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CURRENCY UNDER THE VIKINGS. PART 5: THE SCANDINAVIAN ACHIEVEMENT AND LEGACY

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THE previous lectures in this series have considered the currency in particular regions of the British Isles during periods of Scandinavian control. In this final address I would like to take stock more generally of the Scandinavian contribution to the monetary history of the British Isles. I will review the distinctive monetary achievements of the Scandinavian settlers in these islands, considering the extent to which these influenced their neighbouring communities, and their successors in later generations. In essence, the question posed is 'What was the Scandinavian legacy?'.¹

It has been unkindly said of the Suevi of Spain that the course of history would not have changed one *iota* if they had never existed.² Might the same comment be made of the Scandinavians in the British Isles? Well, clearly not, as even today there are discernible features of language, street names, place-names and culture showing Scandinavian traits in regions such as Yorkshire. And they have left a distinct trail in the genetic make up of many people in Britain and Ireland. But was there an enduring influence on monetary circulation and the monetary system? To take a possible example, there is a very clear difference in the number and distribution of mints in England before and after the period of Scandinavian control of the Danelaw; but to what extent did the Vikings contribute to this change? In other parts of the British Isles, how influential were the Scandinavians in introducing the use of money? The term 'money' here has a wider meaning than mere coinage. In Scandinavia coins were only one element in a system of exchange that included precious-metal ornaments, ingots and hacksilver, while other forms of 'commodity money' that are attested in the later Middle Ages, such as cloth, dried fish and butter, may well have been used in the Viking Age too. An understanding of the difference between the 'money-weight economy' or 'bullion economy' of the Northern Lands and the 'coin economy' of the Anglo-Saxon and Carolingian kingdoms is fundamental to an appreciation of the Scandinavian contribution to the monetary history of the British Isles.³

Before considering monetary developments in the Scandinavian settlements, it is necessary to review the monetary conditions in Scandinavia and the British Isles before their mutual interaction in the ninth century. Of these two, I will spend a little more time describing the situation in Scandinavia, since our understanding of this has been developing recently and may be less familiar to a British audience.

The background: Scandinavia

In the late eighth century the first Scandinavian raiders whose exploits came to the attention of chroniclers in the British Isles would have had little experience of coins, silver ornaments or silver bullion when they set out on their travels. There seems to have been very little precious metal of any description in Scandinavia during the eighth century. The gold *solidi*,

¹ This is a revised and extended version of the paper read at the Anniversary Meeting in November 2008. I wish to thank Dr Kristin Bornholdt Collins and Dr Elina Screen for their comments on a draft of this paper. I am also grateful to the Manx Museum for permission to illustrate coins in their collection (Fig. 6, 2-4).

² Cited in Grierson and Blackburn 1986, 78.

³ Steuer 1987; Graham-Campbell 2007; Williams 2007, 178-85; Kilger 2008b.

bracteates and bullion that had been plentiful in the fifth and sixth centuries appear to have given way, at best, to thin gold-foil figures (*guldgubbar*) and the occasional gilding of copper-alloy ornaments.⁴ The only coins of the immediate pre-Viking period discovered in Scandinavia are a handful of mid-seventh-century Merovingian gold tremisses found mainly in western Denmark and along the North Sea coast,⁵ and eighth-century silver sceattas that are likewise very rare in Southern Scandinavia, except at Ribe where a thriving coinage was produced, evidently for use within the *wic* itself and for trade around the North Sea.⁶

The ninth century saw an enormous change in the use of silver in Scandinavia. Around 800, silver dirhams which had travelled across Russia began to arrive in Eastern Scandinavia (notably Gotland, Åland and the Mälaren region of Sweden), accompanied then or soon afterwards by ornamental silver, notably spirally-decorated rings that seem initially to have originated in Russia around Perm and Vyatka, to the west of the Urals; later they would be imitated in Scandinavia.⁷ This build up of silver may have started slowly, but in the mid-ninth century it really gathered pace. By the third quarter of the ninth century silver was available in significant quantity in both Eastern and Western Scandinavia. The recent excavations and surveys at Kaupang – the only early Viking-Age town recognised in Norway – have shown how the use of silver developed there. Two phases of coin use have been distinguished at Kaupang: one c.800–c.850 in which Western silver pennies (Carolingian, Anglo-Saxon and Danish) were used, and one c.850–c.970 based on Islamic dirhams (Fig. 1).⁸ That the Western pennies were used in an emerging bullion or money-weight silver economy is shown by the early (pre-850) contexts in which they are found stratified with pieces of hacksilver (i.e. sections deliberately cut from ornaments or ingots) and small weights.⁹ The use of hacksilver was previously thought of as essentially a tenth-century phenomenon, based on hoard evidence,¹⁰

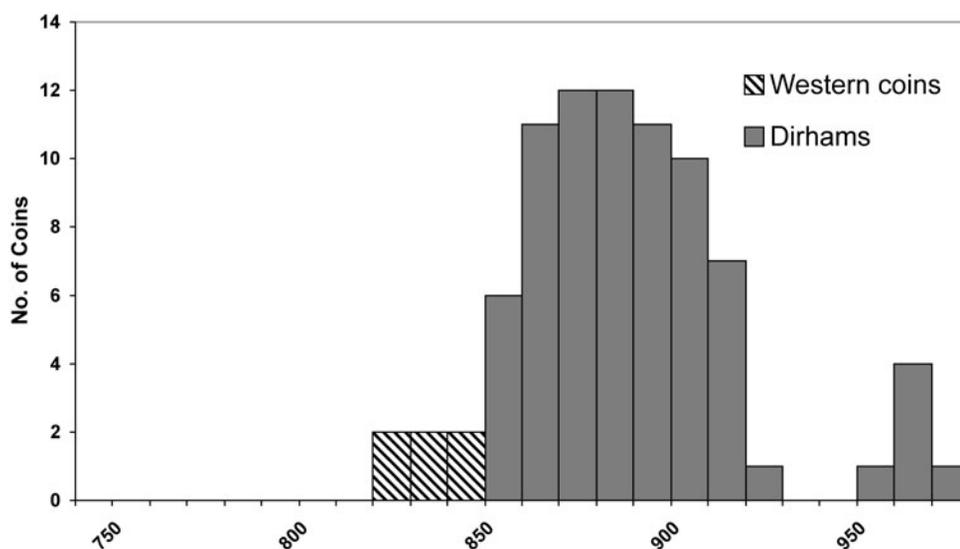


Fig. 1. A model projecting rate of coin loss (*not* date of production) of coins at Kaupang (Source: Blackburn 2008b, p. 71, fig. 3.15b).

