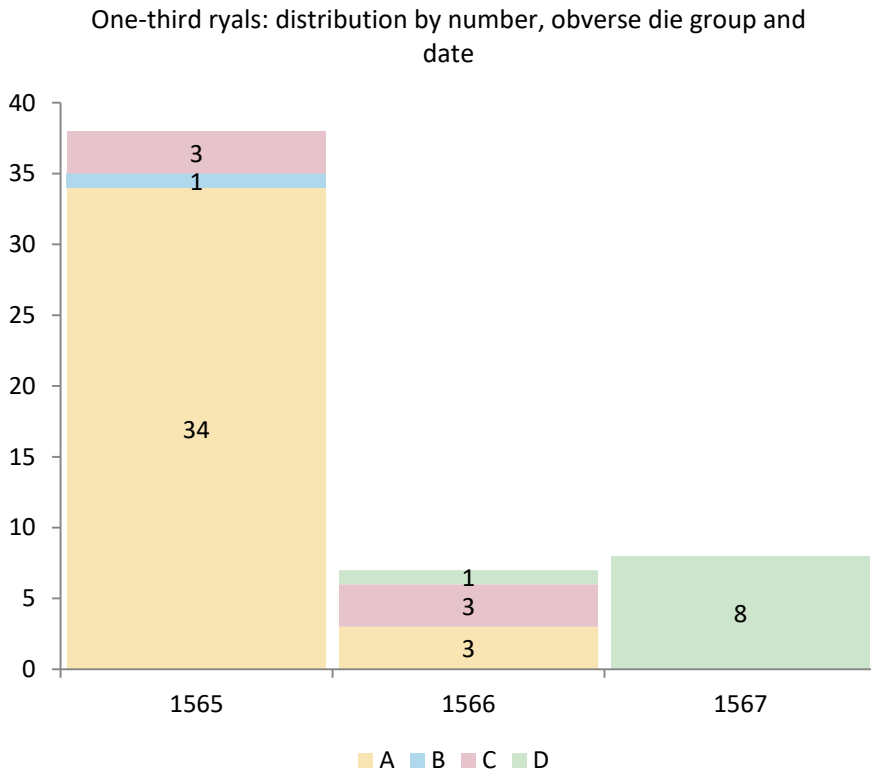
The four coins subsumed under cluster a, the undated two-thirds ryals, were perhaps the first of the Regular issue to be struck. They are derived from two obverse and two reverse dies. Their obverse dies are distinguished in having the complete rendering of SCOTORVM rather than the usual contracted spelling SCOTORV observable on all dated coins of Mary and Henry (Groups B and C). Unlike the two undated and subsequently re-used reverse dies with date added, the obverse dies do not appear to have had further use. There are, for example, no Group B dies that accord in all respects with dies A1 or A2 but with the removal of the terminal M. There is also no evidence that these A dies were derived from B dies that had had an M appended to SCOTORV. Being thus uniquely linked to undated dies, they may have served to easily identify the resulting aberrant or possibly trial coins. Some examples obviously escaped recall, if indeed recall was the intention, as witnessed by two of the four coins having the revaluation countermark of 1578.

The b1 and c1 clusters of obverse dies are exclusively linked to 1565 reverses; the b2 cluster were used for both 1565 and 1566 reverses, although the fewer number of surviving coins of the latter date suggests that their survival into 1566 may have been short-lived. One obverse die of this group (B6) appears to have been exceptionally productive, responsible for 20 coins, the mean being four per obverse die for this sample of 120 coins. The b3 and c2 clusters only appear to have been in use in 1566, although the small number of surviving representative coins renders this assessment tentative in distinguishing them from the even fewer coins representing clusters c3 and e, that are linked to both 1566 and 1567 reverses. The Group D dies are confined to 1567 and are linked to all five reverse dies of that year.

Calculations of original die numbers using the same formulae as for the ryals, gives estimates of 35 obverse dies (30 observed in the sample) and 15 reverse dies (14 observed in the sample), suggesting that on average, the reverse dies had an output two and a third times that of the obverse dies.

### One-third rial

The small number of one-third ryals in the sample renders any generalisation about this denomination speculative. The ten identified Group A obverses and the single Group B obverse are all linked to 1565 reverses, there being only one of the A group (A8) also linked to a 1566 reverse. The coins struck from Group C dies are equally spread across 1565 and 1566 (3 coins of each date), suggesting a later origin, and the single die of Group D is responsible for all coins dated 1567 and a single example dated 1566. (Fig. 3)



**Figure 3**

Table 4 illustrates the apparent use of a single obverse die (D1) for all one-third ryals struck from the four 1567 reverse dies (71, 72, 73, 74), and raises the likelihood that these coins were struck with the reverse die on the trussel and the obverse die on the pile. Alternative hypotheses would include the single obverse die being used at four or more work stations or at stations with more than one reverse die embedded in the pile.

|    | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | A10 | B1 | C1 | C2 | C3 | D1 |
|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|
| 51 | ×  | ×  | ×  |    | ×  |    |    | ×  |    |     |    | ×  |    |    |    |
| 52 |    | ×  | ×  | ×  | ×  |    |    |    |    |     |    |    |    |    |    |
| 53 |    | ×  | ×  |    | ×  | ×  | ×  | ×  | ×  | ×   | ×  |    | ×  |    |    |
| 61 |    |    |    |    |    |    |    | ×  |    |     |    | ×  |    | ×  | ×  |
| 71 |    |    |    |    |    |    |    |    |    |     |    |    |    |    | ×  |
| 72 |    |    |    |    |    |    |    |    |    |     |    |    |    |    | ×  |
| 73 |    |    |    |    |    |    |    |    |    |     |    |    |    |    | ×  |
| 74 |    |    |    |    |    |    |    |    |    |     |    |    |    |    | ×  |

**Table 4.** One-third ryal die link matrix showing the pattern of linkages for each die

The calculations of original die numbers yield 18 obverse dies (15 observed) and 9 reverse dies (8 observed), giving an average output for the reverse dies as twice that of the obverse dies.

## Discussion

The progressive decline in the ratios of calculated original obverse to reverse die numbers is noteworthy, being  $2\frac{3}{4}$  for ryals,  $2\frac{1}{3}$  for two-third ryals, and 2 for the one-third ryals, although the figure for the smallest denomination is compromised by the small number of coins and the likely reversal of obverse and reverse dies on the coining implements that struck the 1567 dated coins. Nevertheless, the observed progression, at least for the ryals and two-third ryals, is in keeping with the expectations of the relative vulnerability of dies on the trussel.<sup>28</sup> Trussels were more liable to damage in striking the larger coins as these required to be struck with a heavier hammer which tended to mutilate the die shanks.<sup>29</sup>

Individual obverse/reverse die ratios are influenced by the yearly dating of reverse dies and the alteration of the regnal titles on the obverse subsequent to Mary's second widowhood. It is therefore likely that some dies were abandoned while they were still otherwise serviceable. The effect of these variables on ratio values does not necessarily invalidate the relative progression noted above as the minting of all denominations was subject to the same constraints.

There is a subtle decline in die quality in all three denominations after 1565 as witnessed by surviving coins. Features in the design of both obverse and reverse dies become simpler and/or cruder. The ryals of 1565 have within their number nearly all coins struck from Group A dies exhibiting the full compliment of 16 fleur-de-lis on the outer border of the shield<sup>30</sup> (Plate 1, A3), a feature of the shield on the Type I portrait ryals, suggesting that these singularly embellished Group A dies were amongst the first to be made. The coins featuring this neat proliferation of ornament appear with the exception of two reverse dies<sup>31</sup> to be linked to all of the four reverse dies<sup>32</sup> having an elaborately edged scroll about the palm's trunk (Plate 1, 52) as opposed to the more usual straighter flat scroll. Two of the 'edged scroll dies'<sup>33</sup> also have a feint fine circular guide line surrounding the central motif, indicating care in the symmetrical execution of the dies. Guide lines also occur on two obverse dies<sup>34</sup> having the sixteen fleur-de-lis on

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28 Reference to Tables 2 and 3 will show that the greatest numbers of ryals in the sample struck from a single obverse die is 10, and 20 for a single reverse die, *cf* 20 and 23 coins respectively for the two-thirds ryals.

29 Cooper 1988, 39.

30 Only one of the 31 coins in this group (A1, A2, A3, A4, A5, A6 and A7) is linked to a 1566 reverse.

31 51 and 64.

32 52, 53, 54 and 56.

33 53 and 54.

34 A3 and A4.



the outer border of the shield. All these features suggest a level of quality control for the early issues.

Weights are available for two-thirds of the total sample of 403 coins. The suggested decline in mint standards might be expected to be reflected in less consistent weights of ryals minted after 1565.<sup>35</sup> The standard deviations from each of the mean weights of early and later groups of coins provide a comparative measure of uniformity. The standard deviations in the samples of ryals of known weight dated 1566 and 1567 are each significantly greater than those of 1565, although this measure of corroborative evidence must be tempered by the inevitable inconsistencies imposed by the wear and tear of circulated coins.<sup>36</sup>

Other evidence of progression to a somewhat *laissez faire* approach to the coining is also apparent with the later fractions. Whilst mistakes in legends, omitted design features, and evidence of minor die damage occur in all three denominations and across all three years, these are particularly conspicuous for the two-thirds ryal reverse dies of 1566 and 1567. Superimposed letters are adjustments on dies 64 and 66, and the small superscribed 'A' in EXVRGAT appears to be a late correction to die 73. A most arresting error is exhibited on the reverse of one-third ryals of 1566, where the tortoise is rendered incuse on the only die of that date.<sup>37</sup>

The two-thirds and one-third fractions in the sample did not show any significant differences in mean weights across the three years of issue,<sup>38</sup> nor was there any greater variance in the weights of the two-third ryals dated 1566 and 1567 compared to those of 1565. The small number of one-third ryals show greater variance in weight for coins dated 1565 than those of later date.<sup>39</sup> These results may appear to cast doubt on the value of weight variability as evidence of deteriorating mint standards, but the small numbers involved and the likely transposition of trussel and pile for the one-third ryals of 1567 probably invalidate a meaningful comparison. It is also the expectation that the coins of

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35 This measure is contingent upon there being approximately equal wear exhibited by the coins of each of the three years of issue for which weights are available, a condition met for ryals in the sample. In the few instances where two reported weights for a single coin were available, the mean weight was taken to be the coin's true weight; if the weights differed by more than 1 grain, the coin was eliminated from the calculation.

36 Comparison of standard deviations (F-test): 1566 *cf.* 1565,  $F = 3.74$ ,  $df_n = 61$   $df_d = 38$ ,  $p = <0.001$ ; 1567 *cf.* 1565,  $F = 3.11$ ,  $df_n = 38$   $df_d = 38$ ,  $p = <0.001$ ; 1566 *cf.* 1567,  $F = 1.20$ ,  $df_n = 61$   $df_d = 38$ ,  $p > 0.05$ . There are no statistically significant differences between the mean weights of the year groupings: 1565 = 466.7 gr., 1566 = 465.0 gr. and 1567 = 465.6 gr.

37 This die is also the only reverse die of the three denominations to have a cross instead of a thistle as the mintmark preceding the legend.

38 Mean weight for two-thirds ryals (all dates) = 311.4 gr. Mean weight for one-third ryals (all dates) = 153.4 gr.

39 Comparison of standard deviations (F-test): 1565 *cf.* (1566 + 1567),  $F = 4.65$ ,  $df_n = 29$ ,  $df_d = 13$ ,  $p = <0.001$

1565 having been in circulation one or two years longer than those of 1566 and 1567<sup>40</sup> might display the vagueries of wear and tear to a greater extent than those of the later years, rendering the difference in variance between early and later ryal weights even more remarkable.

