

THE EARLY UNICORNS AND THE HEAVY GROATS OF JAMES III AND JAMES IV

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THE heavy groats of James III and IV were issued for about twelve years from 1484, while the period covered by the classes of unicorn considered in this article is believed to extend a few years later. The primary object of the article is to put forward the arguments¹ for a revised sequence of the four types of heavy groat and the five classes of unicorn which need to be distinguished, and to consider their dating, together with the relevant historical context. Details of dies and die-combinations have in general been omitted, although a die-analysis covering the major collections has been carried out.

DOCUMENTARY EVIDENCE

The main documentary evidence about the period of the heavy groats is in a series of Acts of Parliament, there being no Council records nor indentures extant for this period. It is convenient to summarize the most relevant parts of these Acts.²

24 February 1483/4.³ This ordained 'a fyne penny of gold . . . to be of wecht and finace to the Rose noble and a penny of silvir to be equale in finace to the auld Inglis groit and ten of thame to mak the unce of silvir and to have cours and gang for xiiij*d*. . . to have sic prent and circumscripcioun as salbe avisit be the kingis hienes'. The gold piece was to pass for thirty of the groats; a half-groat and gold pieces of the value of twenty and ten groats were also specified.

26 May 1485.⁴ This repeated the former provisions. It raised the buying price for silver bullion by 4*d*. per ounce to 12*s*., and authorized the striking of a small proportion of the silver in pennies. All other money, particularly placks and half-placks, was to be current at the values previously proclaimed.

¹ Some of the arguments of this article were summarized by Stewart, with acknowledgement, in the second edition of *The Scottish Coinage* (1967). Since this book is likely to remain a standard work for many years, it seemed right to make unpublished work available for it (even though incomplete), particularly where this cast doubt on the classification adopted in the original edition (1955).

² The following abbreviations will be used: B. = E. Burns, *The Coinage of Scotland* (1887), ii and figs.; B. Cat. = E. Burns, *Catalogue of a Series of Coins and Medals . . . Exhibited at the Meeting of the British Association* (Glasgow, 1876); S. = I. H. Stewart, *The Scottish Coinage* (1967); C.-P. = R. W. Cochran-Patrick, *Records of the Coinage of Scotland*, i; APS = *The Acts of the Parliaments of Scotland*; RMS = *Registrum Magni Sigilli Regum Scotorum, The Register of the Great Seal of Scotland*; CTS = *Compota Thesauriorum Regum Scotorum, Accounts of the Lord High Treasurer of Scotland*; Exch. Rolls =

Rotuli Scaccarii Regum Scotorum, The Exchequer Rolls of Scotland; Acta Dom. Conc. = *Acta Dominorum Concilii, The Acts of the Lords of Council in Civil Causes*; PSAS = *Proceedings of the Society of Antiquaries of Scotland*; Rich. = A. B. Richardson, *Catalogue of the Scottish Coins in the National Museum of Antiquities of Scotland, Edinburgh*. C.-P. references, when available, are given in preference to APS, etc., as more convenient for numismatists.

³ C.-P. 39. Here and elsewhere I have followed the original spelling as reproduced in the printed records, except in two particulars. Like R. W. Cochran-Patrick, I have used *y*, not *z*, for consonantal *y*. I have also adopted the modern distinction between *u* and *v*, to help the reader, which is in accordance with editorial policy for some (at least) of the more recently published records. Thus I have quoted 'silvir' rather than 'siluir' and 'unicarnys' rather than 'vnicarnys' (and similarly where *w* represents modern *v*).

⁴ C.-P. 40.

(1486).¹ The 'new plakkis last cunyeit' were withdrawn, and the silver refined from all placks received at the mint was to be used for 'ane new penny of fyne silvir like the xiiij*d*. grote ordanit of befoir'.

17 October 1488.² This Act of the first Parliament of James IV exactly repeated the earlier provisions about weights and values. Alexander Levintoun (or Levingstoun) was to continue as moneyer.

14 January 1488/9.³ A new silver coinage with the same standards was ordained, 'to have prent sic As the xiiij*d*. grote has that now Is / Except that the visage sall stand eyvyn in the new groit'. A gold coinage with the same standards as French crowns was also ordained, the types being specified in this case as the arms of Scotland and the king enthroned.

3 February 1489/90.⁴ 'A trew substancius man' was to be made 'maister of the money and cunye', and the existing standards were repeated for the silver, but 'This said cunye sall haf a signe and takin maid in the prenting hafand difference fra the first cunye.'

BACKGROUND

Before going into detail about the coins struck in this period, it is desirable to fill in some of the background. Up to the middle of the sixteenth century the standards and types of the silver coinage of Scotland were influenced mainly by those of England. Although there were long periods when the weight standards were different, conformity with England was re-established in 1357 and 1451, as well as in 1484, and also proposed in 1366 and 1424. These weight standards, when laid down in terms of the Scottish Troy ounce, may actually have been slightly below those of England, since at the union of the crowns the Scottish mint ounce was found to be lighter than the English Troy one by nearly nine English grains. Presumably the same was true of the Scottish ounce in the fifteenth century, but certainly no account was taken of such a difference in quoting the standard weight in 1451: according to the Act of Parliament in that year, new money 'conformit evin in wecht to the mone of Inglande' was to be struck, at eight groats to the ounce, and to have the same currency value as 'the Inglis grote of the quhilk viij grottis haldis ane unce'.⁵

Soon after the 1464 reduction in the weight of English silver coins, there was a change in Scotland (probably in 1467), but this was a more drastic weight reduction, the new light groats being struck at twelve to the ounce. Light groats of this character continued to be struck under James III until 1484 and are divided into three groups, I, III, and IV in Stewart's classification. In 1484 they made way for an issue of heavy groats, struck at ten to the ounce, virtually the current English standard. There was a return to the light groat standard in the next reign, probably in 1496, and these light groats of James IV will be considered in some detail below, because of their correspondence to certain unicorns. There were parallel half-groats of the light and heavy coinages, and fine silver pennies, worth 3*d*. Scots, of the light coinages only. These silver pennies, like the light groats of both reigns, were distinguished by mullets alternating with three pellets

¹ C.-P. 41, but erroneously dated 26 May 1485. The editorial dating to 1486 in *APS* may be based on the evidence about the withdrawal of the placks: the terminal date for receiving them was the last day of

May, and evidence in *Exch. Rolls* proves that this was in 1486.

² C.-P. 46.

⁴ C.-P. 48.

³ C.-P. 47.

⁵ C.-P. 19.

in the angles of the reverse cross. Of these various coins only the light groats can be allocated without difficulty to their respective reigns; some bear a regnal numeral, some were struck at Berwick, which was in Scottish hands from 1461 to 1482, and in James IV's reign the reverse legend was different.

The fine silver was supported by a variety of base coins. With the fall in value of the Scottish money of account, the use of fine silver for coins of the value of $1d.$ and $\frac{1}{2}d.$ Scots was abandoned in 1393: for about a century after that, the English reverse type of three pellets in each angle of a Long Cross pattée was retained on these coins, while the size and fineness fell considerably. The James III pennies of this type are of Stewart classes A and C, of which Civ and Cv (or at least Cva) must have accompanied group IV light groats, since the same head and crown punches were used for these billon pennies and for the silver pennies of that group. The reverse type was varied for two classes of penny, Stewart classes B and D, perhaps to indicate different currency values, pennies of class B apparently being baser than the contemporary pennies of normal type, while class D pennies, which are associated with the heavy groats, are considerably finer. The normal type was continued in what I shall call class E of James III, and likewise at the beginning of James IV's reign, first with annulet stops and ornaments, then with saltire stops (S. types 1 and 2 of the first issue). With the light groats of James IV the three-pellet type of billon penny was finally abandoned, the new type having crown alternating with lis in the angles of the reverse cross.

Other base coins were introduced in James III's reign. The documentary evidence about them is scanty, leaving doubts about their dates, currency values, and standards. Alloyed groats and half-groats, about nine-twelfths fine, of distinctive type (S. group II), were issued concurrently with the fine groats of groups III and IV, and for a short period thereafter. There were also placks and half-placks, at about five-twelfths fine. The first issue of these ceased in 1473 and their currency value may then have been reduced to the intrinsic value. The second issue, described as 'the new plakkis last cunyeit' in 1486, may be dated about 1483. There was then a gap of about twenty years before placks were again coined, these being of baser billon and slightly different type.

Copper farthings were authorized by Parliament in 1466 and discontinued the following year, but some of the known types must be later than this. The dates of the larger copper coins, with *Crux pellit* legend, are unknown. There is also chronicle and record evidence of black money being struck from about 1480 to 1482 and demonetized in July 1482, in the course of a revolt against James III. This may have contributed to distrust of the billon coins also, which was probably the main reason for withdrawing the placks in 1486. A reversion dated 8 March 1488/9 shows that some, at least, of the billon pennies had by then suffered devaluation: out of a total sum of £100, £22 was paid in 'halfpenys quhilk wer umquhile (i.e. formerly) pennys'.¹ Moreover, it seems likely that the coinage of billon pennies had been in abeyance for a period before a limited issue was authorized in 1485. This is an inference from the wording of the Act of Parliament of that year—*because* the merchants who brought in silver bullion were to be paid 12s. per ounce, *therefore* the king granted power to the moneyers to strike one ounce of pennies for every forty ounces of silver. The new price per ounce of silver

¹ C.-P., Introduction, cxxix, f.n. 3. It seems likely that the devaluation of these former pennies took

place in 1482, at the same time as the demonetization of the black money.

could not be paid exactly in groats and half-groats, unlike the price set in 1483/4, 11s. 8d. Confirmation that these pennies authorized in 1485 were of billon, not fine silver, is found in the provision that the warden's account at the Exchequer was to show the bullion coined in the year, 'bath gold and silvir and penneis'. Nevertheless, no pennies are mentioned in the mint account for 7 October 1486(?) to 18 August 1487, the only one surviving from the heavy-groat period.¹ This is in striking contrast to the accounts for the beginning of James III's reign, in which the weight of bullion used for small pennies and halfpennies totals more than half that used for groats and half-groats—477 lb. odd, as against 832 lb. odd.

The withdrawal of the placks and the limitation on the coinage of billon pennies were not the only reforming measures at this time. Provision was also made to increase the supply of silver. The shortage of silver bullion, which of course was not confined to Scotland, had been a frequent concern of Parliament in James III's reign. The merchants were obliged to bring silver into the realm, in proportion to their exports of staple goods, but there was difficulty over enforcing this. The latest detailed Act on this subject, prior to the heavy-groat period, was that of 1474, which specified a rate of two ounces on various goods, but four ounces for hides. In 1483/4 the rate was set at four ounces for each serplar of wool, each last of salmon, and the corresponding units of skins, hides, and cloth; while in 1485 the rate for hides was raised by two ounces and herring were added to the chargeable goods. The numismatic evidence does indicate an improved supply of silver for a few years, but it is impossible to tell how far this was bullion brought into the country in accordance with these regulations and how far it was provided by refining the placks which were called in.

The withdrawal of the placks was an exceptional measure, which should probably be attributed mainly to public distrust of these coins. In general the policy at this period was to retain in circulation the old Scottish coins, together with English silver and the gold coins of various countries, their currency values being fixed in approximate accordance with their intrinsic values, although the currency value for coins then being issued was normally higher in proportion to intrinsic value, to allow for royal profit and coinage expenses. In 1475 (and in less clear terms in 1451), Parliament prohibited the use of any coin as bullion, ordaining that 'nouthir silvir nor gold that beris prent and forme of cunye of quhat cunye that ever it be of be in ony wise moltyn or put to the fire be the kingis cunyouris or goldsmythis to ony werk without speciale licence or charge of the king'.² There is always some doubt about how far such statutes could be enforced, but the use of much old coin, except the placks, as bullion is particularly unlikely in the case of the heavy-groat coinage because the change in the standard did not make this profitable; fourteenpenny groats at ten to the ounce in fact had a slightly higher intrinsic value in relation to their currency value than the preceding twelpenny groats at twelve to the ounce.

Recognition of the currency values of the different Scottish groats was facilitated by their varying reverse types. The basic type resembled that of England in having a long cross, legend and mint name, but the features in the angles of the cross were different. In an Act of Parliament of 1467, new currency values were ordained for the 'spurryt

¹ C.-P. 45. There is also, in this period, the Treasurer's account for about May 1490 to Feb. 1491/2, which includes the proceeds of coining 52 lb. 0½ oz.

of broken silver vessels, probably struck in groats rather than billon pennies (*CTS* i. 167).

² C.-P. 38.

grot', 'borage' groat, 'grot of the croune', and 'grot of the flour delyce': the only one of these Scottish groats not described by its reverse type was that of the moneyer Bonagius,¹ which could not be sufficiently specified in that way because it had the same three pellets as English groats. In the case of the heavy groats the crown type, as on the coinage of 1451 to 1467, was revived. This is rather surprising, in view of the weight reduction—ten groats to the ounce instead of eight—but the currency value was apparently the same. Crown groats were raised to 14*d.* by Act of Parliament in 1467, and the values given in this Act for the silver, although countermanded in 1468, do appear to have been in force from 1471, except during 'the time of the black money', about 1480 to 1482.² The commonest type of heavy groat has a striking portrait of James III, three-quarter face left, while the other fine silver groats, heavy and light, have a conventional facing bust. The alloyed groats of James III were particularly clearly distinguished, both on obverse and reverse: they bear a realistic portrait, three-quarter face right, and a long cross fleury, with thistleheads alternating with mullets in the angles.