⁴ Skre 2008b, 344–7; Watt 2004.

⁵ Eight tremisses have been found, one from Kaupang in Norway and seven from western parts of Viking-Age Denmark on the islands of Sylt and Föhr, at Dankirke, Gadegård, Jelling and Fusing, near Hedeby; Metcalf 1996, 400–1; Moesgaard and Pol 2003; Dobat 2005; Rispling, Blackburn and Jonsson 2007, 76; Blackburn 2008b, 59–60.

⁶ Metcalf 1996, 403–9; Feveile 2006a; Feveile 2006b; Feveile 2008.

⁷ Kilger 2008a; Hårdh 2007.

⁸ Blackburn 2008b.

⁹ Hårdh 2008, 114; Pedersen 2008, 130; Blackburn 2008b, 31.

¹⁰ Hårdh 1996, 84–130.

but prolific single-finds from Kaupang and other sites, such as Uppåkra, now show that at some centres it was already used for exchange by the mid-ninth century.¹¹

Many of the silver ornaments and ingots found in Scandinavia were not imported but made locally by melting down imported bullion and Islamic dirhams. The wastage rate of dirhams from the currency was remarkably high,¹² and to judge from the pattern of surviving hoards it appeared as though the volume of coinage actually circulating in Scandinavia during the second half of the ninth century was relatively small in comparison with that of the tenth, when the hoards are more plentiful and generally larger.¹³ However, new site finds and isolated single-finds made by metal-detector users appear to tell another story. The evidence of isolated single-finds suggests that in Southern Scandinavia (Denmark and southern Sweden) the rate of loss of dirham fragments was as great or even greater during the later ninth century as during the first half of the tenth (Fig. 2), and so the volume of coinage in active use may have been broadly similar.¹⁴ These are tentative conclusions based on a small but rapidly growing sample of data.¹⁵ But if there is a conflict between the hoard and the single-find evidence why should we not rely on the larger body of securely-dated hoards? The reason is that fluctuation in the number of recorded hoards from different periods is more likely to reflect circumstances influencing the deposition of hoards or their non-recovery, than the availability of money (coins or bullion) generally. This argument is well demonstrated by the case of England in the eighth and ninth centuries, when the patterns of single-finds and of hoards are dramatically different, with single-finds being plentiful during the eighth and earlier ninth centuries, and hoards being much more numerous during the later ninth century.¹⁶

If in Scandinavia as a rule hoards of the ninth century are scarcer and generally smaller than those of the tenth century, the discovery at Spillings on Gotland in 1999 represents a

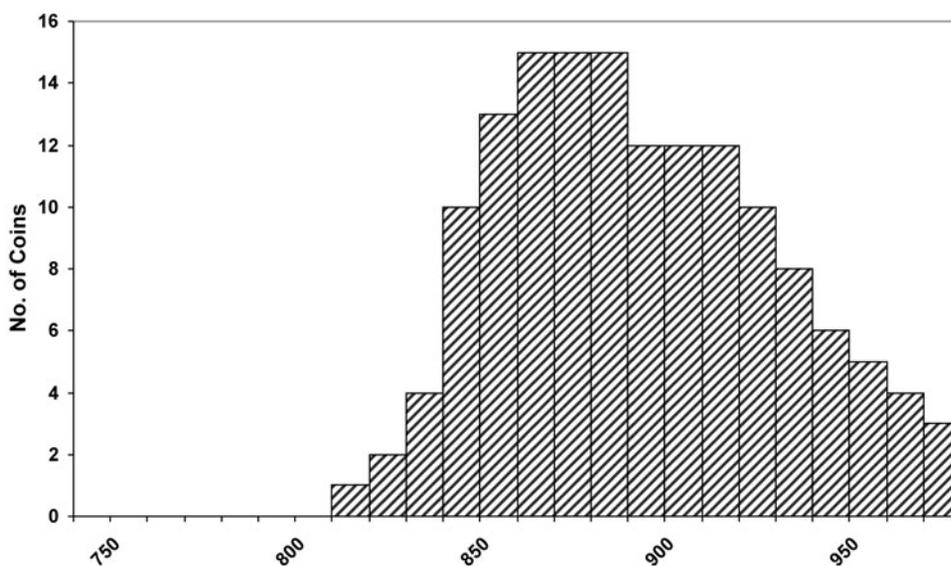


Fig. 2. A model projecting rate of loss of dirhams in Southern Scandinavia (based on 147 single-finds) (Source: Blackburn 2008b, p. 42, fig. 3.8b revised).

¹¹ Hårdh 2008, 114–18.

¹² For an estimate of wastage rates see Blackburn 2008b, 41–2.

¹³ Kilger 2008a.

¹⁴ This is largely based on Danish single-finds. Comparable data for Gotland or the Mälaren region is not available because of the stricter laws in Sweden against metal-detecting there.

¹⁵ Blackburn 2008b, 41–2, fig. 3.8b. The histogram illustrated here as Fig. 2 is a revised version of this figure, incorporating additional data kindly supplied by Gert Rispling, and will be published in the proceedings of a conference, 'Silver Economies, Monetisation and Society in Scandinavia, 800–1100', held in Aarhus in 2008.

¹⁶ Blackburn 2003, 22–4.

notable exception. Three associated hoards with *termini post quem* of 867–74 together amount to the largest deposit of silver anywhere in the Viking world, with no less than 14,000 dirhams and many times their weight in spiral-rings and other silver ornaments.¹⁷ Clearly, it was possible to amass a vast quantity of silver in Eastern Scandinavia in the 870s.

Although the ninth century saw perhaps the most dramatic change in Viking-Age monetary practice – the establishment of a vibrant silver economy – further developments and changes occurred during the course of the tenth and eleventh centuries. West European pennies replaced Islamic dirhams as the staple coinage in the later tenth century, and, although in some regions the use of hacksilver continued well into the eleventh century, coins became more dominant in the hoards. There had been an initiative to establish a local regulated coin economy in Hedeby in the tenth century, as there had been in Ribe in the eighth, but away from Hedeby its coinage had little economic impact.¹⁸ At the end of the tenth century the new royal Scandinavian coinages may likewise have been intended to provide a regulated currency for their mint places, Sigtuna and probably Lund, but it is not clear that they succeeded.¹⁹ More widely Scandinavian coins merely supplemented the stock of circulating foreign coinage, until eventually they formed the basis of a managed national coin economy, achieved in Denmark and Norway in the third quarter of the eleventh century, while Sweden would have to wait another century or more.