The Privy Council, the overseers of contemporary operations at the Mint, had much to occupy them during the period 1566-7. The murders of Rizzio and Darnley, the birth of Prince James, and the arrangements for his subsequent baptism, must have drawn attention away from more pedestrian concerns. Perhaps the turmoil allowed unaccustomed license at the Mint, enabling not only a general decline in standards, but also the production of the anomalous ryals of 1566 with Henry's name preceding that of Mary. It is not hard to imagine such laxity enabling the Marians or others to continue minting on their own initiative and with their own dies.

### Comparable studies

There have been few die studies of English hammered crown sized silver coins that might have similar die histories to the ryals, or indeed of denominations comparable to the Scottish fractions. The publications of F. R. Cooper on the crowns of James I<sup>41</sup> and Charles I<sup>42</sup> are noteworthy, as is a less extensive but no less valuable die study of the crowns of Elizabeth I by D. A. Barr.<sup>43</sup> The approaches of these authors differ in some respects to the study now reported so that comparisons do not lend themselves to easy interpretation. All three English issues are of comparable rarity to Mary's ryals, but two of the three studies relied on substantially fewer coins for die identification and links. Both Cooper and Barr drew on a more circumscribed source of material for their studies than those used for the Scottish series. The scope of material now available to the researcher by way of the internet, provides the opportunity of gathering a large corpus of high quality images, which because of their diversity, avoids any homogeneity that may hamper the accuracy of a more select sample. Restrictions on publishing the location of every coin are nevertheless necessary, as many in the sample are drawn from private collections.<sup>44</sup>

40 An Act of Parliament of 24<sup>th</sup> October 1581 recalled the current silver coin for re-minting into the 40, 30, 20 and 10 shilling pieces of James VI; the time for receiving these pieces at the mint at Edinburgh expired on 1<sup>st</sup> July, 1582. It seems unlikely that proscribed coins that escaped being melted down would have had any circulation after this time (Burns, II, 366). The proportion of countermarked ryals is virtually the same for all three dates (1565 – 52%, 1566 – 49%, 1567 – 53%), giving no indication of any early withdrawal of the 1565 coins from circulation.

41 Cooper, F. R., 1970, "The English Silver Crowns of James I, a study of the dies and die combinations", *BNJ* XXXIX, 145-157

42 Cooper, F. R., 1968, "Silver Crowns of the Tower Mint of Charles I, a study of dies and die combinations", *BNJ* XXXVII, 110-37

43 Barr, D. A., 1998, "Further Observations on the Dies of the Silver Crowns of Elizabeth I", *NCirc* CVI, 2, 56-59

44 I welcome enquiries from anyone wishing to identify the provenance and/or context of any ryal or ryal fraction that is within or without the framework now published – email: rampling@ozemail.com.au

Cooper and Barr give significance to the number of observed ‘varieties’, by which is meant the total number of unique obverse/reverse die combinations exhibited by the sample. I confess to hesitation in according this measure significance, as it may suggest unique design elements rather than differing combinations of dies. Nevertheless, it is a simple matter to deduce from Table 2 that the sample of 230 ryals yielded 110 varieties. This compares with 20 varieties for the Elizabeth I crowns based on an unspecified sample size, 30 varieties for James I crowns based on a sample of 95 coins, and 75 varieties<sup>45</sup> for the Charles I crowns of the Tower mint based on a sample of 239 coins. The greater number of varieties in the present study hardly reflects any meaningful difference from the numbers reported for the English coins, as the Edinburgh moneyers had to contend not only with dated reverse dies, but with the changed obverse design subsequent to Mary’s second widowhood. These variables would have occasioned the abandonment of old dies for new, resulting in more varieties and more dies than those employed for the relatively homogenous issues of the English monarchs.

The English moneyers appear to have adopted the conventional practice of having the reverse die on the trussel and the obverse die on the pile. In all three coinages the numbers of reverse dies in the samples reported are significantly greater than the numbers of obverse dies, suggesting that the reverse dies suffered under the direct blows of the hammer. This arrangement was clearly expedient considering the very elaborate obverse designs of all three English issues.

It is worth noting that in England a decline in the standard of silver coin production, especially as exemplified by the crowns of James I, has been attributed to a relaxation of the threat of mechanization trialled at the Tower Mint by Eloye Mestrelle in the years 1561-1572.<sup>46</sup> Whether this was a factor influencing the earlier decline of minting standards as seemingly occurred with the later ryals of Mary in Scotland, can only be conjectured.

Students of the English coinage have had the advantage of referring to the dated Trials of the Pyx to determine the sequence of dies based on mintmark usage, a boon for which there is no available Scottish equivalent; hence the less direct and inferential methods of the present study.

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<sup>45</sup> Four additional varieties are noted as having been reported, but not verified by Cooper.

<sup>46</sup> Barr 1998.

## Conclusions

1. Assuming the sample is representative of extant coins, ryals are almost twice as prevalent as two thirds ryals, which are in turn twice as frequently encountered as one-third ryals. These ratios are probably not indicative of the comparative numbers struck, as the larger coins tend to be hoarded or collected in preference to smaller coins.
2. Given the frequency with which individual coins have reappeared on the market, the total number of extant coins of all three denominations is unlikely to exceed 1000, with probably generous approximations being: ryals – 570, two-thirds ryals – 300 and one-third ryals – 130.
3. Countermarked ryals are encountered as frequently as unmarked examples, but countermarked fractions are rarer than unmarked examples (25% of two-thirds ryals, and 30% of one-third ryals).
4. Some coins are exceedingly rare:
  - Denomination/date combinations
    - one-third ryal 1566, seven coins (five of these in museums)<sup>47</sup>
    - one-third ryal 1567, eight coins (five of these in museums)
  - Atypical legends
    - one-third ryal, 4<sup>th</sup> period, Group B, contracted obv. SCOTORV, one coin
    - undated two-thirds ryal, 4<sup>th</sup> period, Group A, full obv. SCOTORVM, four coins (two of these in museums)
    - ryal, 5<sup>th</sup> period, Group D, contracted obv. SCOTORV, three coins (two of these in museums)
5. The estimated number of original obverse and reverse dies exceeds the number evidenced by extant coins. Of the 62 ryal obverse dies exhibited in the sample, 14 are singletons; of 30 two-thirds ryal obverse dies, 8 are singletons; and of the 15 one-third obverse dies, 7 are singletons. Of the 25 ryal reverse dies, none are singletons; of the 14 two-thirds ryal reverse dies, 3 are singletons; and of the 8 one-third ryal reverse dies, 3 are singletons.
6. It is very likely that the output of individual dies varied considerably, as witnessed by the quantities of surviving coins struck from individual dies, and the large number of die links achieved by some dies compared with the very restricted linkages achieved by others; eg within the two-thirds ryal sample, die 51 in undated and then dated

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<sup>47</sup> Wingate 1868, 107, claimed never to have seen one-third ryals of 1566 or 1567.

formats, is linked to 13 obverse dies, *cf.* dies 63, 65 and 66 that are each linked to only one obverse die.

7. The number of each denomination in the sample for each year suggests that the smaller denominations may have been given precedence over the issue of ryals, either in output, sequencing or both. The distribution of the denominations across the three years of issue and the proportion each year's representation makes to the total for the denomination and for the year is displayed in Table 5. Percentages are shown in small numerals.

|         | ryals |     | % denom. |  | $\frac{2}{3}$ ryals |     | % denom. |  | $\frac{1}{3}$ ryals |     | % denom. |  |         |
|---------|-------|-----|----------|--|---------------------|-----|----------|--|---------------------|-----|----------|--|---------|
|         |       |     | % yr.    |  |                     |     | % yr.    |  |                     |     | % yr.    |  | total % |
| 1565    | 65    | 28  |          |  | 65                  | 54  |          |  | 38                  | 72  |          |  | 168     |
|         |       |     | 39       |  |                     |     | 39       |  |                     |     | 22       |  | 100     |
| 1566    | 101   | 44  |          |  | 22                  | 18  |          |  | 7                   | 13  |          |  | 130     |
|         |       |     | 78       |  |                     |     | 17       |  |                     |     | 5        |  | 100     |
| 1567    | 64    | 28  |          |  | 33                  | 28  |          |  | 8                   | 15  |          |  | 105     |
|         |       |     | 61       |  |                     |     | 31       |  |                     |     | 8        |  | 100     |
| total % |       | 100 |          |  |                     | 100 |          |  |                     | 100 |          |  |         |
|         | 230   |     |          |  | 120                 |     |          |  | 53                  |     |          |  | 403     |

**Table 5**

8. The undated two-third ryals may have been trial pieces, and their unique full obverse legend would have facilitated ready identification.
9. The 'quality control' at the Mint seems to have been less stringent after 1565 as evidenced by less care in the execution of dies, and a greater variance in ryal weights dated 1566 and 1567.

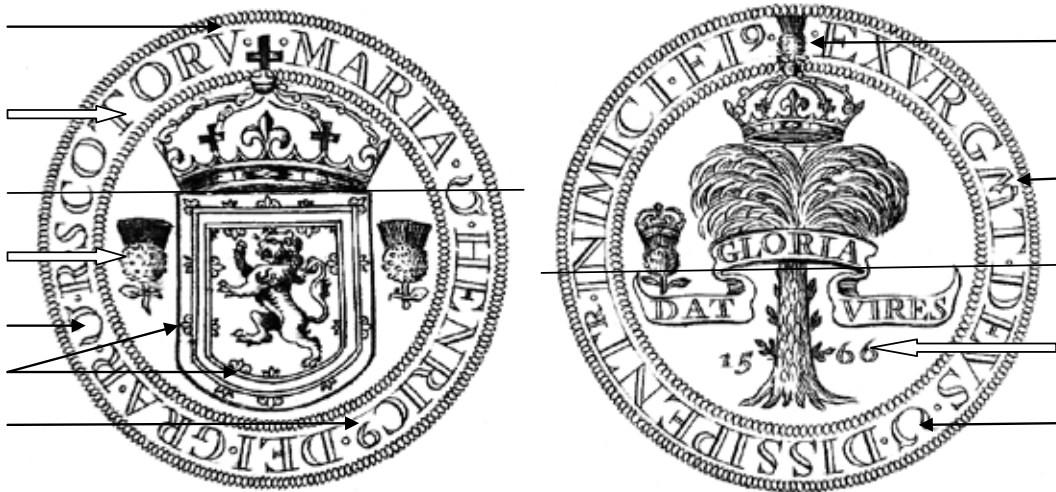
### **Appendix I: Descriptive tables of individual dies**

Individual obverse dies within each of the main groups (A, B, C etc.) are distinguished by one or more of the following features:

- a. The number of fleur-de-lis on the outer and inner borders of the shield
- b. The positions where a transverse projection along the upper border of the shield meets the legend
- c. The position and form of contractions
- d. Errors in the legend and other unusual design elements

Individual reverse dies are distinguished by date and one or more of the following features:

- a. The size of the thistle mintmark (ryals only) – small, medium, large
- b. The positions where a transverse projection touching the upper points of the lateral extremities of the scroll meets the legend
- c. The position and form of contractions
- d. Errors in the legend and other unusual design elements



**Figure 4.** Distinguishing features of dies - block arrows point to the determinants of the major die groups, and the line arrows and transverse projection lines are used to differentiate individual dies.

The following conventions have been adopted:

- (i) The obverse die group designation (A, B, C etc.) prefixes the die number.
- (ii) A forward slash separates the outer from the inner number of fleur-de-lis on the perimeter of the shield.
- (iii) The crossing points of projection and legend are indicated as right side of coin followed by left as observed.