The gold coinage immediately preceding the unicorns consisted of riders and their parts. These are of two types, the king riding on the first type to the right and on the second type to the left; by their lettering these types certainly correspond to the light groats of groups III and IV respectively. The Parliamentary record for the reigns of James III and IV is even less informative about the gold than the silver, and the standards for the gold can only be deduced from the coins themselves. There are no known gold coins which conform to those ordained by the Acts already quoted for the heavy-groat period, and unicorns, at eight to the ounce, were certainly the main gold coins struck from about 1484 until 1525. Under James IV there were also small issues of gold crowns in the light-groat period, either in parallel with the unicorn coinage or interrupting it. The unicorn type is less obviously derivative than those of the riders or crowns. The obverse shows a unicorn to left, royally gorged and chained, supporting the arms of Scotland.³ The reverse type has generally been described as a wavy star of twelve rays over a cross fleury, but I prefer to call the 'star' a radiant sun. On the French *écus au soleil*, introduced in 1475, the sun certainly has wavy rays. It seems possible, moreover, that the straight lines between the wavy rays, which are found on most unicorns of James V, were added to conform with the standard heraldic representation of a sun with straight and wavy rays alternating. This reverse type was perhaps suggested by that of the English ryals—always called rose nobles in the Scottish records—on which a sun (but with straight rays) was one of the features differentiating them from the pre-1464 nobles. The reverse legend of the unicorns is *Exurgat Deus et dissipentur inimici eius*.

There were no regulations requiring the merchants to bring in gold bullion for the coinage, as well as silver or instead of it. The extant mint accounts for James III's

¹ This identification for the 'borage' groats was suggested by H. J. Dakers (*BNJ* xxi (1935), pp. 69–70). Although confirmation is not needed, it is available; the correct form 'bonage' and also 'bonath' (a misreading for bonach) is found in a testament dated 1456 (*Miscellany of the Bannatyne Club*, iii, pp. 99, 93).

² The valuations quoted for old and new English groats, at 16*d.* and 12*d.* respectively, in Jan. 1484/5 (*Acta Dom. Conc.* i. 94*), were the same as those ordained in Oct. 1467 (C.-P. 32), when crown groats

were set at 14*d.*; and fourteenpenny groats were mentioned in July 1483 (*Acta Auditorum*, 112*).

³ The unicorn was a Scottish royal beast long before this, as shown by a charter in 1426 to 'Johanni Fraser, vocato Unicornie' (*RMS* ii, no. 57). Unicorn Pursuivant is still the title of one of the Scottish heralds. In 1482 James III used a signet ring portraying a unicorn (R. K. Hannay, *Early History of the Scottish Signet*, p. 19).

reign show small amounts of gold, on which a fixed seignorage was charged, so that it appears unlikely that this bullion came from the royal treasury. For James IV's reign there are no mint accounts in the Exchequer Rolls and the main evidence about bullion occurs in the Treasurer's accounts. In these the coinage profits are given without a detailed breakdown, except with respect to bullion from the royal treasury. The known sources of gold were French crowns and links of the king's chains, but other gold may have reached the mint. The commutation of French crowns showed a considerable profit, but there are indications that profit was not the sole motive for their use as bullion. In the Treasurer's accounts for this reign, from about 1500 onwards, French crowns predominate over unicorns or any other coin mentioned (or implied by the values); nevertheless when money was given to ambassadors or other foreigners, while they were staying in Scotland, then unicorns were used almost exclusively. This did not apply on the departure of a foreigner, when the coin would be carried out of the country. Thus a gift of forty unicorns to 'Maister Johne, the Franch mediciner' was recorded on 10 November 1503, but fifty French crowns on the same day to 'Mynour, the Inglis payntour, quhen he passit away', and also fifteen French crowns to 'James Nateres, messingeir of Ingland quhen he passit away'.¹ In the same year, the English ambassador, Lord Dacre, received 100 unicorns on one occasion, while his clerk and the 'tothir embassatour of Ingland' each had fifty unicorns.² These and many other cases lead me to believe that there was deliberate choice of the native gold coin as the only fitting medium for royal gifts of money to foreigners at the court. For this purpose special striking of unicorns from the most readily available gold are likely to have been required, since James IV was 'not able to put money into his strong boxes', on the testimony of the Spanish ambassador, de Ayala.³

The gold coinage of these two reigns shows greater artistic merit than the silver, with the exception of the realistic portraits on one type of heavy groat and the accompanying pennies, and on the alloyed groats. One may reasonably assume that the regular die-sinker was competent to engrave punches for the conventional facing bust on groats and smaller denominations, and other recurring features like the rampant lion of the arms of Scotland, but not the portraits; the spirited unicorn heads; the figure of St. Andrew on his cross, on James IV crowns; nor the equestrian figure on the riders. There is evidence that both dies and punches were made abroad on at least one occasion, since there is a recorded payment of £40 on 2 January 1503/4 'for the cunye Irnis and the punschionis of the samyne brocht hame be Johne Penycuke and deliverit to Matho Auchlek'.⁴ In other cases where one suspects the work of a more expert engraver than the regular die-sinker, one cannot tell whether, if a foreigner was employed, he worked temporarily at the Scottish mint, or whether the work was done abroad, but the latter would presumably be a cheaper arrangement. For skilled work of this nature the Scots would naturally look to the Low Countries. James III certainly employed a Flemish painter for the royal portraits on the Trinity altar-piece, and the round seal of James IV's brother, as Archbishop of St. Andrews, was made in the Netherlands in 1497.⁵

¹ *CTS* ii. 405-6.

² *CTS* ii. 363, 373, 374.

³ *Calendar of State Papers*, Spain, i, no. 210.

⁴ *C.-P.*, p. cxxxix; *CTS* ii. 222.

⁵ In *Andrew Halyburton's Ledger* (p. 215) there is an entry, for Nov. 1497, recording payment for making this seal. Halyburton operated mainly in Middelburg.

OUTLINE OF PROPOSED ARRANGEMENT

It has been recognized for many years that the heavy groats present some numismatic problems, whereas Burns's arrangement of the early unicorns was apparently accepted without question. On the silver, the only occurrence of a regnal numeral is the 4 on one groat die and one half-groat die of one of the four types. For the commonest type of groat, that with three-quarter-face portrait and arched crown (S. group VI), Burns's attribution to James III has been doubted by some later writers, but Mr. Ian Stewart¹ added further cogent arguments to those which Burns used, and the identification of this as the last type of James III can now be regarded as certain. The main reasons may be summarized here. This is the only type in which 'the visage' does not 'stand even', i.e. not showing the king full face, and so it must be the type superseded in January 1488/9, while the number and variety of dies of this group show that it must have been struck over a longer period than the first seven months of James IV's reign, which began on 11 June 1488. The portrait is that of a mature man, whereas James IV was fifteen years old at his accession, and it bears a close resemblance to sixteenth-century portraits of James III, which were presumably copied from a contemporary original. For the remaining two types of heavy groat, however, I have found reasons to alter the arrangement adopted by Stewart in 1954 and 1955, which was a modification of that of Burns. The type with crown and lis reverse (S. group V of James III) is transferred to James IV,² while what I describe as the rough issue (S. II of James IV) is placed earlier. The latter point is confirmed by a mule between the portrait type and the rough issue, which Mr. Stewart brought to my attention as soon as it came to light, after this article was typed in what was expected to be the final form. The position of the rough issue nevertheless remains in some doubt: the case for this being an irregular coinage issued in 1488 will be argued at some length, but there are difficulties about this, as about any other date.

The evidence used to establish the sequence for both gold and silver includes the fineness of the unicorns, the changes in punches within each denomination, and the relationship between denominations as indicated by their common use of punches, as well as general typological considerations and mules between types or classes. A certain amount of documentary evidence not previously considered by numismatists has been used, while the interpretation of those records which have already been published in Cochran-Patrick's *Records of the Coinage of Scotland* has been studied afresh.

The main conclusions about the gold coinage are that the order of those classes of unicorn assigned to James III by Burns and Stewart should be reversed, only one class of unicorn being retained under that reign, and no half-unicorns. The rearrangement implies that the gold and silver issues of the first coinage of James IV were more extensive than was previously thought. This is consistent with the date 1496 for the beginning of James IV's light-groat coinage, which has been adopted in the light of the documentary evidence. There are some new features in the proposed order of classes within this light coinage of James IV, as well as within the two major types of heavy groat, as set out in Appendix B.

¹ 'The Heavy Silver Coinage of James III and IV' *N* xxvii (1954).

² I have learnt that Dr. James Davidson, with Mr. H. J. Dakers and Mr. P. Thorburn, likewise

came to the conclusion many years ago that this type was probably struck under James IV, but they did not express their views in print.

The links between what are believed to be corresponding issues of gold and silver are, in some cases, not very strong, nor are those with the billon coinage. It is thus convenient to consider the unicorns and the heavy groats separately, before giving much attention to their correspondence. It was a reconsideration of the documentary evidence about the groats which originally led me to think that the previous arrangement might be wrong, but the unicorns appeared to provide the most convincing evidence (until the discovery of the new mule groat) and this will be presented first.

UNICORNS

The earliest record of unicorns known to me is in a legal judgment on an action for repayment of debt dated 18 January 1484/5—'xij/l. in gold callit unicornis twenty s. the pece'.¹ These coins, listed with others (including riders at 24s.), 'for the quhilk he is bund to the said Lord Avandale be his obligacioun under his sel schewin & product befor the lordis', were presumably in circulation several months earlier, although the date when the debt was incurred is not given. Another early record of unicorns is in the mint account for 7 October 1486 to 18 August 1487,² which shows 8 lb. 1 oz. of gold 'monetati in denariis aureis vocatis unicarnys' and 181 lb. of silver in fourteenpenny groats and half-groats. The first specific mention of half-unicorns appears to be in January 1488/9.³

In spite of the different gold coinage specified in the Act of Parliament of February 1483/4, and those following, it is reasonable to assume that the coinage of unicorns was first ordered at practically the same time as the heavy groats. The documentary evidence just quoted makes any later date unlikely and there is in fact a close correspondence between what is apparently the first class of unicorns and the earliest coins of the portrait type of heavy groat. The only evidence which might suggest that unicorns predated the heavy groats is the use of cross-ends of a form similar to that of the unicorns (but not from the same punch) on some late varieties of alloyed groat and on the billon placks of the second issue.⁴ These issues of base coins may, like the previous ones, have been concurrent with fine silver groats, but I prefer to date them (or at least the placks) a little before the time when heavy groats were ordained, rather than after this. This would be consistent with the indications of a serious effort to improve the coinage at that time, which I have already emphasized. If this is correct, the new style of cross-end may well have been introduced first on the base coins, rather than being copied from the unicorns.

Burns made a primary division, in classifying the unicorns with Gothic lettering, according to the crown on the unicorn's neck. In his first division this has three lis, and in his second division (S. class II of James IV) five lis. This article is concerned in detail with the first division only, but some consideration of the second division is required when attempting to date the change. Burns and Stewart treated the first-division unicorns, which were issued with the heavy groats and the earlier light groats of James IV, in four categories, simply according to the stops used, but it proves necessary to split those with six-pointed star stops into two classes. For ease of reference, and to avoid any confusion with the letters used for the types of heavy groat, I shall denote my classes of unicorn

¹ *Acta Dom. Conc.* i. 94*.

² C.-P. 45.

³ *CTS* i. 102.

⁴ Stewart, 'The Identity of "The New Plakkis Last

Cunyeit"', *BNJ* xxviii (1957), pp. 317–29. For more details of the late alloyed groats, see Murray and Stewart, 'Unpublished Scottish Coins: V. Light Groats and Base Groats of James III', *NC* 1970.

by the letters X, Y, Z, and P, Q. The choice of letters is partly intended to emphasize the close relationship between P and Q, which Burns correctly attributed to James IV, while classes X, Y, and Z, which he attributed to James III, are those which present some problems. Sufficient detail to distinguish these classes is tabulated below, together with the previous classification and the proposed new one. The corresponding small letters are used for half-unicorns, which by their lettering, stops, and style of reverse sun can confidently be placed in corresponding classes, except that there are no known half-unicorns corresponding to class X unicorns.¹ Those with Roman N have the royal title and there are other reasons for classing them as y. All y half-unicorns are without stops on the obverse, but some of the reverses have single six-pointed star stops. Two anomalous half-unicorns are distinguished as y* and z*; the reasons for this come out most clearly in Table II which shows punch changes.

TABLE I

	<i>Classification</i>		<i>Stops (normally double)</i>	<i>Initial-marks</i>	<i>No. of obv. dies</i>	<i>No. on plate V</i>	<i>Notes</i>
	<i>Proposed</i>	<i>Stewart</i>					
UNICORNS							
X	Ia, James III	II, James III	5-pt. stars	Obv. cross fleury Rev. lis 1	4	2	Roman N. Exurgat legend both sides
Y	Ib, James IV	I, James III	6-pt. stars	Lis 1	7	17	Gothic N. Royal title on obv.
P	Ic, James IV	Ib, James IV	Broken 5-pt. stars	Lis 2 (perhaps = 1)	1	18	As last
Q	Id, James IV	Ia, James IV	V-shaped	Lis 3 or cross pommee	3	19	„ „
Z	Ic, James IV	I, James III	6-pt. stars	Lis 4	5	20	„ „
HALF- UNICORNS	all James IV						All with royal title on obv.
y*	Ib		None	Lis 5	1	8	Gothic N
y	Ib	II, James III	None or single 6-pt. stars	Lis 5	4	9	Roman N
p	Ic	Ib, James IV	As P, but only as initial-mark		1	10, 12	Gothic N
q	Id	Ia, James IV	As Q	Lis 5 or 6, cross pommee, or as stops	1	13	„ „
z*, z	Ie	I, James III	As Z	Lis 4	1, 5	14, 15	„ „

Burns mentioned only one unicorn of class Z (B. fig. 628) and he suggested that it was a forgery, because of its peculiar execution.² This is, however, a normal specimen of class Z, and Burns's comment can be taken as an indication of how great the difference is between classes Y and Z. Different punches were used for many features, but the distinction most easily described is in the treatment of the sun:

Class Y, y—flat central disc, about 3 mm. in diameter on Y. No central pellet, although a raised point is sometimes found, caused by the die-sinker's compass point when marking out the circles on the dies.

Class Z, z—sun's rays are separated right up to a central pellet.

Class Q resembles Z in this respect, although the pellet is smaller.