Over the course of the Viking Age, therefore, silver was used in Scandinavia in a variety of different ways.²⁰ Whole ornaments might function as a store of wealth, a means to convey one's status and power to neighbours and rivals, or be given in satisfaction of social or cultural obligations in what has been termed a 'display' or 'status' economy.²¹ However, many arm-rings, neck-rings and ingots were made to weight standards based on units of approximately 100 g, and it has been argued that they had a monetary function and could be used as a means of payment in certain transactions, acting as 'ring-money'.²² These rings, in turn, were frequently chopped up into hacksilver, for use in a money-weight or bullion economy, where they were valued according to their intrinsic silver worth, and mixed with whole or cut ingots and with imported coins that were also often fragmented. Without the guarantees accorded to coinage in a coin economy, imported coins should have passed at only their intrinsic value, but at times they may have commanded a premium for their convenience and reputation.²³ It is probably for this reason that it was worthwhile producing anonymous imitations of Anglo-Saxon and other coins at Sigtuna and probably Lund in the late tenth and early eleventh centuries, although the imitative coins were not weight adjusted and they mainly circulated alongside imported German and English coins. When eventually the Danish and Norwegian kings implemented fully-fledged coin economies, in all but their more peripheral territories they effectively excluded imported coins from circulation, thereby obliging people to pass older and foreign coins through the mints. These various ways of using silver – in 'display', 'bullion' and 'coin' economies – were not mutually exclusive, and for much of the Viking Age all three co-existed in Scandinavia. It should come as no surprise then, if we find examples of all these practices in the Scandinavians' settlements in the British Isles.

¹⁷ Pettersson 2009.

¹⁸ Wiechmann 2007.

¹⁹ Malmer 1997, 55–6, shows that coins of the local mint had a strong but by no means dominant presence among the finds from Sigtuna, albeit some of the earlier German and English coins may have been lost after Sigtuna ceased minting in the 1030s. Too few coins of the late tenth and early eleventh centuries are known from Lund to judge the composition of its currency.

²⁰ Hårdh 1996, 21–24, 131–64; Skre 2008b.

²¹ Williams 2007, 178–85; Kilger 2008b.

²² Hårdh 1996, 145–6; Hårdh 2007. For many ring types the weight standards are rather approximate; Kruse 2007, 169–72. Kilger 2008b argues that the rings derive their value from the concept of the god Odin's eternal and stable gold ring.

²³ This point is made most recently in Gullbekk 2008, 166–7.

The background: British Isles

Monetary practice in the various regions of the British Isles was also very diverse at the beginning of the ninth century before the Scandinavians had settled. Southern England had a well-developed coin economy in which Anglo-Saxon silver pennies were used by tale, not by weight, and in which foreign (notably Carolingian) coins were excluded from circulation. Coins were struck at three main minting places (London, Canterbury and an East Anglian mint, probably Ipswich), and smaller mints were active intermittently (Rochester and a West Saxon mint, at Southampton or Winchester).²⁴ By the time of the arrival of the Scandinavian great army in 865, Wessex and Mercia had entered a monetary alliance based on a single common coin type, known as the Lunettes issue, while King Edmund (855–69) in East Anglia was producing a substantial uniform and successful coinage. Coins of all three kingdoms were struck to a similar weight standard and circulated freely across borders.²⁵ In Northumbria, there was also a managed coin economy but here it was based on the local small thick pennies, known today as ‘stycas’. These had suffered dramatic debasement, so that by the mid-ninth century they were virtually pure brass; yet they were produced in vast numbers and seem to have enjoyed very active circulation in Northumbria and parts of Cumbria and Strathclyde that were subject to Northumbrian control. The supply of silver for monetary purposes in England had been very substantial earlier in the eighth century, and after a dip it had recovered under King Offa (767–96) and remained quite plentiful in the first decades of the ninth century.²⁶ A degree of debasement, not only in Northumbria but also in southern England and in the West Frankish kingdom from c.840,²⁷ together with a reduction in the number of single-finds, may be pointers to a more general contraction in the silver supply in Western Europe in the mid-ninth century.²⁸ These fluctuations in silver supply are a topic I shall return to later, but despite what must have been challenging times economically, the Anglo-Saxon system of a well-managed coin economy was maintained throughout the period.

Elsewhere in the British Isles the picture is very different. Before the arrival of the Vikings there was no local coin production, and little experience of coinage. In Ireland, a few finds suggest that Anglo-Saxon coins were present in small numbers in some sections of society, particularly in the late eighth/early ninth century, but this would not have amounted to general monetary circulation.²⁹ Precious metals seem to have been in short supply generally in eighth-century Ireland and Scotland, for ornamental metalwork, even of the finest craftsmanship, used silver sparingly and often in a debased form.³⁰ Gold is also very rare in the eighth century, except as applied filigree decoration or gilding on silver or copper alloy. A marked increase in the use of silver for ornaments among the Irish coincides with the establishment of Viking settlements in the mid-ninth century.³¹

In Wales, a solitary coin of Queen Cynethryth, Offa’s consort, found at Llanbedrgoch, Anglesey, hints at some knowledge of coinage in that small community before the Viking Age. With this possible minor exception, the other areas to which the Scandinavians came – elsewhere in Wales, the Isle of Man and the Western and Northern Isles of Scotland – show little sign of coin use before their arrival.³² There was a sharp contrast, then, between England, with its highly developed coin economy, and the western and northern regions of the British Isles, where coinage was barely known, precious metal was in short supply and

²⁴ For a survey of the Anglo-Saxon coinages of the later eighth and ninth centuries see Grierson and Blackburn 1986, ch. 10.

²⁵ Metcalf 1998, 181–3.

²⁶ Metcalf 2009.

²⁷ Metcalf and Northover 1985; Metcalf and Northover 1989.

²⁸ For the reduction in English single-finds see Blackburn 2003, and for Frankish ones see Coupland forthcoming.

²⁹ These finds were discussed in third paper in this series: Blackburn 2007a, 123.

³⁰ Ryan 1989, 125.

³¹ Ó Florinn 1989, 72.