The following abbreviations designate the printed reference or internet archive that hosts a particular image:

AMR – AMR Coins Ltd., Leeds, dealer inventory; <http://www.amrcoins.com/>

Baldwin – A. H. Baldwin and Son Ltd., London, auction; <http://www.baldwin.co.uk/>

- Baldwin list* – A. H. Baldwin and Son Ltd., London, bi-annual fixed price list; <http://www.baldwin.co.uk/>
- BM – British Museum, London; [http://www.britishmuseum.org/research/collection\\_online/collection\\_object\\_details.aspx?](http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?)
- Bonhams – Bonhams 1793 Ltd., auction; <https://www.bonhams.com/departments/CAT-CNS/CNG Coin Shop> – Classical Numismatic Group Inc., Lancaster, fixed price internet list; [https://cngcoins.com/Coins\\_sold.aspx](https://cngcoins.com/Coins_sold.aspx)
- CNG – Classical Numismatic Group Inc., Lancaster, auction; [https://cngcoins.com/Coins\\_sold.aspx](https://cngcoins.com/Coins_sold.aspx)
- Coinage of E. – Coinage of England Ltd., London, dealer inventory; <http://www.coinageofengland.co.uk/>
- DNW – Dix Noonan Webb, London, auction; <http://www.dnw.co.uk/auction-archive/catalogue-archive/>
- Glendining – Glendining & Co., London, auction
- Glendining/Spink – Glendining & Co in conjunction with Spink & Son Ltd., auction
- Heritage – Heritage Auctions, Dallas; <http://coins.ha.com/>
- Kittredge – Kittredge Numismatic Foundation; <http://www.kittredgecollection.org/>
- London – London Coins Ltd., Bracknell, auction; <http://www.londoncoins.co.uk/>
- NCirc. – Spink Numismatic Circular
- Noble – Noble Numismatics Pty Ltd., Sydney, auction; <https://www.noble.com.au/auctions/archive>
- Numismatik – Numismatik Lanz München, auction; <http://www.numislanz.com/>
- Omnicoïn – online numismatic community; <http://www.omnicoïn.com/>
- P – Private collection
- PF list* – Patrick Finn fixed price list
- SCBI 35 – *Sylloge of Coins of the British Isles 35* - Ashmolean Museum, Oxford and Hunterian Museum, Glasgow; [http://www.fitzmuseum.cam.ac.uk/coins/emc/emc\\_search.php](http://www.fitzmuseum.cam.ac.uk/coins/emc/emc_search.php)
- SCBI 58 – *Sylloge of Coins of the British Isles 58* - National Museums of Scotland, Edinburgh; [http://www.fitzmuseum.cam.ac.uk/coins/emc/emc\\_search.php](http://www.fitzmuseum.cam.ac.uk/coins/emc/emc_search.php)
- SCMB – *Seaby's Coin and Medal Bulletin*
- Sotheby – Sotheby & Co., London, auction; <http://www.sothebys.com/en/departments/coins.html>
- Spink – Spink & Son Ltd., London, auction; <https://www.spink.com/archive.aspx>
- Spink/Bowers/Ruddy - Spink & Son Ltd., London, and Bowers and Ruddy Galleries, Inc., Los Angeles., auction
- Spink 2015* – *Coins of Scotland, Ireland and the Islands, and Anglo-Gallic*, 3rd ed., London
- St James – St James's Auctions, London; <http://stjauctions.com/auction-archive/>
- Studio* – Studio Coins, Stephen and Janet Mitchell, fixed price list; <http://www.studiocoins.net/>



Triton – Classical Numismatic Group Inc., Lancaster, auction; [https://cngcoins.com/Coins\\_sold.aspx](https://cngcoins.com/Coins_sold.aspx)

World of C. – numismatic posting board; <http://www.worldofcoins.eu/forum/index.php?PHPSESSID=3168bc503bb6c6674f08a6439b8884d1&>

Other abbreviations:

bt. – bought from; *cf* – compared with; coll<sup>n</sup> – collection, & – ampersand; fdl – fleur-de-lis; l. – left; prox. – proximal<sup>48</sup>; pt. – part of; r. – right; ? – uncertain or unknown; + – cross surmounting crown

I have provided multiple provenances for some of the coins used to illustrate individual dies, not only as an additional source of images, but as evidence of the many published guises in which coins constituting the sample have appeared over the years. This multiplicity of appearances, especially for coins not residing in institutional collections, is characteristic of the corpus as a whole, and distinguishes it from research samples derived from hoard material. This fact has necessitated vigilant comparisons of images as many coins come on the market without a history.

Distinguishing features of the dies are set out in the following tables. I have endeavoured to provide a printed and internet image(s) for each die. Some web addresses display both obverse and reverse dies of the selected coin - the reference is, of course, to just one of these. All web addresses are operative at the time of writing, but should an address fail to yield an appropriate image, a search of the host site using the identifiers provided should meet with success. In the few instances where an internet image is unavailable, I have listed a second printed image, or where no published image is available, an illustration has been sourced for the Plates.

Semi-colons within a bracketed sequence separate different references to the same coin. A semi-colon or 'and' in open text separating two references indicates that the images are of different coins; where the web address follows directly from a reference, the internet image is of the referenced coin.

Individual references for sales are sequenced as auction or list number, date,<sup>49</sup> lot or reference number, followed by the provenance if known. Museum collections refer to printed or internet references. Occasional inconsistencies in these listing arrangements arise from singular sources or unknown information.

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<sup>48</sup> The anatomical terms 'proximal' and 'distal' succinctly describe those parts of the legend traversed by the projection lines. 'Proximal' indicates the near side or first part of a letter or symbol encountered as the legend is read clockwise, and 'distal', the far extremity of a letter or symbol.

<sup>49</sup> Dates are given as day/month/year, the year being shortened to its last two numerals, as the vast majority of sources refer to the past half-century; years outside this time-frame are given in full.



## Type I – Portraits issue

### Ryals

#### Obverse die

| Die    | Thistle | Design elements                          | Images   |
|--------|---------|--|--|
| unique | medium  | facing uncrowned busts of Henry and Mary | SCBI 58, 1165A;<br>BM 1849,0621.1<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339161&amp;objectid=895669">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339161&amp;objectid=895669</a> |

#### Reverse die

| Die    | Shield | Projection   | Errors /design elements                   | Images   |
|--------|--------|--|---|--|
| unique | 16/15  | bisects spine of E and passes through stop between N & S | medium thistles either side of escutcheon | SCBI 58, 1165A;<br>BM 1849,0621.1<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339162&amp;objectid=895669">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339162&amp;objectid=895669</a> |

## Type II – Regular issue

### Ryals

#### Obverse dies

| Die | Shield | Projection  | Errors /design elements   | Images  |
|-----|--------|---|---|---|
| A1  | 16/16  | bisects ☿ & distal limbs of C                             | no contraction above V; no serifs on small ampersands                                     | SCBI 35, 1121/H<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1121obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1121obv.jpg</a>  |
| A2  | 16/15  | prox. third ☿ & distal third S; E of DEI under bottom lis |   | Spink 57, 29/4/87, 223, J.K.R.Murray Coll <sup>n</sup> ; Heritage 2/6/06, 14855<br><a href="http://www.mcsearch.info/ext_image.html?id=629462">http://www.mcsearch.info/ext_image.html?id=629462</a>                        |
| A3  | 16/15  | prox. ☿ & prox. C; E of DEI under bottom lis              | no jewels on crown spikes; line around escutcheon; blunted serifs; feint inner guide line | P (Plate 1)   |
| A4  | 16/15  | bisects ☿ & C   | blunted serifs on small 2 <sup>nd</sup> ampersand; feint inner guide line                 | DNW 7/10/04, 716<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=104654">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=104654</a> |

| Die | Shield | Projection                      | Errors /design elements  | Images  |
|-----|--------|---------------------------------|--|---|
| A5  | 16/14  | prox. border & & prox. border C | HENRC <sup>9</sup> ; no serif 2 <sup>nd</sup> ampersand                                | Spink 57, 29/4/87, 224, J.K.R.Murray Coll <sup>n</sup> ; (Spink/Bowers/Ruddy 19/2/76, 214, Dundee Coll <sup>n</sup> ); <a href="http://www.cngcoins.com/Coin.aspx?CoinID=247732">http://www.cngcoins.com/Coin.aspx?CoinID=247732</a>  |
| A6  | 16/13  | distal third & & bisects C      |  | SCBI 58, 1170 and 1171; DNW 17/9/13, 323 <a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=234551">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=234551</a>  |
| A7  | 16/12  | prox. third & & prox. third C   | no serif 2 <sup>nd</sup> ampersand   | PF memorial list 01, 359 (CNG 87, 18/5/11, 2128); BM 1946,1004.710 <a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339190&amp;objectid=895667">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339190&amp;objectid=895667</a>      |
| A8  | 15/14  | prox. limb & & distal tip S     | no serifs either ampersand; lion displaced to l. on shield                             | Spink 57, 29/4/87, 225, J.K.R.Murray Coll <sup>n</sup> ; BM 1910,0405.1 <a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339177&amp;objectid=895668">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339177&amp;objectid=895668</a> |
| A9  | 12/12  | distal limb & & bisects C       |  | SCBI 58, 1169; BM 1867,0715.3 <a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339211&amp;objectid=895665">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339211&amp;objectid=895665</a>   |
| A10 | 12/12  | prox. limb & & distal limb S    |  | Spink 119, 4/3/97, 354, Douglas Coll <sup>n</sup> <a href="http://www.spink.com/lot-description.aspx?id=1012974">http://www.spink.com/lot-description.aspx?id=1012974</a>   |
| A11 | 12/11  | stop after & & prox. border C   |  | SCMB 709, J78 (Glendining 24/3/77, 496)   |
| A12 | 12/11  | between A & & & bisects S       |  | SCBI 58, 1168; Spink 189/7018, 27/6/07, 153, Wilson Coll <sup>n</sup> (Baldwin 7/5/03, 405) <a href="http://www.spink.com/lot-description.aspx?id=7018153">http://www.spink.com/lot-description.aspx?id=7018153</a>   |
| A13 | 12/11  | prox. limb & & bisects S        | no serif 1 <sup>st</sup> ampersand; gap between lion's head and inner border of shield | PF list 8, 96, 381, and Summer list 94, 375; SCBI 35, 1120 <a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1120obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1120obv.jpg</a>  |
| A14 | 12/11  | bisects & & prox. border C      |  | Sotheby, 15-16/6/72, 499, Bridgewater Hse. Coll <sup>n</sup> ; Triton VIII, 1821 <a href="http://www.cngcoins.com/photos/big/681821.jpg">http://www.cngcoins.com/photos/big/681821.jpg</a>  |

| Die | Shield       | Projection  | Errors /design elements                               | Images   |
|-----|--------------|---|---|--|
| A15 | 12/11 or ?10 | bisects ☿ & distal limb of S  |   | SCBI 35, 1122/H<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1122obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1122obv.jpg</a>   |
| A16 | 12/11        | prox. limb ☿ & stop between R & S   | V of SCOTORV sits on l. limb of orb cross             | Baldwin Winter list 12-13, SC005; Spink 189/7018, 27/6/07, 152, Wilson Coll <sup>n</sup> .<br><a href="http://www.spink.com/lot-description.aspx?id=7018152">http://www.spink.com/lot-description.aspx?id=7018152</a>  |
| A17 | 12/10        | bisects ☿ & distal limb of S  | no jewels on band of crown                            | Sotheby, 15-16/6/72, 498, Bridgewater Hse. Coll <sup>n</sup> (NCirc., Feb. 76, 1154); DNW 5/12/12, 666<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=223485">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=223485</a>  |
| A18 | 11/11        | prox. limb ☿ & prox. third of S   |   | SCBI 35, 1119/A; DNW 63, 7/10/04, 715, McDonald Coll <sup>n</sup><br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=104653">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=104653</a>   |
| A19 | 10/11        | distal limb ☿ & immediatly beneath C  | only 3 fleur-de-lis on upper outer border of shield   | Spink 189/7018, 27/6/07, 151, Wilson Coll <sup>n</sup> (Glendining, 26/10/60, 909, Lockett Coll <sup>n</sup> )<br><a href="http://www.spink.com/lot-description.aspx?id=7018151">http://www.spink.com/lot-description.aspx?id=7018151</a>  |
| A20 | 10/11        | prox. border ☿ & prox. border C   | I of HENRIC rendered by poorly defined C, thus HENRCC | SCBI 58, 1182; BM 1939,0319.22<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339293&amp;objectid=895663">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339293&amp;objectid=895663</a>  |
| A21 | 10/11        | distal limb ☿ & prox. third of C  | only 4 fleur-de-lis on upper outer border of shield   | Spink/Bowers/Ruddy 19/2/76, 219, Dundee Coll <sup>n</sup> ; BM E.2632<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339331&amp;objectid=895662">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339331&amp;objectid=895662</a> |
| B1  | 12/12        | bisects ☿ & C; bottom lis above I   |   | PF list 16, 99, 412; NCirc. May 81, 4064   |
| B2  | 12/12        | bisects ☿ & C; bottom lis points between I & E                              |   | SCBI 58, 1174; DNW 63, 7/10/04, 717, McDonald Coll <sup>n</sup><br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=104655">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=104655</a>   |
| B3  | 12/12        | bisects ☿ & C; bottom lis above E   | well defined oval tops to thistles                    | SCBI 58, 1185; <a href="http://www.kittredgedgecollection.org/display/d1e141206">http://www.kittredgedgecollection.org/display/d1e141206</a>   |
| B4  | 12/12        | distal third ☿ & prox. border C; bottom lis double stamped (counted as one) | HENRC   | SCBI 58, 1184; Spink 189/7018, 27/6/07, 154, Wilson Coll <sup>n</sup> <a href="http://www.spink.com/files/lotMain/7018/7018_154_1.jpg">http://www.spink.com/files/lotMain/7018/7018_154_1.jpg</a>  |