The one reverse die of class P likewise has the pellet, and the sun seems, by various details, to be from the same punch as used in classes Q and Z, but the separation of the

¹ Similarly, no fractional denominations of type I riders of James III are known. However, the fact that the y* half-unicorn, which is fairly closely dated by a broken letter T, uses punches not otherwise

known for the tail and cross-ends, suggests that there may have been earlier unicorns, of which no specimens are known.

² B. 152.

sun's rays right to the centre cannot be seen; it is doubtful whether the slight double-punching could account for this, so that it is possible that the punches were not the same. In class X there is a central disc, but smaller than that of Y, with or without a pellet.

The only mules known between any of the classes are for X and Y. Y/X mules are not much rarer than X coins, while a single X/Y mule coin is known.¹

The unicorns of Burns's second division, like all except class X of the first division, have the royal title on the obverse and normally have Gothic N,² so that typological reasons for taking X as the earliest class are immediately apparent. A possible explanation for the unusual features of X coins is that the first unicorn dies were made by a foreign craftsman, perhaps in the Low Countries, as suggested above. If a Roman N (which was quite common on coins of the Low Countries at this time) was used on pattern dies made by the engraver of the punches, it would be natural enough for the Scottish die-sinker to copy it. The omission of the royal title is surprising in any circumstances, and it was presumably due to a misunderstanding, which seems rather more likely to have arisen if the work was done away from the Scottish mint. The quality of the die-sinking in class X is in general far better than in the other classes—the unicorn is put together accurately, the lettering is regular and contraction marks are used fairly consistently—and this is a point in favour of this class being the first.

Detailed study of the punches confirms the position of class X as the first and provides the only evidence for part of the sequence. One piece of evidence for class Y following class X is the letter T with broken base, which is found on the y half-unicorn and also on the reverse of the half-groats of James IV's first issue (Pl. V, no. 7); this letter T appears to be from the same punch as the unbroken one on the obverse of this half-groat, and also on the James III heavy half-groats.

Table II summarizes most of the changes among the punches peculiar to the dies for unicorns and half-unicorns. Fig. 1 shows some of the features of these punches more clearly than the plate, since double-striking and wear make it impossible to find individual specimens on which all these small details are clear. For any one feature, the scale is intended to be consistent. Certain other features, which do not appear either to confirm or to contradict the sequence, have not been included; the horn, for example, varies in twist and thickness.

The unicorn heads of classes X and Z have been studied with particular attention. At first glance they appear to be different, but this seems to be due to deterioration of the ears, on later specimens of Z; the fine detail of the mane, when distinguishable, is convincingly the same. This fact casts some doubt on the position of class Z, in the sequence as set out in Table II, namely XYPQZ. It will, however, be apparent, to anyone who attempts to rearrange the sequence, that any other order would involve more cases in which uses of the same punch for one of the features considered would be separated by the use of a different punch. The late position of the Z unicorns is confirmed by a considerable weight of evidence, from the letter punches, that class Z, like classes P and Q, was contemporary with the light groats of James IV, and such evidence is even stronger for z half-unicorns.

¹ The X/Y mule is Rich. fig. 179. I have recorded sixteen specimens of X and thirteen of Y/X mules.

² There are individual exceptions. A class Q reverse (B. fig. 659) has II for N in *dissipentur*, but

Gothic N in *inimici*; and Roman N occurs on a second-division unicorn, B. no. 7b. The existence of the y half-unicorns with Roman N may also be thought to reduce the force of this argument.

TABLE II

	<i>Unicorns</i>					<i>Half-unicorns</i>					
	X	Y	P	Q	Z	y*	y	p	q	z*	z
<i>Obv.</i> Head	A	B	B	B	A	Not distinguished					
Tail	A	B	B	B,C	C	a	b	b	b	b	c
Shield and lion	A	B	C	C	C	a	a	b	b	c	b
<i>Rev.</i> Sun	A	B	C	D	D	a	a	b,c	c	c	d
Cross-ends	A	A	B	B	C	a	b	b	b	b	c

The rays of sun b are straighter than usual, and the ends turn in a direction opposite to that in which they turn on all other unicorns and half-unicorns. Suns c and d are very similar to each other, but d has longer rays. Sun C may be the same as D.

Lion c is large (but not as large as on any of the unicorns) and rather crude. The shield and lion of Z appear to be from the same punches as those on P and Q, but on Z the fleurs-de-lis of the tressure are indicated, whereas on P and Q they are omitted.

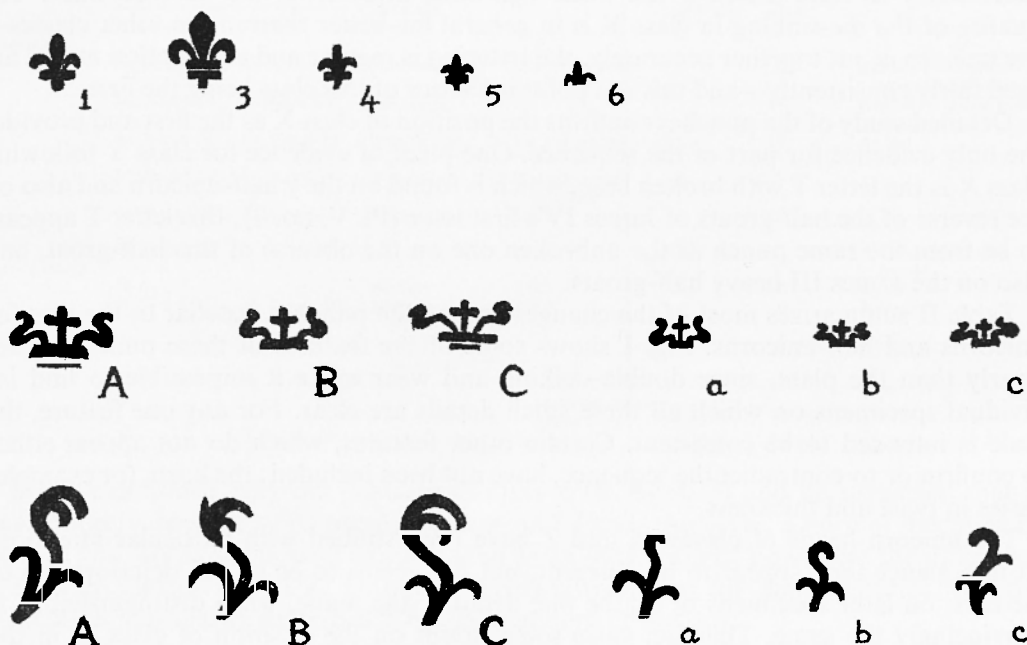


FIG. 1

THE CORRESPONDENCE BETWEEN UNICORNS AND LIGHT GROATS OF JAMES IV

The change from the heavy-groat standard, in James IV's reign, apparently took place in 1496. In June of that year Parliament ordained 'that our soverane Lord with avise of his consale ordane / and statute ane famous and wise man . . . to be maister of the money / and anent the strikeing the forme thairof / the fynace / and the course . . .'.¹ This is not conclusive evidence that a change took place then, but an earlier change without any indication in the parliamentary record would be less likely. There is also

¹ C.-P. 50.

documentary evidence that gold and silver from the royal treasury were used as bullion for coinage in 1496 and 1497, when the king had to meet the heavy expenses of war with England, initially on behalf of the pretender Perkin Warbeck. In a letter to Henry VII in September 1496, John Ramsay of Balmain asserted that 'the King of Scotts had not a C. pounds quhill [until] now that he has cunyet his chenys, his plat, and his copbords',¹ and the use of links of the great chain as bullion for unicorns in February 1496/7 and twice in the following summer was recorded in the Treasurer's accounts.² It is thus a satisfactory aspect of the dating here proposed for the introduction of the light groats that there are unicorns (those of classes P and Q) which closely correspond to some of the earliest of these groats: this can hardly be claimed as confirmation, however, in view of the almost complete lack of documentary evidence about bullion minted in the preceding years of this reign.

The sequence of classes of light groat has been determined by a study of the punches and by die-links, as summarized in Appendix B. The earliest varieties are those without a regnal numeral and with V-shaped stops and peculiar lettering; they have lis on the cusps of the tressure, apparently from the same punch as was used for the initial-mark of one q half-unicorn reverse die (lis 6). Following this, the same stops were used with irregular lettering of more normal character; the single obverse die of this variety has three pellets on the cusps, while all later classes have neat trefoils. This irregular lettering is closely matched on the class Q unicorns; in particular the small R and G, and the letter T with very wide base and long pendant serifs, a distinctive feature found also on the following groats, which have the king's regnal number expressed in turn as QT, QRA, and IIII. The class P unicorns have very similar lettering, except for a broken G, a small P, and a small plain T. On the halves, too, class p has a plain form of the letter T while class q has the distinctive form of T, using the same punch as the slightly later half-groats; and the letter G of class q is also apparently that of the half-groats. These features of the letter punches make it fairly certain that the class Q unicorns were later than those of class P; the evidence given in Table II leads to the same conclusion, but it is desirable to establish this point without reference to the position of class Z in the sequence. The 'V-shaped' stops, which would be more accurately described as Y-shaped, may possibly be from the same punch as the broken-star ones, further deteriorated; but one would be willing to accept them as intentional, designed to accompany the strange lettering of the first groat dies of this light coinage. The broken-star stops are also found on the groats, but only on one reverse die, with the irregular lettering, which is muled with the QT obverse (B. fig. 670). This die may nevertheless be earlier than some of the V-stop groats, since one of these (B. fig. 658A) has an A with a broken cross-bar, apparently from the same punch which shows no break on the broken-star die nor on the P and Q unicorns.

The closest parallel for the lettering of the class Z unicorns occurs on a unique gold crown (B. fig. 672, S. fig. 135), which depicts St. Andrew holding his cross, instead of the normal Scottish type, with the saint crucified. This crown has much the same lettering as the Q unicorns, but there are two clear differences, namely a letter P with a disproportionately large loop and an R with a somewhat compressed loop, the latter being normal on the James IV light groats with regnal number indicated by QT, QRA, and IIII.

¹ Sir Henry Ellis (ed.), *Original Letters Illustrative of English History* (1824), 1st ser. i; J. Pinkerton, *History of Scotland* (1797), ii, Appendix II, p. 440.

² C.-P. 51.

This is the regular form of R on class Z unicorns, while the same letter P occurs on some of them. The one surprising feature of the lettering of class Z unicorns, for an issue following closely after the Q unicorns, is the absence of the distinctive letter T with long pendant ends, but z half-unicorns do have this form of T, in half-groat size: only in respect of the letter D is the lettering of the z half-unicorns consistently different from that on the half-groats corresponding to QRA groats (Pl. V, no. 21). One further positive link between the class Z unicorns and the undoubted coins of this light-groat period is the initial-mark, lis 4, which is found also on a few billon pennies of Stewart class II (B. figs. 678 B and C).

The only important feature in common between classes Y and Z of unicorns and half-unicorns is their use of six-pointed stars as stops, and this point of agreement is in no way an objection to these classes being separated; such stops were used not only on the heavy groats with crown-and-lis reverse but also on the James IV light groats with QT and QRA (although not consistently, being mixed with five-pointed stars), and again on the late groats of this coinage, with Arabic numeral or none.

The limits of the period of class Z unicorns cannot easily be determined, even relative to the groats, but it appears likely that their issue began before or during the issue of QT groats, and continued during and perhaps a little after the issue of QRA groats. The issue of crowns exactly corresponding to the groats with numeral IIII may mark the end of the first-division unicorns, although it is quite possible that both types of gold coin were authorized to be minted concurrently.¹

The second-division unicorns (S. class II of James IV) certainly correspond to the light groats with old Arabic numeral—some of these unicorns bear the same numeral—and to those with star stops and no numeral; but their correspondence to the much commoner placks is clearer, since the stops and initial-marks agree, as well as the lettering. One can get an estimate of their date via the placks. The first record of James IV's placks is in the Treasurer's accounts for February 1504/5 to August 1506,² and it is probable that the French crowns converted into Scottish coin in this accounting period and the next were made into class II unicorns. In the absence of any coinage accounts for the few years preceding this, an earlier date is quite possible for the first placks of this reign, the rare type with QRA (S. class I). It is natural to assume that these were concurrent with QRA groats, in which case there may have been a gap in the plack series after the QRA ones. A unique half-unicorn (S. II*), perhaps a pattern, corresponds to these class I placks in its lettering, trefoil stops, and initial-mark cross potent, and likewise reads QR(A).³ The reverse type and legend differ from all other unicorns—an I in the open centre of a sun with fourteen rays, and *Salvum fac* legend as on the groats. The style of the obverse is very much that of the class II unicorns, particularly in the tail and the short hind legs. No other class II half-unicorns are known, but the punches for the beast itself and the lion of the escutcheon appear to be used also for some half-unicorns with Roman lettering (B. fig. 735), originally attributed to James V but now thought more likely to belong to the last coinage of James IV.

There are no billon pennies with the V-shaped stops of the first light groats of James

¹ It is known that gold crowns and 20s. pieces, at different standards of fineness, were both authorized to be struck in 1547 (*Registrum Secreti Sigilli Regum Scotorum, The Register of the Privy Seal of Scotland*,

iii, no. 2181).

² C.-P. 52.

³ S. fig. 299, from Bute sale catalogue, lot 164, Sotheby, 11 June 1951.

IV: if any billon was issued concurrently with these and with the class P and Q unicorns, it may have been a continuation of the saltire pennies of the first coinage (S. type 2). With the Z unicorns, and the light groats with QT and QRA, there were a few pennies of good billon, Stewart class I of the second coinage, as well as the neat ones of base billon, Stewart class II.

THE FINENESS OF UNICORNS

Specific-gravity determinations show that unicorns of class X are of finer gold than the others. Table III summarizes the evidence, and gives an indication of the fineness in carats, based on the assumption that equal parts of silver and copper were used in the alloy. Appendix A gives more detail, with a discussion of the statistical significance.