³² Blackburn 2007a, 122–6. The date and circumstance of loss of the imitative Carolingian gold solidus from Maughold, Isle of Man is unclear, but if pre-Viking it is likely to have had an ornamental or prestige function. Several finds from the Moray Firth in eastern Scotland may be Pictish losses: Blackburn 2007a, 125.

social obligations, fines and exchanges were probably measured and satisfied in commodities such as cattle, grain and silver, as indicated in Ireland by the Irish law texts compiled in the late seventh/early eighth centuries.³³

The Scandinavian achievement: England

In popular culture the Vikings are principally thought of as tough, uncouth warriors who brought destruction to people and property, and hauled off ships full of slaves and booty. Some of this is plainly valid, for even discounting to a degree the graphic accounts in the chronicles and sagas, the historian can see evidence of this from the discontinuity of the church in the Danelaw and the pitiful survival of any of its pre-tenth century documents. Yet if one looks for their achievements, positive and constructive, the monetary evidence is revealing for understanding the policy and effectiveness of the Scandinavian states, and how Scandinavian settlers adapted to their new economic and social circumstances.

A bullion economy in the Danelaw

Prior to 865, the Vikings' periodic raids on England left little trace in the numismatic evidence; the loss of the Middle Temple (London) hoard may be connected with the raid of 842, but this appears to have been the property of an Anglo-Saxon resident, so tells us nothing of the Scandinavians' use of money. However, once the great army started over-wintering in England from 865, and had subdued Northumbria and East Anglia, evidence of their distinctive monetary practice emerges even before their settlement of the Danelaw commenced. The Croydon hoard, which was probably deposited during the Viking campaign in the London area of 871–2, is the earliest dated find to indicate that the Scandinavians in England used mixed silver by weight in their exchanges, i.e. practised a bullion economy. This hoard included 175 Anglo-Saxon coins, together with a group of seven Carolingian silver deniers, three Islamic dirhams, three ingots and five pieces of hacksilver. It has been interpreted as the property of a member of the great army who had acquired the Anglo-Saxon coins as loot or tribute, to which he added his own purse of foreign coins and silver bullion possibly brought from the Continent.³⁴

Later in 872, the army returned to Northumbria before pulling back to overwinter at Torksey, Lincolnshire. The site of their wintercamp of 872–3 has been found by metal-detector users, spanning several fields near the River Trent. The finds they have made over the last twenty-five years are simply astonishing (Fig. 3). Although we have recorded more than a thousand metal items, this is only a small portion of the material that has been found.³⁵ They include approximately twenty Anglo-Saxon silver coins mostly of the 860s and early 870s, around ninety Northumbrian stycas and at least eighty pieces of Islamic dirhams, the latest of which is dated 866/7. There are many pieces of hacksilver (mostly cut ingots, but including some spiral ring and broad-band arm-ring fragments); some hack-gold; dozens of small Viking bullion weights (many of them of the decorated polyhedral type in copper-alloy found extensively on Scandinavian and East European sites, while others are in lead often inset with pieces of broken metalwork or glass); hundreds of lead gaming pieces; and a great deal of copper-alloy ornamental metalwork, mostly of Anglo-Saxon origin, but including some Scandinavian and Carolingian pieces.

Some of this ornamental metalwork appears to have been deliberately broken, possibly to provide material for craft production, for which there is other evidence in the finds of molten globules of copper-alloy, silver and gold, and of some interesting lead trial pieces. One of these (Fig. 4, 1) had been used for testing a punch (a triangle containing three pellets) of a

³³ Gerriets 1985.

³⁴ Brookes and Graham-Campbell 2000; Graham-Campbell 2004.

³⁵ See Blackburn 2002 for a preliminary report. Many more finds have been recorded subsequently by Rachael Atherton of the Portable Antiquities Scheme and myself, and the Fitzwilliam Museum has acquired some 250 items.



Fig. 3. Selected finds from the site of the wintercamp at Torksey (image courtesy the Fitzwilliam Museum).

type commonly found as decoration on arm-rings and other Scandinavian silver ornaments. Other lead 'trial pieces' bear the impression of coin dies: one for pennies of the Lunettes type, although somewhat indistinct, seems to have blundered inscriptions (Fig. 4, 2), while another is for imitative Louis the Pious gold solidi (Fig. 4, 3).³⁶ It looks likely that there was metal-working in silver and perhaps gold on the site, and if so, might some imitative coins have been produced there too? Further fieldwork and analysis of the finds will be required before we can assert this as more than a possibility, but it would pose interesting questions about the purpose of such coins. We are well used to the concept of Viking coinages often being imitative in character, but these coins are thought to come from stable mints in settled communities, not from itinerant armies prior to a settlement phase. If imitative gold solidi or silver pennies were being struck by Scandinavians at Torksey, were they to be used among themselves, to pay members of the army, for example, or were they to buy provisions locally or to trade with Anglo-Saxon merchants, and why would silver bullion or other commodities not have sufficed for these purposes?

Many of the Torksey finds have close parallels with ones from Scandinavian sites such as Kaupang, Uppåkra, Birka and Hedeby, and they are quite unlike the finds one would expect from an Anglo-Saxon site.³⁷ It would seem that between battles, members of the great army and its entourage of supporters, including no doubt women and children, were engaged in some form of trade, craft production and endless hours of playing board games! After Torksey the army moved on to Repton in 873–4, and there the fortification of their wintercamp has been identified and excavated by Martin Biddle and Birthe Kjølbye-Biddle.³⁸ It comprised a D-shaped earthwork, abutting the River Trent, and on the landward side incorporating the walls of the eighth-century church. They also excavated a number of associated graves, including a spectacular mausoleum containing a central burial surrounded by the

³⁶ The solidus trial piece is discussed in Blackburn 2002, 93–4; Blackburn 2007c, 70–2.

³⁷ Another English site with finds of a similar nature to those from Torksey was reported to the authorities in Yorkshire in 2004, but many details, including its location, have been kept confidential. It was the subject of a survey and trial excavations by the York Archaeological Trust, which revealed mainly prehistoric features. The metal-detector finds, many of which have recently been auctioned on the internet, appear to be of a similar date and nature to those from Torksey. One group of hacksilver and coins, including *Lunettes* pennies of Burgred (852–74) and a penny of the succeeding *Cross-and-Lozenge* issue, have been treated as a hoard and will be acquired by the British Museum, which has also purchased a selection of weights from the site (information from Dr Gareth Williams).

³⁸ Biddle and Kjølbye-Biddle 2001.