|     |       |  |  |   |
|-----|-------|--|--|---|
| B5  | 12/12 | bisects ☞ & C  | small ampersands, no serif on 2 <sup>nd</sup> ☞; no ornament on r. inner arch of crown   | Spink 179/6029, 29/3/06, 122, LaRiviere Coll <sup>n</sup> ;<br>BM E.2630<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339202&amp;objectid=895666">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339202&amp;objectid=895666</a> |
| B6  | 12/12 | prox. limb ☞ & back of C & distal tip S                                  |  | SCBI 35, 1123;<br>SCBI 35, 1124<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1124obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1124obv.jpg</a>  |
| B7  | 12/11 | distal limb ☞ & prox. border C   | small ampersands   | Noble 72, 26-28/3/03, 1153<br><a href="http://www.noble.com.au/auctions/lot/?id=39196">http://www.noble.com.au/auctions/lot/?id=39196</a>   |
| B8  | 12/11 | bisects ☞ & C  | small ampersands, bottom lis above I   | Spink 156/1286, 15/11/01, 268, Van Roekel Coll <sup>n</sup> . (NCirc. Oct/73, 7974)   |
| B9  | 12/11 | bisects ☞ & C  | upper limb of C of HENRIC bifurcates; die crack between lion's l. paw & 11 <sup>th</sup> inner lis; arms of orb cross merge with circle of denticles | Glendining 6/3/74, 151, Hird Coll <sup>n</sup> ;<br>BM 1959,1206.1<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339337&amp;objectid=895661">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339337&amp;objectid=895661</a>       |
| B10 | 12/11 | bisects ☞ & distal limb & border S                                       |  | SCBI 58, 1173;<br>BM E.2631<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339285&amp;objectid=895664">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339285&amp;objectid=895664</a>  |
| B11 | 12/11 | bisects ☞ & prox. third of C; DEI spaced, bottom lis above E             | double lis behind lion's rump  | SCBI 58, 1186-7;<br>Spink 119, 4/3/97, 355, Douglas Coll <sup>n</sup> . (Glendining 18/6/57, 341, Lockett Coll <sup>n</sup> .)<br><a href="http://www.spink.com/lot-description.aspx?id=13012655">http://www.spink.com/lot-description.aspx?id=13012655</a>   |
| B12 | 12/11 | distal limb ☞ & distal limb & border S                                   |  | SCBI 58, 1188;<br>Triton XVII 7-8/1/14, 1489<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=247722">http://www.cngcoins.com/Coin.aspx?CoinID=247722</a>   |
| B13 | 12/11 | prox. third ☞ & stop between R & S                                       | no stop after SCOTORV; foot of V rests on l. arm of orb cross  | P (Plate 1);<br>DNW 17/9/13, 325, Chesser Coll <sup>n</sup> . (Glendining 22-4/ 1/52, part 1364, V.J.E. Ryan Coll <sup>n</sup> , Part II)<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=234553">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=234553</a>  |
| B14 | 12/11 | bisects ☞ & prox. border C; bottom lis points to prox. side of foot of I |  | P (Plate 1);<br>Omnicoins, coinpeople2007 coll <sup>n</sup> . PC17, group 2<br><a href="http://www.omnicoin.com/viewcoin/935296">http://www.omnicoin.com/viewcoin/935296</a>  |
| B15 | 12/11 | prox. quarter of ☞ & bisects S   | small ampersands, no serif on 1 <sup>st</sup> ; l. side thistle smaller than r.  | Heritage 4/1/10, 22884 <a href="http://www.mcsearch.info/ext_image.html?id=670584">http://www.mcsearch.info/ext_image.html?id=670584</a>  |

|     |       |   |  |  |
|-----|-------|---|--|--|
| B16 | 12/11 | distal third & C  | stops either side of orb cross directly above horizontal arm of cross      | Spink 57, 29/4/87, 227, J.K.R.Murray Coll <sup>n</sup> .   |
| B17 | 12/11 | prox. third & prox. border C  | HENR•IC  | Baldwin 18, 12-13/10/98, 1894  |
| B18 | 12/11 | bisects & & prox. border C; bottom lis points to distal side of foot of E | no bottom inner lis; 2 <sup>nd</sup> ampersand has thickened proximal limb | Baldwin 30, 7-8/5/02, 674; World of C., 3/11/07, lusomosa <a href="http://www.worldofcoins.eu/forum/index.php/topic,892.0/nowap.html">http://www.worldofcoins.eu/forum/index.php/topic,892.0/nowap.html</a>  |
| B19 | 12/10 | bisects & & S   | small ampersands, especially 2 <sup>nd</sup>                               | SCBI 58, 1176-8; Spink 57, 29/4/87, 226, J.K.R.Murray Coll <sup>n</sup> .  |
| B20 | 12/10 | bisects & & prox. border C  | I in HENRIC squeezed in between R and C                                    | SCBI 35, 1125 <a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1125obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1125obv.jpg</a> and Spink 189/7018, 27/6/07, 155, Wilson Coll <sup>n</sup> . (DNW 11/12/02, 287; Spink/Bowers/Ruddy 19/2/76, 222, Dundee Coll <sup>n</sup> ) <a href="https://www.spink.com/lot-description.aspx?id=7018155">https://www.spink.com/lot-description.aspx?id=7018155</a> |
| B21 | 12/10 | prox. third & S   | large ampersands   | Bonhams 17/10/06, 1707, Clarendon Coll <sup>n</sup> ; Spink 39, 6/12/84, 129, A. Mallinson Coll <sup>n</sup> .   |
| B22 | 12/11 | bisects & & C   | r. upper outer fdl double struck   | Triton XVII 7-8/1/14, 1501 <a href="http://www.cngcoins.com/Coin.aspx?CoinID=247734">http://www.cngcoins.com/Coin.aspx?CoinID=247734</a>   |
| B23 | 11/11 | bisects & & foot of S   |  | SCBI 58, 1172; CNG 91, 19/9/12, 1571 (Triton XIII, 5/1/10, 2113; St. James 7, 531) <a href="http://www.cngcoins.com/photos/big/83002113.jpg">http://www.cngcoins.com/photos/big/83002113.jpg</a>   |
| B24 | 10/11 | bisects & & prox. border of C   | only 3 lis on top border of shield   | Spink 119, 4/3/97, 357, Douglas Coll <sup>n</sup> ; St James 12, 5/11/09, 1403, Major Poll Coll <sup>n</sup> <a href="http://www.mcsearch.info/ext_image.html?id=243903">http://www.mcsearch.info/ext_image.html?id=243903</a>   |
| B25 | 12/10 | bisects & & prox. foot of S   | ornate serifs on first ampersand   | Coinage of E. <a href="http://www.coinageofengland.co.uk/ryal-58813.htm">http://www.coinageofengland.co.uk/ryal-58813.htm</a>  |
| C1  | 12/12 | prox. tips of D & through distal limbs of E                               |  | Spink 64, 23/6/88, 311 (Glendining 14/5/75, 12, Gilboy Coll <sup>n</sup> ); Heritage 7/1/08, 52350 <a href="http://www.mcsearch.info/ext_image.html?id=644779">http://www.mcsearch.info/ext_image.html?id=644779</a>   |
| C2  | 12/12 | bisects A & R; inner bottom lis slightly to r. of outer lis               |  | SCBI 58, 1223; PF Summer list, 94, 376   |
| C3  | 12/12 | just beneath distal foot of A (through stop) & between R & E              |  | Baldwin 30, 7-8/5/02, 678; SCBI 35, 1133 <a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1133obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1133obv.jpg</a>   |

|     |                |   |   |   |
|-----|----------------|---|---|---|
| C4  | 12/12          | distal limb of A &<br>prox. foot of E   |   | BM 2638<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375678&amp;objectid=1048907">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375678&amp;objectid=1048907</a>                                  |
| C5  | 12/11          | between A & D &<br>prox. third of E     | initial & terminal<br>stops equidistant<br>from orb cross   | SCBI 58, 1222;<br>BM SSB,26.130<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375674&amp;objectid=1048909">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375674&amp;objectid=1048909</a>          |
| C6  | 12/11          | between A & D &<br>bisects E            | terminal stop mid-<br>point between distal<br>foot of A and arm of<br>orb cross; stop after<br>MARIA variable | SCBI 58, 1224;<br>SCBI 35, 1131<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1131obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1131obv.jpg</a>  |
| C7  | 12/11          | distal foot of A &<br>bisects E         | M of SCOTORVM<br>repunched over<br>misplaced M  | SCBI 35, 1134;<br>BM E.2637<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339345&amp;objectid=1048908">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339345&amp;objectid=1048908</a>              |
| C8  | 12/12<br>or 11 | bisects A & E                           |   | P. (Plate 2);<br>Spink 12009, 28-29/3/12, 995, Magnus Coll <sup>n</sup><br><a href="http://www.spink.com/files/lotMain/12009/12009_995_1.jpg">http://www.spink.com/files/lotMain/12009/12009_995_1.jpg</a>  |
| C9  | 12/11          | prox. border D &<br>bisects E           | orb skewed to left of<br>crown  | P. (Plate 2);<br>Heritage A. 18/4/11, 24811<br><a href="http://www.mcsearch.info/ext_image.html?id=691679">http://www.mcsearch.info/ext_image.html?id=691679</a>  |
| C10 | 12/9           | distal foot of A &<br>bisects E         |   | Sotheby, 15-16/6/72, 501, Bridgewater House<br>Coll <sup>n</sup> .  |
| C11 | 12/10          | distal limb of A &<br>prox. foot of E   | top of r. thistle above<br>D  | SCBI 35, 1132;<br>Heritage 4/1/10, 22885<br><a href="http://www.mcsearch.info/ext_image.html?id=670583">http://www.mcsearch.info/ext_image.html?id=670583</a>   |
| C12 | 12/11          | distal foot of A &<br>distal third of R | top of r. thistle just<br>below prox. foot of D   | Kittredge, 8462, Kittredge coll <sup>n</sup><br><a href="http://www.kittredgecollection.org/display/d1e119122">http://www.kittredgecollection.org/display/d1e119122</a>   |
| C13 | 11/10          | distal foot of A &<br>distal third of R |   | P. (Plate 2);<br>NCirc. Oct. 94, 6535   |
| C14 | 11/10          | distal foot of A &<br>distal foot of R  |   | PF list 11, 97, 460;<br>BM 1946,1004.709<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?assetId=1375662&amp;objectId=1048910&amp;partId=1">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?assetId=1375662&amp;objectId=1048910&amp;partId=1</a> |
| C15 | 11/10          | distal foot of A &<br>between E & G     |   | P. no image available   |

|    |       |               |  |   |
|----|-------|---------------|--|---|
| D1 | 12/10 | bisects A & E |  | P. ( <b>Plate 2</b> );<br>SCBI 58, 1220-1 |
|----|-------|---------------|--|---|