TABLE III

<i>Class</i>	<i>Specific gravities¹</i>	<i>Mean</i>	<i>Indicated fineness in carats</i>
X	18.5*, 17.9, 18.7†, 17.6†	18.2	22½
Y/X	17.3*, 17.1, 17.0, 7.2	17.2	21
Y	16.5*, 16.9	16.7	20
Q	16.3, 16.1, 15.8	16.1	19
Z	16.4, 16.7, 16.3†, 18.1†	16.9	20½

For the preceding gold coinage, the riders of James III, a slightly lower fineness than for class X unicorns is indicated, the specific-gravity results being 17.7, 18.0, 17.5 for riders of the first type, and 17.5, 17.3 for half-riders of the second type. All the half-unicorns appear to be considerably less fine than class X unicorns, but the results are not reliable for these light coins.

On general grounds, it appears more likely that the unicorn coinage began at the finer standard of class X and was then debased, rather than starting with class Y or Z (as in the old classification), at a lower standard than any preceding gold coinage, changing to the higher standard of X, and then again deteriorating. This argument is reinforced by the documentary evidence that the currency value of unicorns was higher initially, at 20s. in 1485, than it was for most of the following reign—it stood at 18s. in 1488 and until at least 1508, being increased to 20s. by 1512.² The reduction in the currency value may have coincided with a reduction in fineness, perhaps when the Y/X mules were struck. Although it is technically correct to designate these as mules, since their obverse dies are not homogeneous with their reverses, there are enough specimens to suggest that this was an intentional issue, and the specific-gravity results indicate that an intermediate standard of fineness might have been in operation then.

Mr. Stewart has suggested³ that the low fineness of unicorns (which he then believed to be all of 21 carats) might be explained by the use of chain gold as bullion for these coins, as is known to have occurred on several occasions in James IV's reign. This

¹ Figures marked * were supplied by the British Museum, and † by the National Museum of Antiquities of Scotland. The high figure in the results for class Z unicorns is for the one which Burns thought

to be a forgery.

² CTS i-iv, *passim*.

³ In manuscript notes, made some time earlier, which he most kindly sent for my use.

explanation should perhaps be generalized to include other sources of gold baser than the previous Scottish gold coinages. Clearly it would have been a convenience to use as bullion any baser gold which might reach the mint, perhaps mixing it with an appropriate quantity of fine gold but without refining it, since that involved some wastage as well as being costly in labour and materials. At this time the standard ordained for the work of Scottish goldsmiths was 'als fyne as It is first moltyn in presens of the awnare',¹ and in 1458 it had been 'na wer thane xx granys',² so such work would not be suitable as bullion for a fine gold coinage. The specific-gravity results suggest that the standard of the unicorns dropped below 21 carats on many occasions. It is not certain that this was the intended standard in James IV's reign, but even if it were so in general, particular changes might have been authorized.³ In February 1496/7 links of a royal chain weighing 21 $\frac{3}{4}$ oz. were coined into 174 unicorns, which at eight unicorns to the ounce (as specified in March 1517/18) agrees exactly with the weight of the gold, and the same equality holds for the following July, but in August the proceeds were slightly higher in relation to the weight of chain gold.⁴ In the accounts for 1511-12, however, there is a considerable discrepancy, which (if the figures are accurate) must be the result of extra alloy or deficient weight. The proceeds of links of the great chain weighing 7 lb. 5 $\frac{1}{2}$ oz. were £1089. 5s. 4d.⁵ which should represent just over 8 $\frac{1}{2}$ lb. of metal, the unicorn then standing at 20s. Even if the chain was as fine as 23 carats, these unicorns, if struck at full weight, were not more than 20 carats fine, which is approximately in agreement with the specific gravities (see Appendix A).

The fineness of all unicorns has previously been assumed to be 21 carats, on the strength of the only definite documentary evidence, but this is for a later date. In March 1517/18, unicorns 'of the fynes of xxj caretis' were authorized;⁶ and in 1596, in the list of prices at which all kinds of gold and silver coins were to be received at the mint, unicorns were quoted at 21 carats.⁷ Burns commented⁸ on the discrepancy between the currency values of unicorns at 18s. and riders at 23s. (and other gold coins) in comparison with their intrinsic values, particularly as riders were thought likely to be finer than 21 carats. Since unicorns, struck at eight to the ounce, are now known to have passed for 20s. in 1484/5, when riders, struck at six to the ounce, were rated at 24s., the discrepancy then, if these unicorns were indeed of 21 carats, would have been even greater than Burns thought; and it is not eliminated, although it is considerably reduced, by the extent to which class X unicorns appear to be finer than riders. The explanation offered by Burns is that unicorns (like most other Scottish coins) were overvalued while in course of issue, in relation both to English and other foreign coin and to the earlier Scottish coins which still circulated, and this is undoubtedly correct, although the heavy groats were not overvalued in this way. When unicorns were current at 18s., rose nobles passed for 36s. or 35s., the latter figure being thirty of the heavy groats, as proposed for the new Scottish gold in the Acts of 1484 and later. Unicorns were almost half the weight of rose nobles, but the rose nobles were much finer. There was a similar discrepancy in the

¹ 3 Feb. 1489/90, *APS* ii. 221.

² *APS* ii. 48. This presumably means 20 carats, and the silver standard of 'na war na xj granys' means $\frac{7}{12}$ ths fine, but neither for gold nor for silver was the fineness denoted in these terms in later Scottish records.

³ As in James V's reign. In Mar. 1532/3 he ordered

the striking of a 20-carat crown, whereas the standard laid down in 1525/6 and also in 1546/7 was 21 $\frac{1}{2}$ carats (*Acts of the Lords of Council in Public Affairs, 1501-1554*, p. 398).

⁴ C.-P. 51.

⁵ C.-P. 53.

⁷ C.-P. 267.

⁶ C.-P. 62.

⁸ B. 146.

currency value of French crowns (which were generally rated at 14*s.* in Scotland at this period), in relation to their intrinsic value in comparison with the Scottish gold coins, and this meant that they could profitably be used as bullion at the mint.

THE EVIDENCE OF THE PERTH HOARD

There is no hoard evidence about the sequence of the heavy groats, but there is one well-documented hoard containing unicorns which may have been deposited while those of Burns's first division were still being issued. This is the 1920 Perth hoard,¹ deposited about 1500, in which the latest coins were light groats, one with QRA and five with IIII. All the other silver coins were of issues earlier than 1484. This absence of heavy groats of the period from 1484 to about 1496 led Macdonald to conclude that the three-quarter-face portrait ones—the only common type—had not been struck at the time that the hoard was deposited. There were, however, fourteen unicorns, and the value of the coins of the heavy-groat period, although not their number, represents a reasonable proportion of the hoard. The relationship between intrinsic value and currency value was virtually the same for the heavy groats as for the preceding and following light groats, so that there is no obvious reason for deliberate omission of the heavy ones when putting aside silver coins for this hoard, but the natural preference for hoarding gold when it was available may to some extent explain the absence of heavy groats, particularly if the bulk of the silver in the hoard represents earlier savings.

The only gold coin apart from unicorns was a half-noble of Brabant, dated 1488. The unicorns were all of classes X and Y and X/Y mules, which does provide some confirmation of Z being later in the sequence. I have recorded the following distribution of specimens and dies, by class:

	X	X/Y	Y	P	Q	Z	Total
Perth hoard	3	3	8	14
Others	16	13	18	2	8	18	75
Obverse dies	4	(1)	7	1	3	5	20

Since there is no reason to doubt that the rare classes P and Q were issued a little before the latest coins in this hoard, I shall not give any figures for the significance of the absence of unicorns of these classes; even for the commoner class Z unicorns, their absence from a sample of only 14 is not overwhelmingly significant. If a random sample of 14 is drawn from a stock in which one class has probability $\frac{1}{4}$, the chance of that class not being represented in the sample is $(\frac{3}{4})^{14}$, about 0.013 or 1 in 75. This figure of $\frac{1}{4}$, based on the number of specimens of class Z, is only taken as a rough guide to show that it is unlikely that class Z unicorns had been issued sufficiently early for them to form that proportion of the available stock, during the period—presumably a number of years—when gold coins were being put aside to form this hoard. If the class Z unicorns were about contemporary with the light groats with QRA, as proposed in this article, their absence from the Perth hoard would not be at all surprising, even though some or all of them would have been issued before its closing date. The latest coins in the hoard, being silver, might have been a last-minute addition to the savings element. Moreover, there is some reason to think that newly minted gold coins would pass into circulation

¹ G. (later Sir George) Macdonald, 'A Hoard of Coins found at Perth', *NC* 1921, pp. 294–316.

in a more patchy fashion than the silver, at this period. The latter would go to the merchants of the various burghs in payment for the bullion which they were required to bring to the mint, whereas it seems likely that most of the gold coined in James IV's reign came from the royal treasury, and passed into circulation by his expenditure.

HEAVY GROATS

The heavy groats will now be considered in more detail. There are four types, here called A (the portrait type), B, C, and R (the rough issue), which undoubtedly belong to this period, the only time when groats were struck at ten to the ounce. In A, B, and R the reverse type has a crown and three pellets in alternate angles of the cross, while in C one crown is replaced by a fleur-de-lis. A, B, and C have an annulet between the pellets, as has one die of R. The outer legend is an abbreviated version of *Dominus protector meus et liberator meus*, as had been standard on fine silver groats since they were first introduced in 1357. There are half-groats of types A and B only. Table IV summarizes the classification and other points.

TABLE IV

	Classification		Obv. type	Stops	No. of dies recorded		
	<i>Now proposed</i>	<i>Stewart</i>			<i>Obv.</i>	<i>Rev.</i>	<i>Plate V</i>
A	As before	Gp. VI, James III	¾ face portrait, clothed	5-pt. stars (<i>obv.</i>) Annulets	3 15	{Edinburgh 30+ Aberdeen 4	1 6
R (rough issue)	Civil war coinage, period of A, or first issue, before A	Gp. II, James IV	Facing bust, clothed	Saltires	1	Edinburgh 5	5
B	As before	Gp. I, James IV	Facing bust, nude	Annulets	4	Edinburgh 4	11
C	Second issue of James IV	Gp. V, James III	Facing bust, nude	6-pt. stars	5	Edinburgh 6	16

The position of A, the portrait type, as the last issue of James III, is firmly established. Type B, which sometimes bears the regnal numeral of James IV, has reverses which are generally indistinguishable from late ones of type A, although the obverse lettering shows some minor differences. One case is known of a reverse die used with obverses of both types A and B, a lis being added to the die on the centre of the cross for its use in type B (B. figs. 644, 651). This fact, pointed out by Stewart,¹ helps to establish the position of type B as the first distinct issue of James IV, struck in accordance with the Act of Parliament of January 1488/9. The head and crown punches for the type B half-groats were the same as for group IV half-groats of the light coinage of James III, first struck about 1482, or perhaps earlier. This clear example of the reuse of punches several years after they were made, and with an intervening issue which did not use them, may be compared with the case of the unicorn head of classes X and Z, which seems to imply reuse about twelve years after the punch was made and perhaps eight years since it was last used. Another punch from James III's group IV, the king's crown of the groats, was also reused for type B, and for the earliest type C obverse die; clearly this link provides no real evidence about the position of C in the sequence.

¹ Stewart, 'The Heavy Silver Coinage of James III and IV', *BNJ* xxvii (1954), pp. 182-94.

An A/R mule is now known (Pl. V, no. 4), the A obverse die being in the early style (S. VIa), which would seem to indicate that the rough issue preceded type A. There are, however, some good reasons for doubting this, and muling of dies made some years apart cannot be ruled out.¹ It is, however, almost inconceivable that the A/R mule could have been struck (except in error) after January 1488/9, when Parliament ordained the change to a facing bust. Nevertheless, the arguments about the sequence of the heavy groats, which were developed in ignorance of this mule, have been retained with only minor modifications, while the implications of the mule are discussed afterwards.

There are several reasons, no one of which alone is compelling, for placing the type C groats after type B, and for identifying type C as the issue ordered in February 1489/90 to have 'a signe and takin maid in the prenting' to distinguish it from James IV's first type (perhaps because a new moneyer was responsible). The lis in one quarter of the reverse would certainly be a suitable sign, since Scottish groats of different coinage standards had commonly been distinguished by their reverse types. It is true, however, that the sign required by the 1489/90 Act did not mark any change in the standards or value of the groat, so that a privy mark would suffice, such as the lis on the centre of the reverse cross of the type B groat B. fig. 651 and the half-groat (Pl. V, no. 7). This might indeed have been adopted as a temporary measure, to conform with the Act of Parliament, before dies for a new type had been made.

Variations in the form of the outer inscription on the groat reverses provide some evidence that the sequence of types was A-B-C. In the following discussion some use is made of the order of dies within types A and C, for which the evidence is given in Appendix B. In types A and B there are two main forms of the inscription, their persistence presumably being due to the die-sinker copying from coins instead of going back to the basic legend. To some extent these two forms occur in parallel, but (i) is in general earlier than (ii). One die of each form is known for type B groats, but that of form (i) is reused from type A. Ignoring the stops and the frequent use of C for E, and dividing the inscription according to the quarters of the cross, these forms read as follows (but in Gothic lettering):

- (i) DNSP ROTCT ORMET ERATO
i.e. DomiNuS PROTeCTOR Meus ET libERATOR meus

On the first two dies, the legend is more complete, reading DNSPR OTCTOR METLIB ERATOM. Several dies have the variant beginning DINS PROTC.

- (ii) DNSP ROTEC TORME VETORV
i.e.MEUs ET liberatOR meUs

There are variant endings VORVM, VEORV, ETORV.

¹ The crown groat coinage of 1451-67 provides examples of dies of widely disparate date being used in combination. In one published case the reverse die was estimated to be seven years earlier than the obverse die (Stewart and Murray, 'Unpublished Scottish Coins: IV, Early James III', *NC* 1967, p. 155). In another case it is the obverse die which is earlier. This die, which is unique in its rosette stops and long

hair and shows various early features in the lettering, was probably made before the normal dies of Stewart class I of the second issue, but it is known only with reverse dies of late class II. An absolute dating is harder to estimate here, but more than a quarter of the second issue, by volume of output, appears to separate the production of this obverse die from its use for the known coins.