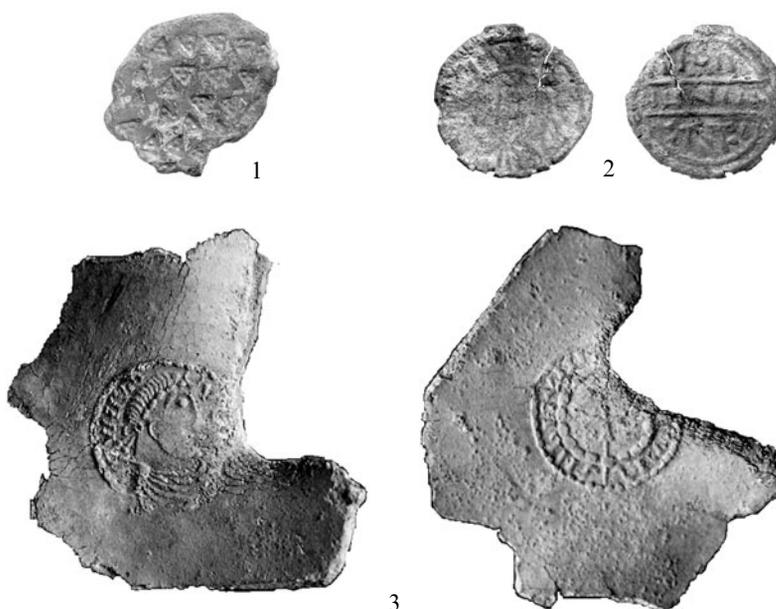


Fig. 4. Three lead 'trial pieces' found at Torksey: 1. with triangular punch marks; 2. with dies for imitations? of a Burgred Lunettes penny; 3. with dies for imitations of a Louis the Pious gold solidus (images courtesy Fitzwilliam Museum (1–2) and Scunthorpe Museum (3)).

remains of two hundred men and fifty women, who may well have been at Torksey the previous year. They found none of the rich cultural material recovered at Torksey, but the excavations focused on the church and the fortified enclosure, and the cultural material may well lie outside this area. A fortification has not yet been identified at Torksey, but it would have occupied only a small part of the total area over which finds have been metal-detected. It would seem that members of the army and their followers at Torksey were in a camp that sprawled over a considerable area and that any fortification would have been used for the leaders and core functions of the army.

The great army's experience of a mixed bullion economy can only have come from Scandinavia or northern Frisia, for it could not have been picked up from the Franks, who also had a coin economy, while the many dirham fragments and some of the hacksilver testify to continuing and recent contact with their Scandinavian homelands. Between 876 and 880 the army progressively dispersed and settled in the areas of Eastern England that became known as the Danelaw, and the economy there looks quite complex. On the one hand there is evidence that a bullion economy continued to play some role.³⁹ Single-finds of Islamic dirhams, Carolingian deniers and of pieces of hacksilver and hack-gold have been found widely dispersed across much of the Danelaw, and similar material was present in hoards from Stamford (Lincs.), Ashdon (Essex), Goldsbrough (Yorks.), Thurstaston (Leics.), Bossal (Yorks.) and the 'Vale of York' (Yorks.), with deposit dates in the range *c.*890–*c.*930.⁴⁰ Although it is difficult to judge how extensively the bullion economy was practised, it seems to have persisted to some degree in the Danelaw until the later 920s, while over in North West England it continued somewhat later.

One feature of the Viking-Age bullion economy, the practice of 'pecking' coins – stabbing or slicing them with a knife to test the purity of the silver – seems to have originated in the Danelaw. The first recorded peck marks on coins are on ones struck in the Southern Danelaw found in the Stamford and Ashdon hoards (deposited *c.*890 and *c.*895).⁴¹ However, the prac-

³⁹ Graham-Campbell 2001; Blackburn 2001, 134–5; Williams 2007, 181–5.

⁴⁰ Blackburn and Pagan 1986, and additions on the on-line version: www.fitzmuseum.cam.ac.uk/dept/coins/projects/hoards.

⁴¹ Blackburn 2001, 135; Archibald 2007, 52.

tice may have been used initially to test hacksilver rather than coins, since one cut ingot and a piece of broadband arm-ring in the Croydon hoard (dep. c.872) have ten and twelve pecks respectively, and four pieces of hacksilver from the Westerkliof II (Noord-Holland) hoard (dep. c.880) have test marks akin to pecks.⁴² These could have been applied in Denmark, where the hacksilver in both hoards appears to have originated, but peck marks are not otherwise recorded in Danish hoards, at least on coins, until the Ramløse hoard (dep. 930s), Grisebjerggård hoard (dep. 940s) and Terslev hoard (dep. 940s), suggesting the practice may have developed in Britain or Frisia and later spread to the rest of the Scandinavian world, becoming an indicative feature of the Viking bullion economy. It is last found in the Danelaw on a Sword St Peter coin of the 920s. Marion Archibald has suggested that 'systematic pecking was not practised in Viking-held areas where the invaders were issuing their own coins', and that the pecked coins in the Stamford and Ashdon hoards may have been tested in an area of the Danelaw or at a time that no coins were being struck.⁴³ Yet the combined evidence of finds of foreign coins and hacksilver, as well as pecked coins and metalwork, suggest that a bullion economy spread over the whole region and was practiced alongside a coin economy, albeit that its retreat in the earlier tenth century may have progressed at different rates in different regions.

A coin economy in the Danelaw

Although the initial effects of the conquest of East Anglia and Northumbria by the Vikings in the 860s were destructive of the monetary systems there, they did move to redress this and, in parallel with their use of a mixed bullion economy, the Scandinavian settlers in the Danelaw also embraced the pre-existing coin economy of the Anglo-Saxons. The classic features of this are a substantial, well-produced local coinage of known standard of weight and fineness, and which circulated to the exclusion of 'foreign' coins. The extent to which this last condition was met in the Danelaw is debatable, for as we have seen a mixed economy subsisted among some elements of the community, and some transactions could be conducted using silver by weight in what has been termed a 'dual economy'. However, if in the towns the use of local money was enforced through the regulation of witnessed transactions, this would have been a means of encouraging a coin economy. Single-finds from York and certain hoards or elements in hoards, including the Ashdon, 'Baldwin', Manningtree and 'Vale of York' hoards, suggest that a regulated currency was achieved in some quarters.⁴⁴ Nonetheless, just how a bullion and a coin economy could co-exist in the Danelaw will only emerge as we gather more information and a better understanding of monetary practice there.