## Reverse dies

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| Die | Thistle mm.         | Projection                           | Errors /design elements  | Images  |
|-----|---------------------|--------------------------------------|--|---|
| 51  | medium              | prox. tip foot of D & between I & N  |  | SCBI 58, 1166-7;<br>SCBI 35, 1121<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1121rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1121rev.jpg</a>  |
| 52  | medium              | distal third of D & prox. third of N | edged scroll   | P. ( <b>Plate 1</b> );<br>Heritage 2/6/06, 14855 (Heritage 10/1/05, 23179) <a href="http://www.mcsearch.info/ext_image.html?id=629462">http://www.mcsearch.info/ext_image.html?id=629462</a>  |
| 53  | medium above +      | bisects D & distal third of N        | DISCIPENT <sup>R</sup> ; ; edged scroll; faint inner guide line                      | DNW 9-10/12/03, 458, Davidson Coll <sup>n</sup> ; Spink 57, 29/4/87, 224, J.K.R.Murray Coll <sup>n</sup> . (Spink/Bowers/Ruddy, 19/2/76, 214, Dundee Coll <sup>n</sup> )  |
| 54  | medium to left of + | between D & E & between N & I        | DISCIPENT <sup>R</sup> ; ; edged scroll; faint inner guide line                      | SCBI 58, 1170-1;<br>BM 1946,1004.710<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339193&amp;objectid=895667">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339193&amp;objectid=895667</a> |
| 55  | medium              | bisects D & prox. upright of N       | DISSIPENT <sup>R</sup> ; ; developed die crack from R of VIREs to stop between T & D | SCBI 58, 1168-9;<br>SCBI 35, 1120<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1120rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1120rev.jpg</a>  |
| 56  | medium              | between D & E & distal upright of N  | edged scroll; no serif on ampersand  | SCBI 35, 1119;<br>BM 1910,0405.1<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339179&amp;objectid=895668">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339179&amp;objectid=895668</a>     |

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|    |        |                                 |        |   |
|----|--------|---------------------------------|--------|---|
| 61 | medium | prox. foot of D & between · & I | INIMCI | Spink 57, 29/4/87, 225, J.K.R.Murray Coll <sup>n</sup> . (Glendining 18/6/57, 339, Lockett Coll <sup>n</sup> );<br>SCBI 35, 1122<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1122rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1122rev.jpg</a> |
|----|--------|---------------------------------|--------|---|

|    |        |  |  |  |
|----|--------|--|--|--|
| 62 | medium | prox. limb of D & prox. limb of N      | stop under small R of DISSIPENT <sup>R</sup>   | Spink 119, 4/3/97, 357, Douglas Coll <sup>n</sup> ; BM E.2630<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339203&amp;objectid=895666">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339203&amp;objectid=895666</a> |
| 63 | medium | prox. limb of D & bisects small R      | E <sup>9</sup> ; small lateral protuberance on distal upright of N of INIMICI  | SCBI 58, 1182-3; BM 1939,0319.22<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339295&amp;objectid=895663">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339295&amp;objectid=895663</a>                              |
| 64 | medium | bisects D & prox. third of N           | I of DISSIPENT <sup>R</sup> looks like re-cut E (Die is similar to 62, but projection along foot of date numerals bisects S and T cf distal arm of V and T on 62.) | DNW 8/10/02, 60, Brodie Coll <sup>n</sup> ; BM E.2632<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339332&amp;objectid=895662">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339332&amp;objectid=895662</a>         |
| 65 | medium | distal border of D & prox. limb of N   | FI <sup>9</sup> becomes EI <sup>9</sup> if foot re-cut   | SCBI 58, 1176-8; BM 1959,1206.1<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339339&amp;objectid=895661">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339339&amp;objectid=895661</a>                               |
| 66 | large  | bisects D & prox. upright of N         | 1 5 of date far left; stop adjacent to small R; no jewels on crown arches; developed die crack 1 <sup>st</sup> 6 → V of VIREs                                      | SCBI 58, 1173 and 1175; BM E.2631<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339286&amp;objectid=895664">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339286&amp;objectid=895664</a>                             |
| 67 | large  | bisects D & distal tip of of foot of I | stop under small R   | SCBI 58, 1174 and 1184; DNW 17/9/13, 325, Chesser Coll <sup>n</sup> (Glendining, 22-4/ 1/52, part 1364, V.J.E. Ryan Coll <sup>n</sup> , Part II)<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=234553">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=234553</a>  |
| 68 | large  | bisects D & prox. limb of N            | stop under small R   | SCBI 58, 1172; Noble 72, 26-28/3/03, 1153<br><a href="http://www.noble.com.au/site/img/dyn/sales/s72/6633b.jpg">http://www.noble.com.au/site/img/dyn/sales/s72/6633b.jpg</a>   |
| 69 | large  | bisects D & between I & N              | stop distal to small R; E of EXVRGAT re-entered; r. lower tortoise foot long; small I in VIREs   | Baldwin 30, 7-8/5/02, 674; Triton XIII, 5/1/10, 2113<br><a href="http://www.cngcoins.com/photos/big/83002113.jpg">http://www.cngcoins.com/photos/big/83002113.jpg</a>  |



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|     |       |  |   |  |
|-----|-------|--|---|--|
| 71  | small | distal border of D & bisects N                 |   | SCBI 58, 1185 and 1188;<br>Triton XVII 7-8/1/14, 1489<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=247722">http://www.cngcoins.com/Coin.aspx?CoinID=247722</a>   |
| 72  | small | between D & E, & prox. limb of N               | T over R & I over C (C double struck)                         | SCBI 58, 1186 and 1223;<br>BM SSB,26.130<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375676&amp;objectid=1048909">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375676&amp;objectid=1048909</a>    |
| 73  | small | prox. limb of D & prox. border N               |   | SCBI 58, 1187 and 1221;<br>BM 1946,1004.709<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375663&amp;objectid=1048910">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375663&amp;objectid=1048910</a> |
| 74  | small | distal border of D & distal limb of N          |   | Spink 57, 29/4/87, 227, J.K.R.Murray Coll <sup>n</sup> ;<br>SCBI 35, 1125<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1125rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1125rev.jpg</a>   |
| 75  | small | distal third of D & bisects N                  | small I in VIREs  | SCBI 58, 1220 and 1222;<br>BM 2638<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375679&amp;objectid=1048907">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375679&amp;objectid=1048907</a>          |
| 76  | small | prox. foot of D & between I & N                | stop beneath small R  | SCBI 35, 1131<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1131rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1131rev.jpg</a>   |
| 77  | small | touches distal limb of T & upper terminal of I | VERIS   | SCBI 58, 1224;<br>P. (Plate 1)   |
| 78  | small | prox. foot of D & prox. foot of I              | stop beneath small R  | P. (Plate 1);<br>DNW 21/6/12, 941<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=216497">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=216497</a>   |
| 79  | small | bisects N & D                                  | no crosses at base of inner arches of crown                   | SCBI 35, 1132<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1132rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1132rev.jpg</a>   |
| 710 | large | bisects D & between I & N                      | spaced date; N of DISSIPENT <sup>R</sup> has central upright. | PF Summer list 94, 376;<br>Spink 64, 23/6/88, 311 (Glendining 14/5/75, 12, Gilboy Coll <sup>n</sup> );<br>Davissons 32, 6/6/13, 217<br><a href="https://www.numisbids.com/n.php?p=lot&amp;sid=487&amp;lot=217">https://www.numisbids.com/n.php?p=lot&amp;sid=487&amp;lot=217</a>   |

## Two-thirds ryals

The following conventions apply to descriptions of the contraction mark above the V of SCOTORV, and of the ampersands. These are signified by the configuration V/☞: the presence or absence of a contraction mark and its form, if present, precedes the forward slash, and the presence (+) or absence (-) of serifs on the ampersands follows the slash, with the first mark referring to the first ampersand in the legend as read in a clockwise direction. Ampersands and the contraction mark do not feature on the coins of Mary's second widowhood.

## Obverse dies

| Die | Shield    | Projection                                   | Errors / design elements / V/☞  | Images   |
|-----|-----------|--|---|--|
| A1  | (?) 12/10 | bisects ☞ & between C & O                    | /++   | Spink 57, 29/4/87, 228, J.K.R.Murray Coll <sup>n</sup> , (SCMB Jun 58, SC854; Glendining 18/6/57, 343, Lockett Coll <sup>n</sup> )   |
| A2  | 12/9      | through distal border ☞ & distal border of O | /++   | Spink 179/6029, 29/3/06, 123, LaRiviere Coll <sup>n</sup> (Baldwin 30, 7/5/02, 676; Spink 64, 23/6/88, 110, Dunbar Coll <sup>n</sup> ; SCMB 695 Jul.76, J10); SCBI 35, 1126 (Glendining 25-6/6/80, 526) <a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1126obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1126obv.jpg</a>  |
| B1  | 12/11     | distal limb ☞ & bisects C                    | /- -  | SCBI 58, 1197; SCBI 35, 1128 <a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1128obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1128obv.jpg</a>   |
| B2  | 11/9      | bisects ☞ & prox. third of C                 | missing 2 <sup>nd</sup> outer lis; developed die flaw → serif to lower limb of S; -/- + | SCBI 58, 1190 and 1191; P. ( <b>Plate 3</b> )  |
| B3  | 12/10     | prox. third ☞ & touches back of C            | -/+++   | Triton XVII 7-8/1/14, 1486 (Glendining 18/6/57, 337B, Lockett Coll <sup>n</sup> ) and 1487; BM GHB,S.119 <a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339349&amp;objectid=895660">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339349&amp;objectid=895660</a> |
| B4  | 12/8      | bisects ☞ & touches prox. border of O        | -/+++   | Glendining/Spink, 6/3/74, 152, Hird Coll <sup>n</sup> .  |
| B5  | 12/10     | prox. third ☞ & bisects S                    | •/+ -   | SCBI 58, 1198 and 1199; Spink 12027, 4-5/12/12, 148 (London 129, 6/8/10, 860; NCirc., 3/10, SCO829) <a href="http://www.spink.com/lot-description.aspx?id=12027148">http://www.spink.com/lot-description.aspx?id=12027148</a>  |