The following forms, each on only one die of type A or B, do not fit into this scheme:

- | | | |
|-----------------|-------------------------|--------------------------------------|
| (iii <i>a</i>) | DNSP ROTOR MEVM ETER | Type A, B. no. 53a. |
| (iii <i>b</i>) | DNSP ROTORM ETMEO RVMET | Type A, B. no. 33. |
| (iii <i>c</i>) | DNSP ROCTO RMEVM ETMEV | Type B, Pl. V, no. 11. |
| (iii <i>d</i>) | DNSP ROTORM EVMET MEVOR | Type B, S. fig. 123; also in Type C. |

The corruption of *Protector* to PROTOR seems to have arisen independently more than once, since the endings are so varied; the die with the reading (iii*a*) is much earlier than the others, and shows some affinity with form (i). What does seem to be significant is the fact that form (iii*d*) is repeated exactly on the first three of the six known C reverse dies. The other three C reverse dies have inscriptions of another distinct form:

- (iv) DNSP TECTO MEVSE TLEBM
and DNSP TECTM EVSET LEBAM (two dies)

This is much more remote from (iii*d*) than are the other versions used in type B, and it seems far more likely that form (iii*d*) originated in type B (or possibly A) and was copied in type C, rather than the copying being the other way round or this highly aberrant form arising independently in both types (as would be required if type C was the earliest).

On the rough issue (type R) reverses, the readings are:

DNSP ROTE CTOR MEVSE
DNSP TECTO RMEV SETLI
DNSP TECTO RMEVS ETLEB
DNSP ECTOR MEVSET LEBER
DNS PTEC TORM EVSE

These are like (iv) in having *meus* in full, and in the spelling LEB, but there is no real evidence here of copying between types C and R, particularly as the spelling LEB occurs also on some light groats of groups I and III of James III. Otherwise these inscriptions on type R are straightforward versions of the basic legend, with standard abbreviations, as far as it would fit on the coin in the large lettering of these dies.

Another argument for the proposed arrangement depends on the date of the introduction of light groats; the reason for taking this as 1496 has already been given. It was mainly the extreme rarity of the rough issue, which Stewart then placed as the second type of James IV, and the fact that there is only one obverse die of that type, which led him in 1954 to date the end of the heavy-groat coinage as early as 1491 or 1492,¹ in the absence of satisfactory documentary evidence (and, of course, before the discovery of the A/R mule). In contrast to the single obverse die of type R, there are five of type C, so that the issue of this type may have been spread over a few years. Interruptions of the coinage, either complete or affecting only some denominations,² were certainly possible, but the relative extent of these two types does make it more likely that type C rather than type R represents the fine silver struck in 1490–6. A similar argument applies to the unicorns, since the earliest ones attributed to James IV by the old classification were

¹ He now accepts 1496 as the probable date for the change to light groats.

² In *The Scottish Coinage*, Stewart refers to 'the cessation of the groat coinage' in the latter part of

James IV's reign. Although placks certainly predominated then, late varieties of light groat, which are now known, seem to show that these were occasionally struck during the later years of the reign.

those of classes P and Q, which correspond to light groats. The new arrangement assigns unicorns of class Y to the beginning of James IV's reign, instead of requiring that any struck in this period were from the few dies of class X, the class corresponding to the earliest groats of type A. There is an indication that some gold was minted early in the reign, since Acts of Parliament in 1489/90, 1491, and 1493 attempted to enforce the currency of the gold and silver coin, even if cracked, 'quhilk is sufficient of fynace and of our soverane lordis prent'.¹ As a warning, however, of the weakness of this kind of argument, one may cite the case of the crowns struck under James III as late as 1474, according to the mint accounts, which coins (if any are now known) are indistinguishable from the later ones of his father's reign, ending in 1460.

The previous classification of the heavy groats provided separate types for the Acts of Parliament of 1483/4 and 1485, the latter then being thought to include the Act withdrawing the placks, which was given the same date, 26 May 1485, in Cochran-Patrick's *Records of the Coinage of Scotland*. It is therefore necessary to justify my allocation of only one official type to James III's heavy coinage. It is clear from the provisions about the gold, repeated in the various Acts of this period, that the actual coins produced did not always agree with those specified by Parliament, which had no executive power and could only advise the king on this matter.² Thus, even if Parliament intended a change of type in 1485 or 1486 (which is by no means certain), the change did not necessarily take place. In 1486 the silver refined from the placks was to be used for a 'new penny of fine silvir like the xiiij*d.* grote ordanit of befoir', and this penny has been taken to be a groat, just as the 'penny of silvir' in the Act of 1483/4 was a groat. But if a new type of groat was introduced at this time it could only have been the portrait type, since that continued until 1488/9, and the large number of dies and varieties of this type makes it difficult to believe that it began as late as 1486. I therefore prefer to think that the new penny, if produced, was only a new class of groat within the portrait type (type A), or else that this intended penny was a lower denomination than the groat or half-groat. A fine silver penny, of the value of the English penny, i.e. a quarter of the heavy groat, could reasonably have been described as like the fourteenpenny groat if it had similar features, in the way that the fine pennies corresponding to the preceding light groats were, like them, distinguished by mullets on the reverse. The fact that there are no fine pennies corresponding to the heavy groats does not rule out this interpretation of the wording of the Act; of the previous fine pennies, those corresponding to group III light groats are extremely rare. It might have been thought desirable, on the occasion of withdrawing the placks, to provide for another denomination intermediate

¹ C-P. 48, 49.

² For example, there can be little doubt that the Act of 1475, which is the only one to give the standards of the light-groat coinage, was merely a confirmation of the existing standards. Although it is possible that the currency value of the groats was increased at this time, it is unlikely since there is evidence of an upwards revaluation in 1470 or 1471. The type was unchanged —'of the sammyn prent that the new grote is now' (C-P. 37)—and there is no evidence that the changes in the punches, which distinguish group III light groats from those of group I, took place as a consequence of this Act, although they did occur not long after it. The new gold coinage, of riders with the same lettering

as group III groats, was introduced before 27 July 1476, being mentioned in the mint account of that date (C-P. 45), but Scottish riders were clearly unknown (and not envisaged) at the time of the 1475 Act, since this referred, *without qualification*, to riders which by their currency value must have been those of the Burgundian Netherlands. In fact, inclusion in an Act of Parliament of details about coinage standards does not necessarily imply a change at that time, while changes in the gold, silver, or billon coinage could occur without any Parliamentary advice or ordinance, even when the Parliamentary record appears to be complete.

between half-groats and billon pennies, which would be received by the public with full confidence, unlike the placks. There is no obvious reason for a change of type in the groats on this occasion, whereas there were good reasons for the two changes at the beginning of James IV's reign, as ordered in January 1488/9 and February 1489/90. It was inappropriate to retain the portrait of James III on his son's coins, particularly as he had been killed in a rebellion led by the current ruling faction; and the second change can be attributed to the change of master moneyer.

THE ABERDEEN MINT AND THE PROBLEM OF THE ROUGH ISSUE OF HEAVY GROATS

The rough issue of heavy groats, type R, was particularly hard to place in sequence, when the only evidence came from comparison with other coins. Burns originally thought (in 1876) that these were copied from type B—'The piece called [by Lindsay] the 5th coinage groat of James III., seems to be a wretched travestie of this coin [B. fig. 651], executed by some ambitious blacksmith of the period while labouring under temporary insanity'.¹ It is true that the rough issue is typologically closer to type B than to type A or type C, but this does not necessarily represent more than the use of the traditional groat obverse type, with the crown and pellet reverse, from which the three-quarter-face portrait of type A and the crown, lis and pellet reverse of type C were deviations. The saltire stops of type R have been considered to be a link with the billon pennies of James IV's first issue, type 2, but saltires were also normal on billon pennies of James III and on his earlier groats, including the thistlehead-and-mullet ones, of which the late varieties must be dated only just before the heavy-groat coinage. The use of a clothed bust for type R is perhaps more significant than the form of stop; it would be more natural to adopt this during or immediately after the issue of type A groats, or the other portrait type (thistlehead-and-mullet), than after a return to the normal unclothed bust, as on type B.

The lettering of type R includes some distinctive letters, such as R, P, and L, which have no close parallel, while no letter punch can be positively identified as being used elsewhere in the coinage. The cross fleury initial-mark is also from a punch peculiar to this issue, whereas the other three types of heavy groat used the same cross fleury punch as the group IV groats, the last issue of the preceding light coinage. These group IV groats show particularly careful die-sinking, while the dies of the rough issue are outstandingly badly made; the extent of double-punching as well as the irregular size of the fount of letters and the crudity of the portrayal of the king make it inconceivable that the same hand could have been responsible for these dies and for those of group IV. It would be almost as difficult to accept the type R dies as being the production of a different die-sinker who continued to be employed at the mint in that capacity, although it is true that a somewhat lower standard of workmanship than that of the group IV groats is apparent for the baser coins and some of the later type A groats. Whatever date is assumed for type R it is difficult to account for the unskilled work without postulating unusual circumstances; and preferably something more than difficulties at the mint itself, such as the death of the regular die-sinker, since in such a case one

¹ B. Cat., p. 25.

might expect some reuse of old punches, even if old dies could not be used because of the introduction of the heavy standard.

The only event in the heavy-groat period of obviously sufficient consequence to account for the abnormality of type R was the rebellion which broke out in the last months of James III's reign. Its progress in fact provides both an attractive, if speculative, explanation for the striking of this issue, and a rather surer explanation for the use of Aberdeen as a mint for type A. The causes of the rebellion need not concern us. Danger was already threatening in January 1487/8, when the king charged a committee of Parliament to take proceedings against the Humes and their confederates. On 2 February the disaffected nobles obtained possession of the person of the fourteen-year-old heir to the throne, and they raised forces in his name, although it is uncertain whether the prince was more than a tool in their hands at this stage. About the end of March the king left Edinburgh to raise an army beyond the Forth, since the northern magnates remained loyal to him. His presence in Aberdeen, with some of the great officers of state, is proved by charters dated 6 April¹ and 16 April,² and he may have remained there about a month. There is evidence that negotiations with the rebels took place there,³ before the king moved south with an army and confronted them near Blackness, where a pact was made, under which he had to give hostages to his opponents. By 16 May James had returned to Edinburgh,⁴ and was taking further steps to strengthen his forces. At the beginning of June he moved to the Stirling area, probably with the hope of seizing his son, who was there with part of the rebel forces, as well as for the purpose of making contact with reinforcements from the north. The decisive battle, later called Sauchieburn, took place near Stirling on 11 June, the king being killed.⁵

There is no other record of James III visiting Aberdeen during the period of the heavy-groat coinage, and it can hardly be a coincidence that the only Aberdeen coins of his reign can be dated numismatically to about 1487–8. Aberdeen had been a mint in several reigns, but it was a long time since any provincial mint had been in operation more than sporadically, and the volume of coinage at this time did not demand a second mint. Under James II there had been a small output of crown groats at Aberdeen which, because of die-linking, were probably all struck within a short period; the king is known to have stayed in Aberdeen in 1457 and 1459, and his presence could account for the striking of coins there at this period alone in his reign. One of the obverse dies was used also at Edinburgh, and all the punches were the same. Similar links, or stronger, are found between Edinburgh and the other three provincial mints of the crown groat coinage; and likewise for the two, Berwick and Aberdeen, of James III's reign. The general picture indicates that the use of any mint other than Edinburgh at about this period was for the convenience of the king or the royal administration, although no explanation in terms of the king's movements has been found for the Berwick coins. If Aberdeen had been active in 1486, when the placks were withdrawn, or if its use had

¹ Scottish Record Office, Airlie Charters, Section 12, no. 9.

² *Registrum episcopatus Moraviensis* (Bannatyne Club, 1837).

³ In the reference to 'the wykingis maid at Abirdene' in the indictment of Ross of Montgrenane (*APS* ii. 205). The terms sometimes known as the Pacification of Blackness may have been drawn up

while the king was in Aberdeen.

⁴ Dumbarton Burgh Records, no. 6.

⁵ Dr. Norman Macdougall, whose Glasgow Ph.D. thesis was on James III, has most kindly helped me with the history of this rebellion, both with facts and interpretation. He has produced evidence to show that much of what the sixteenth-century chroniclers wrote about this reign can be ignored.

been planned by then, it might have been expected that there would have been an exchange there for the public convenience, but in fact the Act states only that Tod and Levingstoun, the Edinburgh moneyers, were to receive the placks as bullion.

Two obverse dies were used at Aberdeen: one of S. VI_e, i.e. with annulet on the inner circle in front of the face (Pl. V, 6); and the other with mullet initial-mark (the only die of S. VI_d), which is known also for Edinburgh (B. fig. 637). Of the four Aberdeen reverse dies, one is known with both obverses (B. figs. 645, 646); and with the VI_e obverse it is not particularly rare. The lettering and the reverse crowns, which display some changes within group VI, give no reason to doubt that all the Aberdeen dies were made within a short space of time. The die-links and other evidence for the sequence of classes of group VI (type A of this article) are set out in Appendix B; apart from VI_d, apparently only VI_f came later than VI_e, and, since group VI continued until January 1488/9, the dating of VI_e by the Aberdeen coins as being in course of issue around April 1488 fits satisfactorily with the numismatic evidence. The Aberdeen dies appear to be the work of an Edinburgh die-sinker,¹ and it is possible that they were prepared beforehand—the move was presumably planned some time in advance—but I am inclined to prefer the theory that the punches were taken to Aberdeen. Most of the bulkier equipment, such as furnaces, would be available in Aberdeen, and the king's supporters may have contributed household plate as bullion. The question arises whether the senior mint officials could have gone to Aberdeen at this time; this cannot be answered conclusively. There was no warden at this date.² Of the two master moneyers, Thomas Tod appears to have been a supporter of James III to the end; his presence in Edinburgh on 11 April 1488 is attested,³ but he may have gone north later. Less is known about Alexander Levingstoun. His continuation in office in October 1488 does not preclude his having served James III until the final battle, since only those officials who were 'in feild at Sterviling' on his side were deprived of office by the victors, in the Parliament of that date. As Aberdeen was a secure base, minting there may well have continued after the king marched south.