In East Anglia minting was severely disrupted, presumably on the death of King Edmund and the Viking 'conquest' of the kingdom in 869. Despite this it is apparent that there was some degree of continuity in minting following Edmund's death. We saw in the first lecture of this series how coins related to Edmund's but struck in the names of two apparent successors, a King Æthelred and a King Oswald, lead into a small series of coins imitating the Carolingian Temple type, which include some coins of the Viking leader Guthrum (880–90), using his baptismal name Æthelstan.⁴⁵ The momentum to continue coining after Edmund's death may well have come from the Anglo-Saxon moneyers; nonetheless the coinage soon exhibited signs of being under Scandinavian control even before the great army had broken up and settled in the Danelaw. It is also telling that the prototype for the Temple coins was not the very common *Christiana religio* coins of Louis the Pious (814–40) and Charles the

⁴² Brooks and Graham-Campbell 2000, 92 (in appendix by Graham-Campbell); Graham-Campbell 2004, 40. He refers to the dirham fragments in the Croydon hoard being edge-cut 'as practised by the Scandinavians but not the Anglo-Saxons'. This practice, termed 'nicking' by Scandinavian numismatists, is found on Islamic dirhams and is now thought to have been applied in Russia before the coins reached Scandinavia; it declined after 850 and is rarely found on coins dated after c.870 (Rispling 2004, 3–4). For test marks on hacksilver in the Westerkliof II hoard, see Besterman, Rispling and Coupland 2006–7, 16–17, 61.

⁴³ Archibald 2007, 52.

⁴⁴ Blackburn 2004, 344–6; Blackburn and Pagan 2002, 8–10; Williams 2008a.

⁴⁵ Blackburn 2005, 22–30.

Bald (840–77) from French mints, but the rare Italian issue of Louis II (855–75) or Charles the Bald as emperor (875–7) which formed the latest element in the Westerkliif II hoard.⁴⁶ These would not have been encountered in the West Frankish kingdom, so does it mean that the Scandinavians who held East Anglia after Edmund's death had come from bases in Frisia where Italian coins are quite often found?

Perhaps clearer evidence of the Scandinavians' determination to adopt the Anglo-Saxon coin economy can be seen in the early to mid 880s, when Guthrum instituted a new coinage in the Southern Danelaw copying the design of the contemporary Two-Line coinage of Alfred (871–99) in Wessex and Mercia. Some of the coins name Guthrum, again using his baptismal name, but many simply copy the inscriptions from the prototypes naming Alfred and his moneyers. This is not because Alfred exercised authority over the Danes, or the coins were fraudulent, but merely because the Danes wished to emulate the successful neighbouring coinage, so benefiting from its reputation as a sound currency. At the end of the tenth century the Scandinavian mints at Sigtuna, Lund and Dublin likewise copied the designs and legends of Æthelred II's coinage. One feature of Alfred's coinage that the Danes did not adopt was the new higher weight standard (*c.* 1.6 g) for the penny instituted in Wessex and Mercia *c.* 880. Instead they retained the *c.* 1.35 g standard used by Edmund and his predecessors, and this remained the weight standard for most Anglo-Scandinavian coinages in the Danelaw. Although the Anglo-Scandinavian coins looked very similar to Anglo-Saxon ones in the 880s and earlier 890s, the finds show that they did not circulate in each other's territory, and that is perhaps more likely to be because their weights were incompatible, rather than because the 'foreign' coins were successfully weeded out and returned. Even today, numismatists have difficulty distinguishing between the coinages. Nonetheless, whether by design or economic force, the Scandinavian coinages formed an effective circulating medium within the Danelaw.

This phase of 'imitative coinages' was superseded in the mid 990s with the adoption of new designs that deliberately distinguished the Scandinavian issues from the contemporary Anglo-Saxon ones. This was a deliberate move to forge a national identity, and it is an indication of the confidence now felt by the Scandinavian kingdoms in both political and economic terms. In the Southern Danelaw in *c.* 895 the Two-Line type was replaced by a new coinage with an inscription venerating St Edmund. This was a bold move, for it became the sole coin type struck on a large scale in East Anglia and probably the East Midlands for two decades or more. The use of a Christian inscription is notable, but not wholly surprising in view of Guthrum's use of his baptismal name and of the Christian imagery on the contemporary York coinage (discussed below). But the decision to venerate King Edmund, whom the Vikings had killed a generation earlier, demonstrates a rapid and early rise in the cult of St Edmund, and, significantly for this paper, that the wishes of the indigenous Anglian population had a strong influence on the Scandinavian ruling elite. Not only was the inscription carefully drafted (S(AN)C(T)E EADMVNDE REX, 'O St Edmund the king!' in the vocative), but the design closely follows that of Edmund's own coins that would have fallen out of use at least ten years earlier, and it would thus have been copied from specimens that had been carefully retained in memory of Edmund.

In the Scandinavian kingdom of York there was no continuity of minting as in East Anglia. The Northumbrian coinage, consisting of dumpy base-metal coins known as 'stycas', had come to an end with the Viking conquest of York in 866, if not earlier. By the time the Vikings started coin production in the mid 890s, there had been no minting in Northumbria for some 30 years, and the Scandinavians were effectively starting from scratch. However, the Scandinavian kings of York had probably produced a coinage in the east Midlands, in the area later to be known as the Five Boroughs, for the only coin known of King Guthfrith (*c.* 883–95) is of a style associated with that region, and other anonymous Two-Line coins may well have been struck under his authority.⁴⁷ Establishing a new coinage at York in *c.* 895, the

⁴⁶ Besterman, Rispling and Coupland 2006–7, 55, 59–60.

⁴⁷ Blackburn 1989, 18–20.

Scandinavian kings adopted the same weight standard as that used in the Southern Danelaw, so that both monetary systems would be compatible, but their choice of design and legends was quite different and innovative, so asserting an independent identity. I have discussed elsewhere the powerful Christian iconography of this coinage and its liturgical inscriptions, employing more than forty different combinations of types with a novel variety of cross motifs, mostly derived not from other coins but drawing on a wider stock of Christian motifs (Fig. 5).⁴⁸ The clergy in York, and perhaps the archbishop himself, may well have advised Kings Sigeferth and Cnut on the designs for the coinage, but the political decision to adopt such powerful symbolism surely rested with the kings. The succeeding phase of coinage from c.905 to c.919 invoked the name of St Peter, the patron saint of York Minster, no doubt influenced by the contemporary St Edmund coinage. The overt and dominant use of Christian iconography and inscriptions was a distinctive and novel feature of these Viking coinages, apparently motivated by a desire to promote a political message about the conversion of both these kingdoms and their status among other states of western Europe.⁴⁹ Such intensive use of Christian imagery had not been seen on English coins since the earlier eighth century, and its employment here should be regarded as a notable development of the Vikings, even if it was not subsequently sustained.