|     |        |                                       |   |   |
|-----|--------|---------------------------------------|---|---|
| B6  | 12/10  | bisects ☞ & touches prox. border of O | die crack developed from lion's head to 2 <sup>nd</sup> inner lis; -/++   | SCBI 58, 1192, 1193, 1194, 1195 and 1196; Spink 13012, 26-27/3/13, 657 ( <i>NCirc.</i> , 4/12, SC0892; <i>PF list</i> 5, 381)<br><a href="http://www.spink.com/lot-description.aspx?id=13012657">http://www.spink.com/lot-description.aspx?id=13012657</a>  |
| B7  | 10/11  | bisects ☞ & touches distal tip of S   | Initial cross punched over thistle head; only 3 lis on top border of shield; bifid serif on 2 <sup>nd</sup> ☞; -/++ | SCBI 58, 1200 and 1201; SCBI 35, 1127<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1127obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1127obv.jpg</a>  |
| B8  | 12/10  | bisects ☞ & prox. third of C          | •/++  | DNW 63, 7/10/04, 718, McDonald Coll <sup>n</sup> ; BM E.2633<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339618&amp;objectid=895659">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339618&amp;objectid=895659</a> |
| B9  | 12/8   | bisects ☞ & between S & C             | developed circular die flaw between 1 <sup>st</sup> O of SCOTORVM and side of crown; -/++                           | <i>PF memorial list</i> 01, 360; Spink 5014, 28/9/05, 1254<br><a href="https://www.spink.com/lot-description.aspx?id=50141254">https://www.spink.com/lot-description.aspx?id=50141254</a>   |
| B10 | 12/9   | bisects ☞ & touches back of C         | •/++  | Spink 7018, 27/6/07, 158, Wilson Coll <sup>n</sup> , (DNW 17/3/04, 786; Baldwin 30, 7-8/5/02, 677; Spink/Bowers/Ruddy 19/2/76, 221, Dundee Coll <sup>n</sup> ; Glendining 18/6/57, 342, Lockett Coll <sup>n</sup> )<br><a href="https://www.spink.com/lot-description.aspx?id=7018158">https://www.spink.com/lot-description.aspx?id=7018158</a>  |
| B11 | 12/9   | through distal limb ☞ & between C & O | large shield and surmounting crown; -/++  | AMR HS-0573 ( <i>NCirc.</i> 9/83, 5656)<br><a href="http://www.amrcoins.com/coins-for-sale/HS-0573/">http://www.amrcoins.com/coins-for-sale/HS-0573/</a>  |
| B12 | 12/11  | prox. ☞ & tip of distal limb of S     | compressed RV in SCOTORV; -/++  | P. (Plate 3)  |
| B13 | ?11/?8 | distal limb ☞ & bisects C             | die flaw through second O of SCOTORV and RI of HENRIC; -/?-   | <i>NCirc.</i> 11/95, 6237   |

|    |       |                                   |                                |  |
|----|-------|-----------------------------------|--------------------------------|--|
| C1 | 12/11 | distal limb ☞ & prox. border of O | -/++                           | P. (Plate 3)   |
| C2 | 12/11 | distal limb ☞ & bisects O         | no gap between DEI & GRA; -/++ | Bonhams 17/10/06, 1708, Clarendon Coll <sup>n</sup> (Spink 38, 10-11/10/84, 310)                   |
| C3 |       | beneath ☞ & beneath O             | -/++                           | Glendining 13/12/43, 1200, Drabble Coll <sup>n</sup>   |
| C4 | 12/11 | prox. third ☞ & C                 | -/++                           | SCBI 58, 1202; <i>NCirc.</i> 4/90, 1826 (Spink 57, 29/4/87, 230, J.K.R. Murray Coll <sup>n</sup> ) |
| C5 | 12/11 | distal limb ☞ & prox. border of O | -/++                           | SCBI 58, 1203 and 1204   |

|    |       |   |   |  |
|----|-------|---|---|--|
| C6 | 12/9  | distal tip $\phi$ & between O & T; bottom lis above G | /++   | SCBI 58, 1205;<br>CNG Coin Shop 783988 (Spink 179/6029, 29/3/06, 125, LaRiviere Coll <sup>n</sup> ; Glendining 14/5/75, 14, Gilboy Coll <sup>n</sup> )<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=99794">http://www.cngcoins.com/Coin.aspx?CoinID=99794</a><br>( <a href="https://www.spink.com/lot-description.aspx?id=6029125">https://www.spink.com/lot-description.aspx?id=6029125</a> ) |
| C7 | 12/9  | distal third $\phi$ & between S & C                   | - /++   | BM E.2635<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339651&amp;objectid=895656">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339651&amp;objectid=895656</a>   |
| C8 | 10/10 | distal tip $\phi$ & prox. border of O                 | only 3 fleur-de-lis on upper outer border of shield; two stops after V of SCOTORV; -/++ | NCirc., 9/87, 5231;<br>P. (Plate 3)  |

|    |       |  |   |   |
|----|-------|--|---|---|
| D1 | 12/11 | immediately beneath stop & bisects G             |   | Spink,/Bowers/Ruddy 19/2/76, 224, Dundee Coll <sup>n</sup> (Glendining 18/6/57, 344[B], Lockett Coll <sup>n</sup> );<br>P. (Plate 3)  |
| D2 | 12/9  | stop & distal border of R                        | no initial or terminal stops  | <i>Studio list</i> 46, 5271   |
| D3 | 12/8  | distal border of D & bisects G                   |   | SCBI 58, 1226 and 1227;<br>SCBI 35, 1135<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1135obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1135obv.jpg</a>   |
| D4 | 12/10 | bisects A & R                                    |   | SCBI 58, 1228 (Spink 57, 29/4/87, 238, J.K.R.Murray Coll <sup>n</sup> );<br>BM 1914, 1206. 1<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339642&amp;objectid=895657">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339642&amp;objectid=895657</a> |
| D5 | 12/10 | beneath A & touches prox. base of E              | small gap between R & E   | P. (Plate 3)  |
| D6 | 12/10 | distal third of A & just touches prox. base of E | large gap between R & E; developed die crack between I & N of REGINA and passing through to inner arch of crown | BM E2639<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375685&amp;objectid=1048905">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375685&amp;objectid=1048905</a>   |

|    |      |                          |                             |  |
|----|------|--------------------------|-----------------------------|--|
| E1 | 12/9 | through stop & back of G | no contraction mark above V | SCBI 58, 1255;<br>Spink 5014, 28/9/05, 1255<br><a href="https://www.spink.com/lot-description.aspx?id=50141255">https://www.spink.com/lot-description.aspx?id=50141255</a> |
|----|------|--------------------------|-----------------------------|--|

## Reverse dies

1565

| Die | Projection                              | Errors / design elements / contractions  | Images  |
|-----|---|--|---|
| 51a | bisects D & through prox. limb of N     | no date; colon stops after DEVS & DISSIPENT <sup>R</sup>                               | Spink 57, 29/4/87, 228, J.K.R.Murray Coll <sup>n</sup> . (SCMB, 6/58, SC854; Glendining 18/6/57, 343, Lockett Coll <sup>n</sup> ); SCBI 35, 1126 (Glendining 25-6/6/80, 526) <a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1126rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1126rev.jpg</a>  |
| 51  | identical to die 1a but with date added |  | SCBI 58, 1190, 1194, and 1197; BM GHB, S.119 <a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339350&amp;objectid=895660">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339350&amp;objectid=895660</a>                        |
| 52  | bisects D & through distal limb of N    | single stops   | SCBI 58, 1191, 1192, 1193, 1198 and 1199; SCBI 35, 1128 <a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1128rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1128rev.jpg</a> and Triton XVII 7-8/1/14, 1486 (Glendining 18/6/57, 337[B], Lockett Coll <sup>n</sup> ) <a href="http://www.cngcoins.com/Coin.aspx?CoinID=247719">http://www.cngcoins.com/Coin.aspx?CoinID=247719</a> |
| 53a | beneath D & through distal limb of N    | no date; colon stops after DISSIPENT <sup>R</sup> ; INIMCI; two stops preceding legend | Spink 179/6029, 29/3/06, 123, LaRiviere Coll <sup>n</sup> . (Baldwin 30, 7/5/02, 676; Spink 64, 23/6/88, 110, Dunbar Coll <sup>n</sup> ; SCMB, 695 7/76, J10) <a href="https://www.spink.com/lot-description.aspx?id=6029123">https://www.spink.com/lot-description.aspx?id=6029123</a>   |
| 53  | identical to die 3a but with date added |  | SCBI 58, 1195, 1196, 1200 and 1201; BM E.2633 <a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339620&amp;objectid=895659">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339620&amp;objectid=895659</a>                       |

|    |                                     |   |  |
|----|-------------------------------------|---|--|
| 61 | prox. third of D & bisects N        | fourth date numeral marginally higher than third  | NCirc., 4/12, SC0892 (Spink 13012, 26/3/13, 657; PF list 5, 381)<br><a href="http://www.spink.com/lot-description.aspx?id=13012657">http://www.spink.com/lot-description.aspx?id=13012657</a><br>and<br>DNW 17/9/13, 327, Chesser Coll <sup>n</sup> .<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=234555">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=234555</a>   |
| 62 | beneath T through stop & beneath N  | straight edged scroll, die flaw 'blob' under R of VIRES   | NCirc., 6/89, 3337 (NCirc., 5/87, 3021; Spink 3017, 12/11/03, 137)<br><a href="https://www.spink.com/lot-description.aspx?id=3017137">https://www.spink.com/lot-description.aspx?id=3017137</a><br>and<br>BM E.2634<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339633&amp;objectid=895658">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339633&amp;objectid=895658</a> |
| 63 | touches distal arm of T & through I |   | Spink 189/7018, 27/6/07, 158, Wilson Coll <sup>n</sup> . (DNW 17/3/04, 786; Baldwin 30, 7-8/5/02, 677; Spink, Bowers/Ruddy 19/2/76, 221 Dundee Coll <sup>n</sup> ; Glendining 18/6/57, 342, Lockett Coll <sup>n</sup> )<br><a href="https://www.spink.com/lot-description.aspx?id=7018158">https://www.spink.com/lot-description.aspx?id=7018158</a>   |
| 64 | through stop & I                    | C re-entered over third I of INIMICI; additional stop under small R of DISSIPENT <sup>R</sup> ; & double struck | SCBI 58, 1202, 1203 and 1204; CNG Coin Shop 783988 (Spink 6029, 29/3/06, 125, LaRiviere Coll <sup>n</sup> ; Glendining 14/5/75, 14, Gilboy Coll <sup>n</sup> )<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=99794">http://www.cngcoins.com/Coin.aspx?CoinID=99794</a>  |
| 65 | prox. quarter of D & bisects N      | fourth date numeral lower than third  | AMR HS-0573 (NC irc. 9/83, 5656)<br><a href="http://www.amrcoins.com/coins-for-sale/HS-0573/">http://www.amrcoins.com/coins-for-sale/HS-0573/</a>  |
| 66 | bisects E & distal upright of N     | small <sup>R</sup> of DISSIPENT <sup>R</sup> entered over V   | P. (Plate 2)   |

1567

|    |   |  |  |
|----|---|--|--|
| 71 | beneath T, through stop & bisects N             | numeral 6 punched over inverted 6 (or die flaw)    | SCBI 58, 1205, 1226 and 1227;<br>BM E.2635<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339654&amp;objectid=895656">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339654&amp;objectid=895656</a><br>and<br>SCBI 35, 1135<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1135rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1135rev.jpg</a>   |
| 72 | bisects D & through distal limb of N            | crude tortoise in shape of bowling pin             | Spink 6029, 29/3/06, 130, LaRiviere Coll <sup>n</sup> .<br>(Spink 57, 29/4/87, 237, J.K.R. Murray Coll <sup>n</sup> )<br><a href="https://www.spink.com/lot-description.aspx?id=6029130">https://www.spink.com/lot-description.aspx?id=6029130</a><br>and<br>BM 1914, 1206. 1<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339643&amp;objectid=895657">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339643&amp;objectid=895657</a> |
| 73 | between D & E, & through I                      | small A in EXVRG <sup>A</sup> T                    | SCBI 58, 1228 (Spink 57, 29/4/87, 238, J.K.R. Murray Coll <sup>n</sup> )<br><b>P. (Plate 2)</b>  |
| 74 | touches distal arm of T & beneath N             | no cross on crown, crown removed from inner circle | SCBI 58, 1225;<br>BM E2639<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375686&amp;objectid=1048905">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1375686&amp;objectid=1048905</a>  |
| 75 | through prox. upright of D & prox. upright of N | large date numerals                                | Spink 2015, 5426   |