James III presumably needed silver money for his army at this time, although he had a considerable treasure in gold coin in the coffers found after his death. The royal treasury and jewel house were in Edinburgh castle, which remained under the king's control throughout the rebellion, so that the rebels had to rely on their own financial resources, except in so far as they requisitioned what they needed. It is natural to wonder whether a coinage was struck under their authority, and whether this could be the explanation of the type R groats. Their marked difference in style from the other types of heavy groat (and from the preceding and subsequent light groats) would be quite natural if they were the hurried production of one who was not a practised die-sinker, and without access to the punches of the regular coinage. There does not seem to be any evidence about the location of the Edinburgh mint at this time; but even if the rebels had control of the mint buildings, the dies would presumably be stored in safe keeping in the castle,⁴ if regular striking at the Edinburgh mint was suspended, and so

¹ There is no difference in style from the majority of the Edinburgh dies, and the reverse legend is of form (ii). On one die, the D of *de* in *Villa de Abrde* is punched over an E, an error which an Edinburgh die-sinker might be particularly prone to make.

² C-P. 42.

³ *Extracts from the Records of the Burgh of Edinburgh*, i, Scottish Burgh Record Society, p. 54.

⁴ There is evidence of dies being stored in the castle later, when the mint was at Holyrood, in 1501/2 (CTS ii. 134) and 1518/19 (C-P. 62).

would not have been available to the rebels. In any case, there would be several goldsmiths in the town with the requisite equipment for an emergency mint, if necessary, and with the knowledge to act as master, if Levingstoun did not take the rebels' side. Obvious candidates are Gilbert Fish and William Goldsmith, because of their known connection with the coinage previously. In 1493 it was commanded that all the king's gold and silver coin should be accepted, 'nochtwithstanding the diversitie of prentis of the straikis of sindry cunyeouris / alsweill the straik of Gilbert Fische / quhilk the commoun pepill callis Berwyk grotis / as of umquhile Levingstoun and Johne Curroure'.¹ Gilbert Fish, the moneyer, can presumably be identified with the goldsmith of that name, a burghess of Edinburgh, who is found in the records at various dates from 1474 to 1497.² The most relevant record shows that he was granted a pension by James IV on 24 August 1488: 'Rex dedit literam Gilberto Fisch, aurifabro, ad vitam, pro ejus fideli servitio, — de 20 lib . . .'.³ At this time, two and a half months after Sauchieburn, the victors were occupied in restarting the normal processes of administration and rewarding themselves and their supporters; and it seems far more likely that the services of Gilbert Fish which prompted this award were to James IV's party, within the last few months, than to James III. The king also gave money to 'Wille Goldsmith callit Halpenny man', on 13 September 1488,⁴ but this was a much smaller sum—three unicorns—which does not demand a special explanation. The nickname presumably arose from a connection with a coinage of halfpennies, perhaps part of the notorious black money which was demonetized by the lords of Scotland at Lauder in 1482, in the course of a previous rising. Finally, another obvious candidate is John Curroure, who was probably appointed as moneyer in 1490.

It is hardly necessary to remind readers of this journal of two long periods of civil war in English history in which there were coinages of both contending parties, under Stephen and Charles I. Two Scottish cases, in Mary's reign, of an irregular coinage (actual or only intended) will be less familiar. For some months in 1544 bawbees were struck at Stirling for Mary of Guise, the queen-mother, when there was an attempt to make her the governor in place of the Earl of Arran.⁵ In October 1559 the roles were reversed, Mary of Guise then being regent, while Arran (Duke of Châtelherault since 1549), who had resigned his authority in 1554, was the nominal head of the reforming Lords of the Congregation, in opposition to her. Protestant forces occupied the town of Edinburgh for about three weeks, but had to withdraw before the completion of dies for a new coinage which had been ordered. The dies for the Stirling bawbees were apparently the work of the regular die-sinker, but the 1559 case provides a somewhat closer parallel to what I have postulated for 1488, in that the dies were prepared by an unaccustomed hand; an Edinburgh goldsmith, James Coky, gave evidence that he had made a signet and begun the coinage dies, for fear of his life and although 'il nestoit usite en telles choses'.⁶

¹ C-P. 49.

² He was dead by 1504, his son and heir being named Thomas (*Protocol Book of James Young*, Scottish Record Society, no. 1486). Gilbert and Fish are both uncommon names in the records of this period.

³ RMS ii, no. 1772.

⁴ CTS i. 94. A William Goldsmith was associated with the 1466 coinage of copper farthings (C-P. 44), and there are also records showing him active in 1460 (*Exch. Rolls*, vii. 292) and 1497 (*The Register of the*

Privy Seal of Scotland, i, no. 159), but this long span suggests that not all the records necessarily refer to the same man—father and son of the same name and craft may have been involved.

⁵ J. K. R. Murray, 'The Stirling Bawbees of Mary, Queen of Scots', *SNC* 1966, p. 306, and 1968, p. 265.

⁶ 'Report by de la Brosse and d'Oysel on Conditions in Scotland 1559–1560', *Miscellany of the Scottish History Society*, ix (Scot. Hist. Soc., 3rd Ser., vol. 1, 1958), pp. 123, 124.

If type R was an irregular coinage produced by the rebels in 1488, then it would originally have been in James III's name, since the prince was not set up as king, being referred to as Prince of Scotland by his party late in May. The youthful appearance of the head on these groats is perhaps more marked than on most other coins of this period with the conventional facing bust, but I attribute this to the ineptitude of the die-sinker rather than to an attempt to portray James IV, before or after his accession. There would, however, be no reason, except concern for the artistic quality of the product, to prevent the irregular dies being continued in use after James IV's accession on 11 June, or their being combined with type A dies then. Edinburgh castle was already in the hands of the new rulers by 17 June, when an inventory was made of the crown jewels and other treasure there,¹ and doubtless any dies and other mint equipment would also be surrendered. Thus the hypothesis that type R was initially an irregular issue is tenable in spite of the existence of the A/R mule.

Both dies of the mule are otherwise unrecorded, but there is no reason to doubt that the A obverse die was made early in the period of type A. These early obverse dies, with star stops, appear to have been under-used compared with those of the three main classes (i.e. those with annulet on the inner circle), and I am willing to believe that a serviceable obverse die of this class might have been available at the beginning of James IV's reign, although clearly there would be a greater chance of using a later obverse die than this, if choosing at random from a stock of old ones, simply because more dies of the later classes had been produced. The reverse die, incidentally, is the only one of type R with annulets between the pellets.

It should be pointed out that a reasonable chronology can be made out on the assumption that type R was the first of the heavy groats. The correspondence between class X unicorns and those groats of type A which have five-pointed stars as stops does not necessarily imply that the first dies for both were made at the same time, nor that these portrait groats were already being issued at the time of the first record of unicorns. It might be adequately explained by these dies being the product of the same workshop at an interval of a year or more. In fact, even if the types for unicorns and type A groats were decided at the same time, a much greater delay in producing the groat dies would not be surprising, because of the portrait: it might be necessary first to bring a foreign artist to Scotland, to paint or copy a portrait from which the engraver would work. Type R might, in that case, have been a stopgap measure, before the portrait dies were ready, but this hypothesis does nothing to explain the poor quality of die-sinking. I have also considered whether the issue of *any* heavy groats might have been delayed until 1486, since this would be consistent with the wording of the Act of that date, 'like the *xiiij*d grote *ordanit* of befoir', but I now think that this is unlikely, because of the extent of the portrait issue.

To sum up, it will generally be accepted that the A/R mule confirms that type R was not the last type of heavy groat. This mule makes it a serious possibility that this type was the first of the new coinage. In my opinion, however, the theory that it was an irregular issue in 1488 remains the most likely one, since it explains the complete break with any preceding coinages, in punches and workmanship.

¹ J. Lindsay, *A View of the Coinage of Scotland*, Appendix 16, p. 256; *Exch. Rolls*, i. 79.

THOMAS TOD, MASTER MONEYER

Before leaving the subject of the effect of the civil war on the coinage, it is opportune to give some details of the career of Thomas Tod, later Sir Thomas Tod, knight, of Sheriffhall. His first documented appearance as mint master, with Levingstoun, was in March 1473/4.¹ He was a merchant and was more than once provost of Edinburgh. He obtained the estate of Sheriffhall about 1484. Three entries in the Exchequer Rolls show that he acted as Comptroller for a short time, about May 1488.² He is also known to have financed the purchase of £1,100 worth of gunpowder for James III,³ but this could have been earlier than the 1488 rebellion. His knighthood, for which the first record appears to be March 1490/1,⁴ may have been a reward from James III in 1488, since there is no evidence of service to James IV to warrant this favour: records of legal cases in February 1489/90,⁵ which omit the title, might be explained by copying from an indictment drawn up earlier, and even the later records are not entirely consistent. After the battle of Sauchieburn, there is no sign of his being connected with the mint until February 1496/7, when the Treasurer received from him 'the cunye silver of the pennyis'.⁶ He may have been appointed for the second time soon after June 1496, when an Act of Parliament laid down that 'ane famous and wise man / that is expert / and understandis the maner and fassoun of cunye' should be made master.⁷ Treasonable action of his in April 1491, which may not have been known to the Scottish authorities, provides evidence that he was opposed to the rulers at that time: in association with John Ramsay, the forfeited Lord Bothwell, he obtained a loan from Henry VII on condition of delivering James IV to him.⁸ John Ramsay, an unpopular favourite of James III, was a pensioner of Henry VII for several years and his informant about Scottish affairs, but even he was rehabilitated in 1497, while Ross of Montgrenane, the only other who was sentenced by Parliament in 1488 to forfeit his life and lands, had previously been pardoned. Sir Thomas Tod's reappearance as a royal servant is thus not surprising. He was concerned also in the coinage of unicorns from links of the king's great chain, in 1497.⁹ It seems possible that he had possession of punches for the unicorns in 1488 (particularly since there was no warden at the time), and that he retained them after Sauchieburn, so that the use of the old head punch for class Z unicorns could be connected with his return to the mint. In fact, it is not only this reuse for which an explanation is desirable, but also the replacement of so many punches on the introduction of class Y, seeing that only four class X obverse dies are known and the punches should still have been serviceable. There are documented cases, in later centuries, of difficulty in recovering mint property from former officials or their representatives.¹⁰

THE COUNTER ARGUMENTS

The links between the gold, silver, and billon coinages of this period can conveniently be considered at the same time as the arguments which influenced numismatists in adopting the previous arrangements.

¹ C-P. 45.

² *Exch. Rolls*, x. 57-8.

³ *Acta Dom. Conc.* i. 131.

⁴ *Ibid.* 191.

⁵ *Ibid.* 131, 132.

⁶ C-P. 51.

⁷ C-P. 50.

⁸ *Calendar of Documents relating to Scotland*, iv, no. 1571.

⁹ C-P. 51.

¹⁰ In 1549 the authority of the Regent was invoked to recover the coinage punches, more than a year after the death of the die-sinker, Patrick Lindsay (*Acts of the Lords of Council in Public Affairs, 1501-1554*, p. 595; *The Register of the Privy Seal of Scotland*, iii, no. 2704).

In 1876 Burns ascribed the groats with crown-and-lis reverse type (my type C) to James IV, although he did not give his reasons.¹ In *The Coinage of Scotland* (1887) he gave two reasons for the arrangement which he then adopted, with these as the first type. One was 'the improbability of the arched crown having appeared on Scottish before its employment on English money',² implying that the portrait groats (type A) were not issued before 1485; it would thus appear necessary to allow some type of heavy groat to precede type A, and only type C was considered to be available for this. It is now accepted that the closed crown on the English coins was not introduced before the late 1480's, so that one can scarcely, as Burns tried to, reconcile the attribution of type A groats to James III with the closed crown being copied from Henry VII's coins. Since this attribution is clearly right, the closed crown does not cast doubt on type A being the first of the heavy groats, nor on this issue having begun in 1484. Burns's other stated reason for giving priority to the crown-and-lis groats (type C) was that they are the only ones of this weight standard which correspond with any of the unicorns, although he does point out, a few pages later, the correspondence between the class X unicorns and the earliest obverse dies of type A groats.³ The crown-and-lis groats 'have two stars of six points between the words; according in this respect and in the style of the lettering with the unicorns here placed the first in order under James III., as being less closely related than the other varieties of the unicorn series with the James IV. silver issues'.⁴ The reason for so placing the class Y (and Z) unicorns and hence the type C groats is weak, although the connection between them is quite strong: my sequence, like Burns's, takes account of this, in making C and Y concurrent. I should point out, however, that there are some noticeable differences in the lettering. One striking feature of most of the type C groats is the concave-sided letter I, in two sizes, which is also used as the upright of the L (Pl. V, 16, *rev.*). On these type C groats, only the earliest obverse die (Pl. V, 16) and one reverse die (Richardson 35) show what may be the same letter I as on class Y unicorns, and then in a broken state. The style of the letter A is also different on the later type C groats. The fact that the Y-C links are stronger for the earlier type C groats is not surprising, since the Y/X unicorn mules suggest an earlier date for the beginning of class Y than February 1489/90, the proposed date for the type C groats; but the class Y unicorns do not show any links with the very rare type B groats. The lack of any unicorns with the annulet stops of the majority of type A groats and all the B ones, or with the characteristic F-like letter R of these, does not necessarily imply that no new dies for the gold were made during the period of these groat dies, since the punches used for the gold and silver may have been kept separate then.