Fig. 5. Various cross designs used on the royal coinage of York, c.895–905 (enlarged images, source: Fitzwilliam Museum, and Lyon and Stewart 1961).

The Scandinavians did not come with knowledge of minting techniques, and so it is not surprising that there are few moneymen with names of Scandinavian origin from the later ninth or early tenth century, but there are Old English ones and remarkably quite a few of Frankish origin.⁵⁰ As early as the 880s the Danes had brought men with minting skills over from Francia to help operate the mint(s), and they were supplemented by others in the late ninth and early tenth centuries.⁵¹ At York the use of round-headed dies and random die-axes probably reflects Continental practice introduced by Frankish moneymen.⁵² Sawyer has pointed to an interesting parallel in the Continental potters brought into the Danelaw by the

⁴⁸ Blackburn 2004, 329–32; 2007b.

⁴⁹ Whether the St Peter issue was a royal or ecclesiastical coinage has been debated; in my view it was royal (Blackburn 2004, 333; *contra* Rollason 2004, 313–14), but if the Scandinavian kings had granted away their minting rights to the Church that too could have been for similar political reasons.

⁵⁰ Smart 1985; Smart 1986.

⁵¹ Blackburn 1990, 343–4; Blackburn 2005, 31–2.

⁵² Blackburn 2004, 338–9.

Scandinavians introducing the superior wheel-thrown ceramics at several centres including Lincoln, Stamford, Torksey and York.⁵³

The coinages were in general technically well-produced and economically sound. The Scandinavians had not only adopted a western system of coinage, but they had had the foresight to engage Anglo-Saxons and Franks with appropriate expertise to run their mints. The one aspect in which their coinages fell well short of the high standard set by Anglo-Saxon and Frankish coins is their degree of literacy. On the introduction of a new type the legends would often start very well but soon decline, repeating and compounding errors through copying, indicating that there was little or no supervision of the literacy of the coinage. Since this is a recurring theme in other Scandinavian coinages (in Dublin as well as Scandinavia), it suggests that there was poor literacy among the Scandinavian elite and that they governed with little reliance on written documents. The contrast with the consistently high degree of literacy found on Anglo-Saxon coins is marked, and this is brought into focus at York during the restoration of Anglo-Saxon rule from 927 to 939. It follows that under Scandinavian rule, although the moneyers may have been Anglo-Saxons or Franks, the management and control of coin design and die production appears to have remained with the Scandinavians.

Extension of minting

At the beginning of this paper I mentioned that the number and distribution of mints in England changed dramatically over the period of Scandinavian rule over the Danelaw. In the 860s there were probably only five mints operating (Canterbury, London, York, Ipswich? and Winchester?), while by 930 there were some thirty-five mints named on Athelstan's coinage, spread throughout the country as far north as York. Alfred had instigated this expansion in the mint network as a corollary to his plan to establish a series of fortified burhs for the defence of the country. By the end of Alfred's reign the number of mints in Wessex and English Mercia had grown from two to eight or nine, and under Edward the Elder (899–924) this increased to seventeen or eighteen, while Athelstan (924–39) added a further ten or so in these regions.⁵⁴ The principle that any town with the status of a burh was entitled to operate a mint is implied by a provision preserved in the law code II Athelstan made at Grately, Hants but probably originating in the reign of Edward the Elder. Cap. 14 of the code lists twelve mints in southern England indicating the number of moneyers to which each was entitled, and concluding 'otherwise in other boroughs one [moneyer]'.⁵⁵

In the Danelaw, the Scandinavians themselves set up a number of new mints during the same period, although only a few are named on the coinage. The main East Anglian mint of the pre-Viking period, probably at Ipswich, seems to have continued in operation and may well have been the Vikings' principal mint in the southern Danelaw. The York mint, as has been mentioned, probably reopened in about 895. Other mints in the Danelaw appear to have been new foundations under the Scandinavians. Lincoln is first named on some copies of the London Monogram type probably dating from the 880s, and on the St Martin coinage during the 920s,⁵⁶ but it is quite likely to have been a significant mint throughout the Scandinavian period.⁵⁶ Leicester is named on a unique halfpenny of the Horizontal or Two-line type, probably struck c.883–95.⁵⁷ The only other mint named on the imitative Scandinavian coinage is Shelford (thought to be Little Shelford, near Cambridge), found on two coins of an Earl Sihtric, probably from the 890s.⁵⁸ In the Sword coinages of Sihtric Caoch (921–7) there are two additional mint-names likely to be in the Midlands: **CASTRA EQRT**, which has not been

⁵³ Sawyer 1998, 180.

⁵⁴ Blackburn 1996b, 162–4.

⁵⁵ Mossop 1970, pl. I, nos. 1–11.

⁵⁶ If so its products between c.895 and c.920 have yet to be identified. For earlier part of this period the 'Orsnaforda', 'Doro'/Canterbury style and 'Quentovici' issues are candidates, but after c.905 it could only have been coins of the St Edmund or St Peter type.

⁵⁷ Grierson 1957, 488 and pl. 28, no. 35 (now in the Fitzwilliam Museum).

⁵⁸ Hart 1995.

identified, and **RORIVA** (or **hORIVA**) **CASTR**, for which Williams has proposed an attribution to Rocester, Staffs.⁵⁹ These named coins are very rare, but there are other large coinages without mint-names. Although much of the imitative 'Alfred' coinage and the St Edmund coinage may have been struck at Ipswich, the scale, variety and find distributions of these issues suggest that several other mints were also operating in East Anglia and the East Midlands. These cannot be identified, but Norwich, Thetford, Cambridge/Shelford, Stamford, Lincoln and Leicester are all possible candidates. It is clear, then, that Alfred and Edward were not the only rulers opening mints in the later ninth and early tenth centuries. After the reconquest of the southern Danelaw, Edward's and/or Athelstan's coinages were struck at Hertford, Leicester, Maldon, Norwich, Nottingham and other unnamed mints in East Anglia and Lincolnshire.⁶⁰ If only we knew how many of these had already been established by the Scandinavians, we might have a better understanding of the basis on which they selected their mint places. Shelford seems to have been the base for an army led by Earl Sihtric, but it is also quite likely that the Scandinavians may have emulated Alfred's policy and sought to build a network of mints located in the principal towns of the southern Danelaw.