## One-third ryals

## Obverse dies

| Die | Shield | Projection  | Errors /design elements/ positioning tail of <sup>9</sup>  | Images  |
|-----|--------|---|--|---|
| A1  | 12/10  | base of E & tip of bottom limb of C                               | usual stops incl. after MARIA ( <i>cf</i> A2); across upper tip of C   | SCBI 58, 1216   |
| A2  | 12/11  | touches base of E, prox. tip of T & beneath O to distal limb of C | no stops before or after MARIA or after SCOTORVM; tail of <sup>9</sup> almost touches tip of base limb of C                  | SCBI 58, 1214 and 1215; DNW 5/12/12, 667<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=223486">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=223486</a>   |
| A3  | 12/11  | bisects E & touches distal tips of C                              | touches tip of base limb of C, body of <sup>9</sup> almost touches tip of upper limb of C                                    | SCBI 58, 1208 and 1209; Numismatik 153, 12/12/11, 897<br><a href="http://www.acsearch.info/media/images/archive/86/1358/1169192.m.jpg">http://www.acsearch.info/media/images/archive/86/1358/1169192.m.jpg</a>  |
| A4  | 12/11  | touches base of E, prox. tip of T & bisects C                     | pointing to, but gap from base tip of C  | NCirc., 7/95, 4193 (Glendining 18/6/57, 337C, Lockett Coll <sup>n</sup> )   |
| A5  | 12/9   | base of E, prox. tip of T & prox. border O                        | ·GR·A·; flat spot on shield above G; almost touches tip of base limb of C  | SCBI 58, 1212 and 1213 (Obverse double struck on this coin creating the legend +·MARIA·ET·HENRIC <sup>9</sup> ·EI·GRA·R·R·ET·R·SCOTORVM·;<br>SCBI 35, 1129<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1129obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1129obv.jpg</a><br>and<br>CNG 87, 18/5/11, 2127 (Spink 6029, 29/3/06, 126, LaRiviere Coll <sup>n</sup> )<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=185590">http://www.cngcoins.com/Coin.aspx?CoinID=185590</a> |
| A6  | 12/10  | bisects T & O   | no ornaments on band of crown or between crosses and fdl; tail of <sup>9</sup> points between limbs of C                     | SCBI 58, 1210   |
| A7  | 12/11  | distal limb of T & distal third of S                              | initial cross vertical merges into M; single stop between SCOTORVM and MARIA; tail of <sup>9</sup> points between limbs of C | SCBI 58, 1211   |



|     |           |  |  |  |
|-----|-----------|--|--|--|
| A8  | 12/11     | prox. limb of T & upper tip of C       | cross surmounting crown displaced to l.; touches tip of base limb of C           | SCBI 58, 1217 and 1218;<br>SCBI 35, 1130<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1130obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1130obv.jpg</a><br>and<br>CNG 87, 18/5/11, 2129 (Spink 6029, 29/3/06, 127, LaRiviere Coll <sup>n</sup> ;<br>Spink 57 29/4/87, 232, J.K.R. Murray Coll <sup>n</sup> )<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=185592">http://www.cngcoins.com/Coin.aspx?CoinID=185592</a>  |
| A9  | ?         | bisects E & prox. border of O          | lower lis above stop; tail of <sup>9</sup> between limbs of C                    | P. (Plate 3)   |
| A10 | 12/11     | prox. limb of T & prox. quarter of C   | inner arches of crown slender or absent; tail of <sup>9</sup> between limbs of C | Heritage 13-14/1/15, 36578<br>P. (Plate 3)   |
| B1  | 12/11     | base of E & lower limb of S            | gap between tail of <sup>9</sup> and tip of base limb of C                       | DNW 8/10/02, 61, Brodie Coll <sup>n</sup> (Spink/ Bowers/ Ruddy 19/2/76, 218, Dundee Coll <sup>n</sup> ; Asherson Coll <sup>n</sup> , bt. Spink 1967; Glendining 18-19/6/57, 338, Lockett Coll <sup>n</sup> ; Sotheby 6-8/12/1909, 360 pt., Wakley Coll <sup>n</sup> ; Sotheby 11-13/5/1903, 235, Murdoch Coll <sup>n</sup> )<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=78993">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=78993</a> |
| C1  | 12/9      | bisects T & prox. border O             | l. fdl of crown points to upright of R, not prox. to it as C2 & C3               | Spink 57, 29/4/87, 233, J.K.R.Murray Coll <sup>n</sup> ; P. (Plate 3)  |
| C2  | 12/9      | stop between T and H & between C and O | r. lion's paw slightly detached from body  | Spink/Bowers/Ruddy 19/2/76, 217, Dundee Coll <sup>n</sup> (Glendining 26/10/60, 910, Lockett Coll <sup>n</sup> );<br>Triton XVII 7-8/1/14, 1488<br><a href="https://www.cngcoins.com/Coin.aspx?CoinID=247721">https://www.cngcoins.com/Coin.aspx?CoinID=247721</a>   |
| C3  | 12/9      | stop between T and H & bisects C       |  | SCBI 58, 1219  |
| D1  | 12/7 or 8 | distal foot of A & between R and E     |  | SCBI 58, 1229, 1230, 1231 and 1232;<br>SCBI 35, 1137<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1137obv.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1137obv.jpg</a><br>and<br>DNW 16/3/11, 597<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=197251">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=197251</a>  |

## Reverse dies



1565

| Die | Projection                              | Contractions/Errors / design elements                                   | Images   |
|-----|---|---|--|
| 51  | bisects E & M                           | spaced date   | SCBI 58, 1208, 1213, 1214 and 1216;<br>CNG 87, 18/5/11, 2129 (Spink 6029, 29/3/06, 127, LaRiviere Coll <sup>n</sup> ; Spink 57, 29/4/87, 232, J.K.R. Murray Coll <sup>n</sup> )<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=185592">http://www.cngcoins.com/Coin.aspx?CoinID=185592</a>   |
| 52  | between D & E & through prox. foot of I | spaced date; developed die flaw → scroll band extending to N of INIMICI | SCBI 58, 1215;<br>BM SSB,26.122<br><a href="http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339732&amp;objectid=895655">http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&amp;assetid=1339732&amp;objectid=895655</a><br>and<br>CNG 87, 18/5/11, 2127 (Spink 6029, 29/3/06, 126, LaRiviere Coll <sup>n</sup> )<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=185590">http://www.cngcoins.com/Coin.aspx?CoinID=185590</a> |
| 53  | beneath D & through distal limb of N    | contracted date;<br>DESSIPENT <sup>R</sup>                              | SCBI 58, 1209, 1210, 1211 and 1212;<br>SCBI 35, 1129<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1129rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1129rev.jpg</a><br>and<br>Triton XVII 7-8/1/14, 1488<br><a href="http://www.cngcoins.com/Coin.aspx?CoinID=247721">http://www.cngcoins.com/Coin.aspx?CoinID=247721</a>  |

1566

|    |  |   |  |
|----|--|---|--|
| 61 | between D & E and through distal foot of R | + · EXVRGAT · DEVS · ET · DISSIPENTVR · INIMICI · EI <sup>9</sup> ; tortoise incuse | SCBI 58, 1217, 1218, 1219 and 1229;<br>P. ( <b>Plate 3</b> ) |
|----|--|---|--|

1567

|    |  |  |   |
|----|--|--|---|
| 71 | bisects E & between N and I            |  EXVRGAT · DEVS · ET · DISSIPENTVR · INIMICI · EI <sup>9</sup> · regular tortoise; · EI <sup>9</sup> · spaced out | SCBI 58, 1230   |
| 72 | bisects E & through distal limb of R   | legend as for 71, but · EI <sup>9</sup> closer to initial thistle; large contraction mark  | DNW 16/3/11, 597<br><a href="https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=197251">https://www.dnw.co.uk/auction-archive/lot-archive/lot.php?department=Coins&amp;lot_id=197251</a> |
| 73 | bisects E & M                          |  EXVRGAT · DEVS · ET · DISSIPENTVR · INIMICI · EIVS · regular tortoise  | SCBI 58, 1231 and 1232;<br>SCBI 35, 1138<br><a href="http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1138rev.jpg">http://www-img.fitzmuseum.cam.ac.uk/img/emc/300jpg/1035_1138rev.jpg</a>                           |
| 74 | bisects D & through stop between R & I | legend as 71; tortoise without legs  | Baldwin 96, 24/9/15, 3474<br>P. (Plate 3)   |

### Type III– Anomalous issues

#### Ryals

##### Obverse dies

| Die      | Shield | Projection                          | Errors /design elements   | Images        |
|----------|--------|-------------------------------------|---|---------------|
| E1 (eB9) | 12/11  | bisects <sup>9</sup> & C            | altered B9 die: regnal titles reversed, stop above orb, no contraction over V which has extended distal serif | SCBI 58, 1189 |
| F1       | 12/12  | distal third of A & prox. foot of E | diameter of inner ring = 33 mm from outer margins   | P. (Plate 2)  |
| F2       | 12/11  | bisects A & distal third of R       | diameter of inner ring = 32 mm from outer margins   | P. (Plate 2)  |

##### Reverse dies

| Die | Thistle mm. | Projection                             | Errors /design elements  | Images        |
|-----|-------------|--|--|---------------|
| e65 | medium      | distal border of D & prox. limb of N   | EI <sup>9</sup> - foot of E re-cut on all specimens; new puncheon for tortoise | SCBI 58, 1189 |
| 711 | large       | prox. upright of D & distal foot of N  | large date numerals; diameter of inner circle from outer borders = 34 mm       | P. (Plate 1)  |
| 712 | large       | stop between T & D; & prox. third of N | large date numerals; diameter of inner circle from outer borders = 32 mm       | P. (Plate 1)  |

## Appendix II: Counterfeits, copies and electrotypes

A case could be made for including the Type III – Anomalous issues as contemporary counterfeits, but as they seem to have been produced from either altered official dies, or dies requiring skilled minting techniques, I have excluded them on these grounds.

The declension of false coins into three categories is perhaps more arbitrary and less certain than the heading would suggest. Counterfeit coins are productions intended for deception, and are either contemporaneous with the genuine currency or later productions. Individual examples of Type I – Portraits issue ryal<sup>50</sup>, and Type II – Regular issue ryal<sup>51</sup> are known. The earliest reports of each of these coins are twentieth century recordings, so whether they are contemporary or modern is uncertain. They are both casts.

It is worth noting that a false crowned thistle countermark has been recorded on a ryal of James VI,<sup>52</sup> and there is no reason to exclude the possibility that such false revaluation marks were applied to Mary's coins. Their intended purpose might have been to validate a false coin or re-value a genuine piece; in either case the instigator stood to deprive the Crown of revenue.

Copies of ryals have been made for display or ornament and are usually easily distinguished from genuine coins by weight, fabric, and crude design. Examples are those produced by a Birmingham manufacturer in the late nineteenth century. These are stamped with a registration number or evidence of its erasure.<sup>53</sup>

Electrotypes of ryals and their fractions were also produced in the nineteenth and possibly twentieth centuries by museums for their own display purposes, and also for collectors. They are usually accurate reproductions of original coins, and may be mistaken as genuine if not bearing the electrotypist's mark. They may weigh within the weight range of genuine coins. A careful examination of the edge of electrotypes will reveal the join formed by the obverse and reverse plates. There are also uniface examples. A copper electrotpe cliché of the obverse of the British Museum's portrait ryal is in the author's collection.<sup>54</sup>

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50 Murray and Finn 1976, 317. The earliest known history of this coin is in 1909. It appears to be a cast of the British Museum specimen and of similar weight. It differs from the host coin in being countermarked. The countermark "is very good and seems closely similar to those found on genuine coins", a pointer to the coin possibly being a contemporary forgery. The coin currently resides in the Spink & Son (London) reserved collection.

51 Rampling and Taverner 1979, 550. This coin is a cast from die combination, A20/63, and bears a countermark, as do two of the five coins with this die link in the study. It is light at 370 grains. Like the Type I forgery, the coin shows some very minor die discrepancies when compared with host dies, probably as a consequence of tooling to improve the appearance of the cast. It was gifted to the NMS in 1967.

52 Murray 1978, 73-74.

53 Finn 1984, 217 and Finn 1985, 86.

54 Rampling 2011(2012), 81, Fig. 1.

### Appendix III: The palm tree and ‘ane schell padocke’

The emblematic significance of the reverse design continues to puzzle numismatists. Emblems of the period were often characterised by a certain enigmatic mystique, and in this domain the palm tree/tortoise design excelled, as witnessed by the scope of interpretive ingenuity it has drawn from commentators. It may be well to revue these here before embarking on any fancies of my own.