In correspondence,⁵ Mr. Ian Stewart put forward a number of arguments, not all used in his 1954 article, in favour of the arrangement in which my C and Y precede my A and X. At that stage I had not made a detailed study of the unicorns, nor had I any special explanation for the rough issue of groats, and I was proposing the groat sequence R-A-B-C, with class X of the unicorns before class Y. In my present notation, his main points were:

- (i) The identical cross fleury initial-mark links the light groats of group IV with

¹ B. Cat., p. 25.

² B. 129. Cardonnel and others had used the closed crown as an argument for assigning this type to James IV, not III (*Numismata Scotiae* (1787), p. 13).

³ B. 151.

⁴ B. 131.

⁵ Letters dated 31 July and 28 August 1965.

C, A, and B; and star stops (although from a different punch) are confined to C and the earliest A groats.

- (ii) It would be most unusual to find the earliest type of a new coinage as poorly produced as type R.
- (iii) Type experimentation, as in type C, can be expected early in a coinage, rather than late.
- (iv) The unicorn mules Y/X (with four different X reverse dies, whereas only one X/Y mule is known) would be unlikely if X preceded Y. It also seemed that the heavy muling between the X and Y unicorns argued for the juxtaposition of the corresponding groats, C and early A.
- (v) The sequence of stops (annulet, saltire) on the early billon pennies of James IV seemed to support the order of groats as type B followed by type R, and to argue against groats with star stops following those with annulets. This was in fact the only positive point in favour of making the type R groats last in the series.

These are strong general arguments which help to explain why he and earlier writers did not arrive at my arrangement. I was unable then to answer (i) and (ii), and these points prompted me to seek an explanation of the rough issue in the abnormal circumstances of the civil war. As regards (iii), the type experimentation, which includes three very different crowns on only five obverse dies, is perhaps adequately explained by the appointment in 1490 of a new master.

Mr. Stewart himself at the same time countered (iv) to some extent, by pointing out that two of the reverse dies of the Y/X mules (B. fig. 632 and no. 11) were very rusty, while the obverse die was not. (This does not actually prove the order of striking, since there are no X coins known with these particular reverse dies.) The point about the unicorn mules is also answered by the somewhat surprising fact that inverse mules (i.e. coins whose obverse dies are later than their reverses) are the commoner ones in the Scottish coinage of this period. Many examples can be quoted, where there is no doubt about the order. In the case of the type B groat already mentioned, with lis added to the type A reverse die, there is no question of the reuse being an unintentional error. B. fig. 604 is a James III group IV/III mule groat; Glenluce 24 is a James III class A/crown coinage mule billon penny; and among the crown groats of James II no 'normal' mules are known, but there are second-issue/first-issue mules, and many class III/II ones within the second issue.

The lis in the reverse type of C, which I have taken to be the distinguishing sign required by the 1489/90 Act of Parliament, has been commented on by Stewart and Burns. Burns suggested that the crown and lis combined were appropriate for a coinage intermediate in weight between the old crown groats and the lighter and even older fleur-de-lis groats.¹ The crown, as part of the reverse type of all these heavy groats, almost certainly represents a conscious return to the type of the earlier crown groats, since the currency value was the same, even though the new coinage was on a lower weight standard. But there are many other contexts in which a lis is found on Scottish

¹ B. 131.

coins, and in fact the closest parallel is provided by the second-issue billon pennies of James IV, with alternate crowns and lis in the angles of the cross. Stewart, in his 1954 article, drew attention to the crown and lis occurring in the field of one of the earliest type A obverse dies, as suggesting a link with the crown-and-lis reverse type of C, but this is barely stronger than the B-C link provided by the lis on the centre of the reverse cross of one B groat and one B half-groat die.

THE ACCOMPANYING BILLON COINS

The billon coinage of the heavy groat period has been mentioned more than once already in this article. There is nothing to add here about the new placks, struck at the beginning of this period or just before, but it is desirable to give a brief review of the billon pennies. These pennies of James III and early James IV still present considerable problems, although two recent hoards, Glenluce and Rhoneston,¹ which greatly increased the material available for study, have confirmed the general sequence. Rhoneston contained, as probably its latest coins, several class D pennies of James III. These by their ornamentation and the style of portrait manifestly correspond to type A groats, but their issue may have been restricted to a shorter period. Moreover, since these class D pennies are much finer than class C ones, and their type was so very distinctive, it seems likely that their currency value was more than 1*d.*, and quite possible that the coinage of base billon pennies at 1*d.* continued concurrently with class D. There are some varieties classed as C, each known from very few specimens,² which appear to belong after Civ and Cv and which may possibly extend into the period of heavy groats, but this is not the place for a detailed discussion of them. There is also a small class, which I denote by E, in which the bust is apparently clothed, a feature which fits in with their being contemporary with groats of type A or of type R, a dating which is also indicated by muling. This class is distinguished by having points between the three pellets in the reverse quarters and beyond the cross ends, and by its lettering. The letters are unusually large for such small coins, but otherwise the dies seem to be too neat to be the work of the die-sinker of the rough-issue groats. There are mules both ways with the following annulet pennies, ascribed to James IV, examples being Glenluce 96 and B. fig. 598; and there is also a mule, in the Royal Scottish Museum, with what was presumably an earlier variety. One would expect that, after the devaluation of billon pennies took place, which I think was probably before the heavy-groat coinage, there would be some clear sign by which new pennies could be distinguished in circulation from those devalued to a halfpenny. If so, the class E pennies, with their distinctive points on the reverse, may have been struck in accordance with the authorization in the 1485 Act of Parliament. Alternatively, the 1485 pennies might be class D ones, which are far more distinctive. Another possibility is that class D pennies, although not of fine silver, might have been struck instead of the fine penny ordained by Parliament in 1486, if this was *not* a groat.

¹ Stewart, 'The Glenluce Hoard, 1956', *BNJ* xxix (1959), pp. 362-81; Stewart and R. B. K. Stevenson, 'The Rhoneston Hoard, 1961', *BNJ* xxxiv (1965), pp. 109-17; Stewart, 'The Glenluce and Rhoneston Hoards of Fifteenth-century Coins', *PSAS* 1959-60, pp. 238-44.

² e.g. Rhoneston 75, 76, Glenluce 63; Rh. 74, Gl. 109; and perhaps Gl. 103, 104, Lockett XI²⁰. (The reference is to the complete photographic record of Lockett Scottish coins, since the sale catalogues do not illustrate this coin.)

The annulet pennies already mentioned are taken to correspond to the type B heavy groats, their annulet stops providing a clear link, but they may equally well have commenced during the later part of the issue of type A groats. The saltire pennies, the other type for James IV's first issue, are linked with the annulet pennies by the head and crown punches, and there is also a mule known, Glenluce 97. Both these types of James IV penny were well represented in Glenluce, but absent from Rhoneston, so their position in the sequence is satisfactorily established. The correspondence with the heavy groats is not close enough, in my opinion, for the pennies to provide any important evidence about the groat sequence. In describing the Glenluce hoard, Stewart drew attention to an annulet penny, Glenluce 86, as having a crown of nine points, comparable with that on the type R groats, but he called this an embarrassing anomaly,¹ since he then believed that the *saltire* pennies of James IV were contemporary with the type R groats. In his general discussion in that article of the relationship between groats and pennies, he commented that 'specific correspondence should be noted, not assumed'.² On the type R obverse die the effect of a 'crown of nine lis' is the result of double-punching with a five-lis punch; although this may conceivably have been intentional, I consider it unlikely, seeing how many instances of careless die-sinking are found on dies of this type. In the case of the annulet pennies, no other dies show the effect, so that it is even less likely that the double-punching seen on Glenluce 86 was intentional.

ACKNOWLEDGEMENTS

My debt to Mr. Ian Stewart will already be apparent. He gave most careful consideration to my much weaker arguments on this subject some years ago. He has since then encouraged me to write this article, and has helped me considerably with the presentation of my arguments. He has also asked me to say that, having read a draft of this paper and been able to consider the question as a whole, he now believes that the arrangement I have proposed is broadly correct, in particular as regards its two major revisions of sequence, the transfer of the crown-and-lis groats (C) to James IV and the priority of the unicorns with *Exurgat* both sides (X).

Dr. Norman Macdougall gave me great assistance with the history of the 1488 rebellion. Professor Grierson read and provided valuable comment on the draft of Appendix A.

The museum authorities—particularly of the National Museum of Antiquities of Scotland, the British Museum, the Ashmolean Museum, the Hunterian Museum, and the City of Perth Art Gallery and Museum—have given their usual invaluable help in providing access to their coins, casts, and photographs, and permission to illustrate them, and in discussing various points. In addition, I am most grateful for special assistance from the first three of these in regard to specific gravities; and to Mr. R. B. K. Stevenson also for his die-analysis of unicorns of my class X.

The ownership of the illustrated coins is as follows: NMAS 2, 3, 9, 10, 12, 13, 15, 18, 20, 21; British Museum, 1, 6, 7; Hunterian Museum 19; Perth Museum 17; Mr. Ian Stewart 4, 5; Dr. James Davidson 11; Author's collection 8, 14, 16.

¹ Op. cit., p. 376.

² Op. cit., p. 374.

APPENDIX A

SPECIFIC GRAVITIES OF UNICORNS AND OTHER SCOTTISH GOLD COINS

Specific-gravity determination by Archimedes' principle is still a recommended way of investigating the fineness of gold coins, although several more modern methods have been used. In view of the Symposium on the subject held in December 1970,¹ my comments on method are restricted to pointing out some possible sources of error in the results quoted here.

TABLE V

Coins	Approx. wt. in g.	S.g. of specimens	Mean s.g.	Indicated fineness in carats by R:CU ratio in alloy			Standard fineness
				3:1	1:1	1:3	
UNICORNS	3.8						
X		18.5*, 17.9, 18.7†, 17.6†	18.2	22½	22½	22½	
Y/X		17.3*, 17.1, 17.0, 17.2	17.2	20½	21	21	
Y, Q, Z		16.5*, 16.9; 16.3, 16.1, 15.8; 16.4, 16.7, 16.3†, 18.1†	16.6	19½	20	20½	
Later James IV		16.1, 16.5, 15.7, 16.9*, 16.7*; 16.9*, 16.4	16.4	19½	20	20	
James V		17.3, 17.1, 16.9, 16.4, 16.4, 16.3	16.7	20	20½	20½	
HALF-UNICORNS	1.8						
y*, y, p, z*, z		15.2; 17.1†, 16.1, 15.6, 15.2, 16.1; 15.1; 16.4†, 16.5, 16.6, 16.2	16.0	18½	19	19½	
LIONS, Robert III, heavy	3.9	18.5, 19.0, 18.5, 19.3, 19.0, 19.2	18.9	23½	23½	23½	'de bono auro'
" " light	2.3	18.4, 18.5, 18.6, 18.0	18.4	23	23	23	
DEMIES, James I	3.4	18.7, 17.9, 18.8, 18.4, 18.3	18.4	23	23	23	
James II	3.4	18.0, 18.5, 17.8, 18.2	18.1	22½	22½	22	
LIONS (crowns), James II	3.4	17.5, 17.8, 17.2, 17.1, 17.5	17.4	21	21½	21½	
RIDERS, James III	5.1	17.7, 18.0, 17.5	17.7	21½	22	22	
HALF-RIDERS, James III	2.4	17.3, 17.5	17.4	21	21½	21½	
CROWN, HALF-CROWN, James IV	3.4; 1.7	16.2; 16.3	16.2	19	19½	19½	
ABBAY CROWNS, James V, Mary	3.4	17.0, 17.5, 17.5, 17.4, 17.3, 17.5, 17.4, 17.2; 17.4	17.3	21	21½	21½	21½
DUCATS, James V	5.6	18.6, 18.7, 18.6, 18.6	18.6	23	23	23½	23
44s. PIECE, Mary	5.2	17.5, 17.6	17.5	21½	21½	21½	22

The first indication that the fineness of unicorns was of special interest came from the specific-gravity determination for British Museum specimens, done at my request. These are distinguished by * in Table V. The majority of the results quoted were obtained by myself in 1968, in the Heberden Coin Room of the Ashmolean Museum, using specimens from that collection together with a few of my own, and I am most grateful for the facilities afforded me there, and to Dr. Metcalf in particular for his help. The sample of unicorns and half-unicorns was enlarged by Dr. McKerrell in the research laboratory of the National Museum of Antiquities of Scotland, and these are distinguished by †. He used benzene as the fluid, while I, like Mr. K. Howes at the British Museum, used toluene, but neither is now recommended.²

¹ Symposium on the Composition and Analysis of Coins, arranged by the Royal Numismatic Society (Report forthcoming).

² Perfluorol-methyl-decalin is recommended by

M. J. Hughes and W. A. Oddy, 'A Reappraisal of the Specific Gravity Method for the Analysis of Gold Alloys', *Archaeometry*, xii. i (1970), pp. 1-11.

Standard sources of systematic error are the surface tension of the fluid acting on the suspension wire, trapped air, and dirt on the coins, which I was unable to clean beforehand. These errors, together with the limitations in the accuracy of weighing, are more serious for lighter objects. It has been stated that results may be unsatisfactory for objects lighter than 5 g., and I believe that this is the explanation of the low results for half-unicorns, which weigh only about 1.8 g. A similar difference, although less marked, is seen in the results for half-riders compared with riders. A different standard for unicorns and half-unicorns of the same issue appears extremely unlikely. One would like to see the fineness checked by another method, but it is the variation, rather than the absolute fineness, which is the concern of this article.