A popular interpretation has drawn its inspiration from what appears to be a Tudor rose emblazoned on the tortoise’s shell on some of the one-third ryals. This has led to the assumption that the tortoise represents Darnley because of his English ancestry through Margaret Tudor, and its ascent up the tree’s trunk ‘has been seen as an allegory depicting an ambitious Henry struggling to obtain a crown for himself’.<sup>55</sup> Nicholas Holmes has queried this ‘intriguing story’ on the grounds that the rose appears only on one denomination<sup>56</sup> and the palm tree is not an indigenous Scottish species. He further argues that such ‘a blatant disparagement’ of Darnley is unlikely to have been advertised on the coinage, and concludes that the palm tree may ‘alert us to the possibility that the design might either have been inspired by events far from Scotland or contain some mythological reference understood in the 16<sup>th</sup> century but not today’.

In a comprehensive survey, Marion Archibald concluded that the emblem ‘symbolises and celebrates the continuation of the Stewart dynastic tree into the future’.<sup>57</sup>

Lord and Lady Stewartby<sup>58</sup> have suggested that ‘the most dramatic and important event of the year 1565’, namely the Turkish attack on the Knights of St John in Malta, was possibly a stimulus for the design. An ardently Catholic queen may have expressed the deliverance of Christendom secured by the Knights’ victory on her coinage, the palm providing ‘an appropriate Mediterranean flavour’ to sentiments conveyed by the scroll motto, ‘Glory gives strength’ and the legend ‘Let God arise and let his enemies be scattered’. Such an interpretation is tempered by the fact that the same legend was used on the coins of preceding reigns, although it could have assumed a specific allusion in the political climate of 1565. The tortoise’s ‘struggle against the odds’ is in keeping with the triumph over adversity, a device suggested by Mary’s valuing of a particular tortoise jewel. This trinket, entrusted by Mary to Rizzio’s brother, Joseph, following David’s murder, suggests the tenuous proposition that the jewel had been a gift to Mary by David Rizzio, who apart from his secretarial duties, had been appointed head of the Mint in February 1566. They point out that the more direct identification of Rizzio with

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55 Holmes 2004, 24.

56 A doubtful observation by Burns, previously noted.

57 Marion Archibald, ‘The Mary Queen of Scots palm-tree ryal revisited’, paper presented at the BANS Congress, 5-7 April, 2013, Greenwich.

58 Stewartby 2007, 227.

the tortoise occasioned by the impression of a Tudor rose on the back of the tortoise of the one-third ryal is an illusion.<sup>59</sup>

While there is no clear evidence for the Stewartby hypothesis, it is worth noting that a copy of *De Bello Rhodio Libri Tres* by Jacobus Fontanus was in Mary's library, perhaps attesting to an interest in the Knights of St. John.<sup>60</sup>

Mary's bibliographic resources are relevant in seeking a prototype for the palm and tortoise emblem. A printer's mark featured on the title pages of volumes that she subsequently used as the design source for many of her embroideries, featured frogs climbing up the trunk of a tree, and another book that also supplied patterns for her embroideries contained an emblem with toads and snakes pushing up the trunk of a palm tree.<sup>61</sup> One interpretation of a possible emblematic adaptation of these familiar images on the coinage is again disparaging to Darnley, in seeing the frogs as an allegory of Darnley's marital ambitions.<sup>62</sup>

The palm tree clearly served a self-identifying device, particularly the tree's resilience. An emblem Mary worked on a Bed of State bore the motto *Ponderibus virtus innata resistit*, ('Innate virtue resisteth oppression'),<sup>63</sup> a sentiment not too dissimilar from others she used on her embroideries and, indeed, on her coin.

A poem composed by Darnley<sup>64</sup> and sent to Mary has the lines:

*The turtle for her mate  
More dule may not endure  
Than I do for her sake  
Who has mine heart in cure*

Whilst 'turtle' refers to the turtledove, it may not be too fanciful to see the possibility of an appropriation of the homonym<sup>65</sup> as disguise was integral to emblematic design.

It should be noted that the translation of the auld Scots, 'schell padocke' is 'shelled frog' or 'shelled toad', and at least one early numismatist has '...a shell paddock, or lizzard creeping up the stem...'<sup>66</sup> The term 'shell-lizard' has been applied to the armadillo.

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<sup>59</sup> *Ibid*, 225.

<sup>60</sup> Sharman 1889, 161.

<sup>61</sup> Michael Bath, 'Do tortoises climb trees? Emblematic coinage of Mary Queen of Scots', paper presented at The Society for Emblem Studies Eighth International Conference, Winchester, 28 July – 2 August, 2008.

<sup>62</sup> *ibid*.

<sup>63</sup> Palliser 1870, 237.

<sup>64</sup> Strickland 1884, 104.

<sup>65</sup> "Ther is a kyand of fishe that they call turtle ...", Dunlop, P. [v.d.] 1685, in Dunlop, J. G. (ed.); *The Dunlop Papers*. Vol. III Letters and Journals 1663–1889, Butler and Tanner, London, 1939, 1953, p. 16.

<sup>66</sup> Cardonnel 1786, 98.

Certainly, some representations of the reptile on the coins are ambiguous, and may equally be interpreted as a lizard, armadillo or tortoise. There was a popular contemporary superstition that the lizard conceived through the ear and brought forth through the mouth, whence it was regarded as a symbol of the Logos, or Divine Wisdom.<sup>67</sup>

Mary's use of the palm tree and reptile emblem in tapestries worked during her captivity, suggest that it held personal and enduring significance. The religious connotations of the palm tree as the Tree of Life would have, in all probability, been familiar to her, as well as the Biblical references seemingly appropriate to her life's transitions: 'I was exalted like a palm tree in Engaddi...'<sup>68</sup> to 'a great multitude...took branches of palm trees,'<sup>69</sup> precursor of Christ's death and resurrection. The significance of the emblem on the coin may well have changed when appropriated by Mary in her captivity.

The contemporary predilection for anagrams entices attempts at discovering a hidden message in the scroll motto DAT GLORIA VIRE, but endeavours so far have failed to yield a plausible result!

While the significance of the palm tree and reptile design can only be guessed at, its legacy as a conundrum is part of its created state as a true emblem. The abstractions intended by its various concrete elements, including the scroll motto, probably had personal, universal and popular meanings, or even no meaning for many of those through whose hands these coins passed. Later generations have been reluctant to relinquish its mystique as witnessed by the survival of the Crookston myth amongst historians and numismatists.

Mary's actual involvement with the design of her coinage is unknown, although she was clearly not ignorant in numismatic matters. Her library contained at least two numismatic works.<sup>70</sup> The featuring of palm trees on coins of the ancients may have appealed as a link in her regal lineage.

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67 Bayley 1912(1996), 68.

68 *Ecclesiasticus* xxii, 14

69 *John* xii, 12-13

70 Sharman 1889, 116 and 152. *The Ordinare of the Money in France* ('Ordonance sur le fait des monnoyes...avec le pourtraict de toutes les especes de monnoye que le roy vault', 1540), and *The first part of the Promptuarie of Medallyeis* ('Prima pars Promptuarii Iconum insigniorum a soeculo hominum', 1555).

## Appendix IV: The ‘Crookston dollar’ myth

The Type II – Regular issue ryals have been known in popular parlance as ‘Crookston dollars’ for at least two centuries, although the origins of the association between the coin and an ancient yew tree that grew in the grounds of Crookston Castle can be traced back to the closing years of the seventeenth century.<sup>71</sup> The basis for this connection has been a belief that Mary and Darnley initiated their courtship beneath the yew, and that the coin served as a memento and celebration of their union. The legend has been refuted by several authors on a number of counts and in succeeding epochs, a major stumbling block to the romance being the fact that the original ordinance for the minting of ryals stated that the arboreal emblem was a palm tree. A detailed discussion refuting the validity of a connection between the coin and the Crookston estates has been provided in a nineteenth century monograph by David Semple.<sup>72</sup> Despite this and other critiques, the term ‘Crookston dollar’ has retained its popularity to the present day. An account of its evolution, history and longevity has been published,<sup>73</sup> but may be conveniently summarised below.

In the eighteenth century, very obvious connections had been made between the coin and the Crookston estate. In his poem *The Clyde*, John Wilson (1720-1789) refers to the Crookston yew thus:

*Embossed in silver, now its branches green  
Transcend the myrtle of the Paphian queen*

A visual portrayal of the presumed connection was afforded by an engraving made by Robert Paul in 1763 from a sketch by Charles Cordiner and published by Foulis, which included the yew tree in the foreground of the castle and an image of the reverse of a ryal appended beneath the main scene.<sup>74</sup>

Sir Walter Scott’s influence on Scottish folklore cannot be overestimated. In his novel, *The Abbot*, he depicts Mary, Queen of Scots, within the grounds of Crookston eulogising over her associations with the ancient yew under whose canopy her tryst with Darnley was supposed to have been initiated. Despite this figment of historical fiction having no possible basis in fact, the appeal of a tangible link to the romance and tragedy of Mary’s life has possibly attached to the coin a certain talismanic significance. Scott’s antiquarian interests included coins,<sup>75</sup> and he was certainly familiar with the silver ryal,

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71 Dr John Sharpe’s, *Observations of the Scots Money*, written in the last years of the seventeenth century but not published until 1785, had noted that the “yew-tree in the park... of the Earl of Lenox... gave occasion to the impress of the coin...”

72 Semple 1876.

73 Rampling 2011(2012).

74 *Ibid.* 84-85.

75 In his autobiography, James Nasmyth (1808-1890), the famous Scottish Engineer, included the following



having requested of a friend, that ‘the Crookston dollar, if to be had’ be incorporated into the base of a quaiçh so as to ‘show the reverse as well as obverse of the coin.’<sup>76</sup>

Numismatists are amongst those who have obscured rather than clarified the issue. The eighteenth century author of *Numismata Scotiae*, Adam de Cardonnel, declared that ‘the famous yew tree of Cruickstone ... is made the reverse of this new coin.’<sup>77</sup>

John Lindsay in his *A View of the Coinage of Scotland* (1845) perpetuated the myth, and James Wingate in his *Illustrations of the Coinage of Scotland* (1868) affirmed that the Mary ryals were called ‘Crookston dollars’, and even used the term to label his illustrations of the coins. He inferred that the name derived from the estate of Crookston having belonged to Lord Darnley, a suggestion repeated in *A Handbook to the Coinage of Scotland* by J. D. Robertson (1878). This latter author also affirmed the emblem to be ‘a crowned yew-tree’, a belief that still finds expression in some more recent publications.<sup>78</sup>

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delightful childhood memory: *I remember one day, when sitting beside my father making a very careful drawing of a fine bronze coin of Augustus, that Sir Walter Scott entered the room...At his request I had the pleasure of showing him my little store of coin treasures, after which he took out of his waistcoat pocket a beautiful silver coin of the reign of Mary, Queen of Scots, and gave it to me as being his “young brother antiquarian.” I shall never forget the kind fatherly way in which he presented it....it vastly enriched my little collection of coins and medals.* (James Naysmyth, *Engineer: An Autobiography*, Samuel Smiles [Ed.], John Murray, London, 1883, pp. 87-88)

<sup>76</sup> Rampling 2011(2012), 88-89.

<sup>77</sup> Cardonnel 1786, 18-19, footnote.

<sup>78</sup> See for example: Bradley, H. W., *A Handbook of Coins of the British Isles*, Robert Hale, London, 1984, p. 20.

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52



77



78



711



712



A3



B13



B14

RYALS

Plate 1



C8



C9



C13



D1



F1



F2

RYALS



66



73

TWO-THIRDS RYALS

Plate 2





B2



B12



C1



C8



D1



D5

### TWO-THIRDS RYALS



61



74



A9



A10



C1

### ONE-THIRD RYALS

### Plate 3