The indicated fineness is given on p. 75 on the basis of equal parts of silver and copper in the alloy, but the actual practice in the Scottish mint at this time is unknown, and indeed the proportions might well vary with the source of the bullion. Record evidence about this proportion is rare for any country, but equal parts were used in England in 1349,¹ while Frederick II's *augustale* of 1231 had three parts of silver to one of copper.² Table V shows that these two alternative proportions make very little difference to the indicated fineness, which in any case is only quoted to the nearest half-carat, since it would be misleading to suggest that greater accuracy can be claimed. The close agreement for abbey crowns between the indicated fineness and the known standard suggests that there is not much error in the results for unicorns, which are slightly heavier coins and not very different in fineness. In particular it seems clear that the greater variation in the results for unicorns is significant. While the conversion to carats is interesting, it is actually irrelevant to the question of establishing that there was an alteration in the fineness of unicorns. For this purpose, when dealing solely with coins of approximately the same weight, one may treat the calculated specific gravity simply as a statistic, and use a standard significance test, the *t* test.³ This applies to the difference between the mean values of the measured property for two classes separately, and takes into account the observed variation of the values of that property within each class. The probability quoted is that of a difference at least as large as the observed one occurring as the result of chance variation, when the classes are alike as regards that property, which, for the specific-gravity measurements, would mean that the standards of fineness for the two classes were not significantly different. A very small probability means that the hypothesis of homogeneity between the classes in this respect is untenable. The *t* test gives the following results for the first division unicorns.

<i>Classes</i>	<i>Probability, if homogeneous</i>
X, 13 others	0.0006
X, Y/X mules	0.004
Y/X, 9 other non-X	0.05

For X compared with all the others, and compared with the Y/X mules, the *t* test confirms what would probably in any case be accepted without question, that the X unicorns are significantly finer. For Y/X against the rest, it is less conclusive, but in this case one would be justified in halving the quoted probability (i.e. in the phraseology

¹ Ruding, *Annals of the Coinage*, 3rd edn. ii, p. 451. 'Two grains and a half . . . of silver and copper in equal parts, were taken for the alloy of each ounce of the said florins of nobles.'

² Information from Professor Grierson.

³ See, e.g., E. S. Pearson and H. O. Hartley, *Biometrika Tables for Statisticians*, i. The formula is also quoted by D. M. Metcalf and J. M. Merrick, 'Studies in the Composition of Early Medieval Coins' NC 1967, p. 180.

of statistics, in using a single-tail test), since a fineness different from either X or Y but *not* intermediate between X and Y would be highly unlikely *a priori*. The result of the *t* test for the comparison of Y/X with other non-X specimens is strongly affected by the one high specific-gravity result, 18.1, for a Z unicorn; without this, the test would have given the very significant probability of 0.0005.

For coins other than unicorns and half-unicorns I have not attempted to present the specific-gravity results by numismatic classes, nor to test for homogeneity. In the case of James V unicorns, the two finest are countermarked ones, a natural class, since the countermark was apparently applied before issuing these; the *t* test gives probability rather under 0.02 when these are compared with other James V unicorns.

For demies, riders, and the crowns of James II and IV, the fineness has previously been taken to be 22 carats, on the strength of an official document of 1596.¹ It now appears that the demies were rather finer than this and the crowns ('syde coit Lyones') baser. Early unofficial sources are no more reliable. 'Le livre de change et monnoies' of Nicolas Duhamel, of about 1520, gives unicorns and eagle crowns, like demies, as 22½ carats.² The same standard is given for demies, riders, and James IV crowns in a late sixteenth-century manuscript which, however, gives two different standards for unicorns (alone among the Scottish coins mentioned)—'Licornes de Jacques Stuard cinquieme de ce nom . . . sont bonnes a xxij Karas et demy et sy en y a a xxi Karat':³ this in fact prompted my investigation into the fineness of unicorns. Of the printed money-changers' books which I have consulted, a late one is in better agreement with my specific-gravity results, as regards the low standard for unicorns and crowns of James IV, which are both given as 19⅔ carats in *Ordonnancie ende Instructie voor de Wisselaers*, Antwerp (1633).

APPENDIX B

THE SEQUENCE WITHIN THE GROUPS OF GROATS

There is sufficient evidence, from die-links and changes in punches to indicate the sequence of classes within the larger groups of groats.

Type A heavy groats, S. group VI of James III

Stewart's division by obverse features will be used, as follows:

	<i>No. of dies recorded</i>
<i>a</i> and <i>b</i> , star stops	
<i>a</i> No additions in field	2
<i>b</i> Crown, lis and saltire in field	1
<i>c</i> to <i>g</i> , annulet stops	
<i>c</i> No additional features	2
<i>d</i> I.m. mullet	1
<i>e</i> Annulet on inner circle before face	5
<i>f</i> " " " " behind head	4
<i>g</i> " " " " before bust	3

¹ C-P. 267. 'The pryces at the whilk all kynd of pieces of gold and silver sall be brocht in to the cunyiehouse.'

² A. Blanchet, 'Le livre du changeur Duhamel', *Revue numismatique*, 1891, p. 81.

³ British Museum, Cotton MS. Tib. D. II, f. 14. This is not a changer's book but a numismatic work. The italicized phrase was misread 'sycuya' in C-P. ii. Appendix, 312; it may be translated 'there are also some of them' (at 21 carats).

Die-links between the classes present a confused picture, although the extent of die-linking within each of the classes which have an annulet on the inner circle makes it fairly certain that each of the three positions for the annulet represents a compact period of striking. It is possible, however, that the sequence of production of the dies was different from that of use, the annulet being added when the obverse die was brought into use. A break in the shoulder punch, at the king's left shoulder, shows on some, but not all, of the *e* and *f* obverse dies, and also on the one *d* die; and another feature which cuts across the division by position of annulet is the use of *Die* for *Dei*. The suggested sequence of use is *a b c g e d f*, the main evidence being tabulated below. NMAS denotes National Museum of Antiquities of Scotland; BM, British Museum; Wh., Whitburn hoard.¹ The forms of reverse legend are defined on pp. 79–80, except that *iiia* is here included under *i*.

Die-links between obverse classes

<i>Crown</i>	<i>L</i>	<i>Legend</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>g</i>	<i>e</i>	<i>d</i>	<i>f</i>	<i>B</i>	<i>Specimens</i>
2	2	i		x		x	x				B32a, B43, NMAS (Wh.)
2	2	i			x	x					B33b, B46
2	2	i				x	x				NMAS (Wh.), B44
2	2	i				x				x	B fig. 644, B fig. 651
2	2	i (iii a)				x			x		B53a, Mauchline hoard
3	2	i					x	x			B38, B45a*
3	3	ii				x	x	x			BM (Wh. 89), B40, B37
3	3	ii					x	x			B41, BM (Wh. 80)†
3	3	ii						x	x		Rich. 38, B34
3	4	ii Aberdeen					x	x			B55, B54

* Not checked, since B45a is not in the Coats Collection, nor was it figured by Burns.

† A progressive die flaw shows that this coin with *f* obverse was struck later than at least one with *e* obverse.

No. of reverse dies recorded with various combinations of features, by obverse class

<i>Crown</i>	<i>L</i>	<i>Legend</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>g</i>	<i>e</i>	<i>d</i>	<i>f</i>	<i>B</i>
1	1	i	1	1						
2	2	i		1	1	6	3		1	1
3	2	i				4	4		2	
3	3	ii			1	2	3	1	8	
3	4	ii Aberdeen					3	2		
3	4'	ii						1		1
3	4'	iii						1		2

The *a* and *b* obverse dies, which are particularly well made, may have been pattern dies, supplied by the craftsman who engraved the portrait; and likewise the two earliest reverse dies, which have single large annulets as stops, and are different from all other reverses as regards crown, letter *L*, and certain other features.

The die-link between *g* and type B, the first type specific to James IV, would suggest that *g* was the latest class in group VI, but there is strong evidence against this. The other

¹ Cowhill Farm, Whitburn, 1921. G. Macdonald, 'A Hoard of Coins found in Linlithgowshire', *PSAS* lvi (1921–2). The numbers quoted for identification of

B.M. coins are those on their tickets, and do not refer to the hoard account, which does not give a detailed description.

three reverse dies known for B all have the L4 punch, in a damaged form L4', while *g* is known only with earlier L punches; and the punches for the reverse crown tell the same story. These other three B reverse dies are clearly of late manufacture, since they all show a split in the cross-ends, apparently the result of deterioration of the punch, which has not been observed on any group VI groats.

Type C heavy groats, second issue of James IV

Stewart's divisions are:

- a* Crown of 5 lis
- b* Crown of 3 lis, short spikes between
- c* Crown of 3 lis, tall spikes between

The suggested sequence is *a c b*. It is natural to take *a* as the earliest, because the punch for the king's crown is the same as on the preceding B groats. The only die-link known is between *c* and *b* (B. fig. 626A and B. fig. 624), and *c* and *b* are also closer together in lettering than they are to *a*. The form of reverse legend is one argument in favour of *c* preceding *b*: reverses of *a* both have form (iii*d*), *c* has (iii*d*) or (iv), and *b* form (iv) only. Probably the latest reverse die is one used with *b* (B. fig. 625); this has a curious patched crown, but it is not quite certain that this is the same crown punch as on the other C reverse dies.

Light groats of James IV, S. group III

Stewart's divisions, supplemented by III*f*, and in suggested order of issue, are:

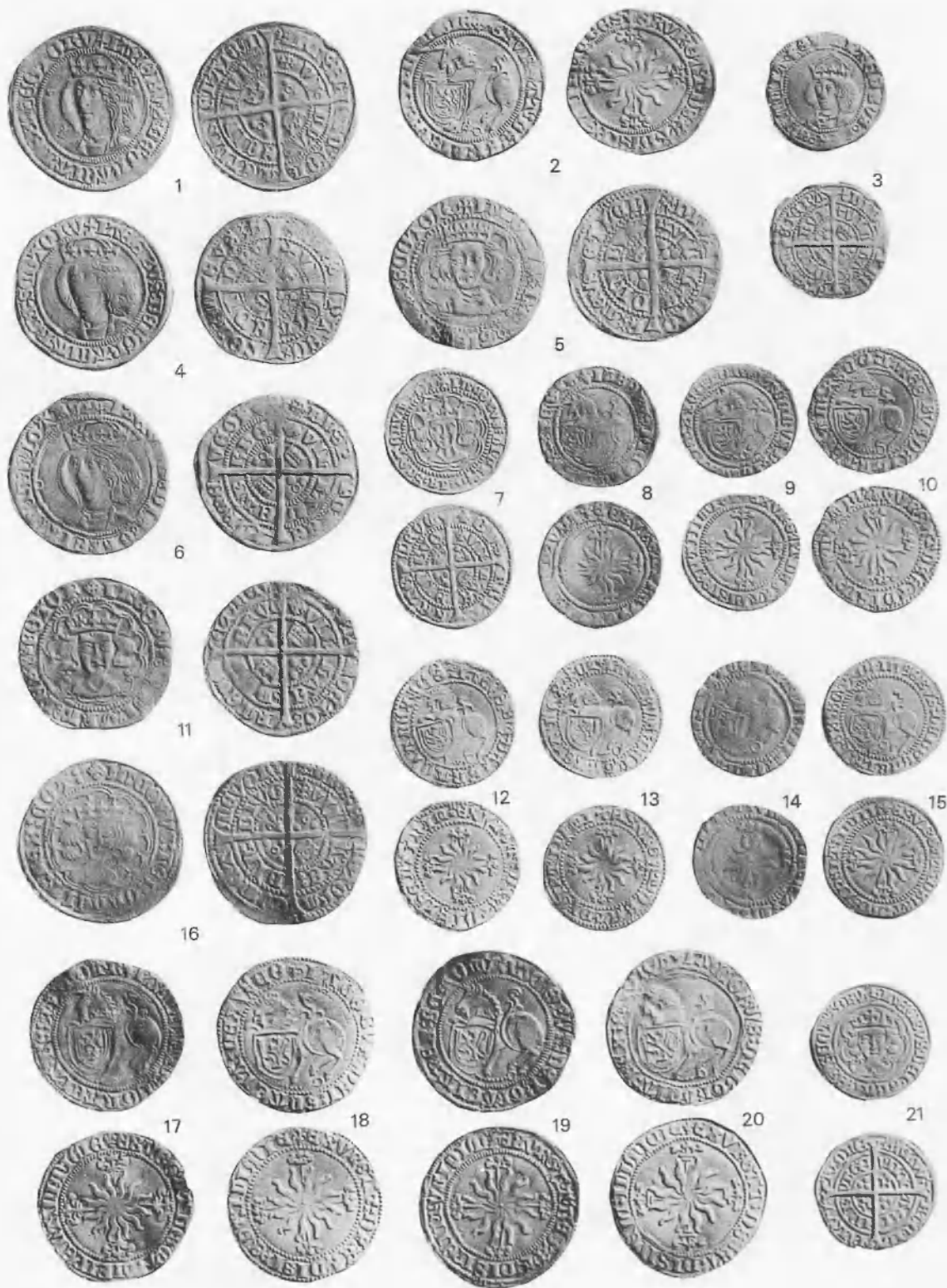
	<i>Regnal numeral</i>	<i>Stops</i>	<i>No. of obv. dies</i>
<i>b</i>	None	V-shaped	3
<i>d</i>	QT	Stars	1
<i>c</i>	QRA	„	4
<i>e</i>	IIII	„	2
<i>a</i>	Old Arabic	„	7
<i>f</i>	None	„	3

Two *c/b* mules, B. fig. 664 and B. 6*a*, were known to Burns, but the two following die-links have more recently come to light:

- e* and *a*. B. 15; NMAS acquired 1953 (*a/e* mule)
- a* and *f*. Mr. Stewart's collection; author's collection.

One *a* coin, B. fig. 657A, has a reverse die, not otherwise known, with exactly the lettering of *d*, *c* and *e*, but without the spelling EDENBEOVRGE which distinguishes *e* reverses. The form of the Arabic numeral connects *a* with the second division unicorns, as does the lettering, in particular a broken A, which occurs also on III*f* groats. The changes between stars of 5 and 6 points as stops do not appear to be of any assistance in determining the order, but changes in the hair and shoulders have been taken into account.

Perhaps the most doubtful point is the placement of *d* before *c*, instead of after it, in spite of the *c/b* mules. There are three reasons for this: the broken-star stops on *d* reverses (see p. 73); the stars by the neck occurring only on one *c* obverse die and both *e* ones; and the spelling PPLVVM in the reverse legend, which is confined to *c* and *e*.



MURRAY : EARLY UNICORNS AND HEAVY GROATS