It is fair to say, then, the Vikings had a profound impact on the pattern of mints in England, whether by opening mints themselves or prompting Alfred and Edward to do so. By the 920s regional minting was well established and would remain a feature of the English monetary system until the thirteenth century. Should this be regarded as a Viking legacy, or would it have developed anyway? In France and Germany minting in the tenth century was also regional, but that had been a feature of the Merovingian and Carolingian monetary systems, subsequently influenced by the dispersal of power among the nobility and church. The powerful monarchy in England could have resisted that, but Edgar's introduction in the 970s of a system of periodic recoinages depended upon there being a network of local mints, which had further expanded to some sixty by the late tenth century.⁶¹ The prior existence of such a network in England, coordinated from the centre, was clearly a great advantage to Edgar when planning his monetary reform, and had there been only one or a few large mints in the kingdom, the *renovatio monetae* system might well have taken a rather different form. The *renovatio* system in Bohemia, for example, was based on the output of one central mint in Prague, and this could perhaps have worked in England too, with an extensive network of money changers rather than regional mints. It is then reasonable to regard the extension of minting in the later ninth and early tenth centuries as a Viking legacy of profound importance for the English medieval monetary system.

Scale of minting

The eastern kingdoms – East Anglia, Lindsey and Deira – had long been prosperous regions, with good agricultural land and direct access to the North Sea and Continental trade. Single coin finds show that in the eighth and early ninth centuries they had a more vibrant currency than most other parts of Britain. However, the East Anglian mint (at Ipswich?) had been comparatively small with much lower production than either Canterbury or London, until after c.805 when London's output declined dramatically and Ipswich became the second or third most productive mint in southern England after Canterbury and at times Rochester.⁶² It remained moderately productive under the independent East Anglian kings from c.825 until Edmund's death in 869.

The imitative Temple type issues of the 870s are extremely rare, but they may not have been struck on as small a scale as this might imply, for there is virtually no die-linking among the known specimens, and the discovery of an East Anglian hoard deposited in c.880 could

⁵⁹ Williams 2008a, 231; 2008b.

⁶⁰ Blunt, Stewart and Lyon 1989, 255–63.

⁶¹ Stewart 1992, 49–68.

⁶² Naismith 2009, vol. 1, 156–62, based on estimates of the number of dies used, projected from a corpus and die-study.

radically change our knowledge of this coinage.⁶³ The Two-Line or Horizontal coinage struck by Guthrum, partly in his own name and partly copying the name of Alfred, was substantial. There were some thirty moneys in the Danelaw striking this coinage,⁶⁴ compared with fifty-two at Alfred's mints, or eleven under King Edmund. We cannot estimate the number of dies used for the whole coinage, as a die-study has not been carried out on the imitative ones, but the scarce coins struck in Guthrum's name are alone estimated to have been struck from about 180 pairs of dies.⁶⁵ If this coinage were produced over a period of some eight years down to Guthrum's death in 890, it would imply that an average of *c.*20 dies were used per year. But this is just for the rare signed coins of Guthrum, and if one adds in the much more common 'Alfred' imitations, it is apparent that the Viking *Two-Line* coinage of the 880s and earlier 890s must have been produced on a large scale. By comparison, in the three most prolific issues of Æthelred II's reign (978–1016) *c.*30–*c.*60 reverse dies per year were used at the mint of Lincoln,⁶⁶ and Naismith has estimated that the East Anglian coinage during Edmund's reign was struck from an average of *c.*40 reverse dies per year.⁶⁷

If the Two-Line coinage of the 880s and early 890s seems substantial, the St Edmund issue of *c.*895–918 was probably even greater. Again we lack a die-study, but one can get a feel for its size from the 600 or so specimens from the Cuerdale hoard selected by Edward Hawkins for the British Museum collection, virtually all from different dies, and belonging just to the first half of the issue, *c.*895–*c.*905. The St Edmund coins are also more plentiful as single finds than the preceding imitative London Monogram and Two-Line issues – eighty-five compared with twenty-eight among the finds recorded on EMC (Table 1).⁶⁸ Moreover, if one adds in the 'Orsnaforda', 'Doro' and 'Quentovici' imitative issues struck in parallel with the St Edmund coinage, probably from mints in the East Midlands, and averages them over the life of the coinages, the St Edmund period issues are found at twice the rate of the earlier Viking issues: 3.9 compared with 1.9 coins per year.

TABLE 1. Single finds of Danelaw coins recorded on the Corpus of Early Medieval Coin Finds (EMC).

Edmund of East Anglia (855–69)		22 (1.6 coins per year)
<i>Southern Danelaw issues, c.880–95</i>		
London Monogram imitations	6	} 28 (1.9 coins per year)
Guthrum, Two-Line	2	
'Alfred', Two-Line imitations	20	
<i>Southern Danelaw issues, c.895–918</i>		
St Edmund	85	} 89 (3.9 coins per year)
'Orsnaforda'	1	
'Doro'/Canterbury style	3	
'Quentovici'	–	
<i>York issues, c.895–919</i>		
Sigferth and Cnut coinage	10	} 24 (1.0 coins per year)
Swordless St Peter	14	

At York the newly-opened mint was striking coinage for Kings Sigferth and Cnut (*c.*895–905). Lyon and Stewart made a die-study of this regal coinage from which we can esti-

⁶³ For a corpus and die-study see Blackburn 2005, 36–8; to which one new coin can be added, a Temple type in the name of King Æthelred by the moneyer MEORNAE (= Beornheah), similar to Æ3, found S. Norfolk before 1982, acquired Fitzwilliam Museum 2009.

⁶⁴ Blackburn 1990, 345–5.

⁶⁵ Blackburn 2005, 32; the estimated number of reverse dies is *c.*190 (with a 95% confidence range of 95–470), and of obverse dies is *c.*170 (range 85–400).

⁶⁶ Metcalf 1981, Appendix VI (based on Lyon's calculations in Mossop 1970), estimates that in the three largest issues of Æthelred II's reign (Crux, Long Cross and Last Small Cross) Lincoln used *c.*200–*c.*370 reverse dies over some six years, so *c.*30–60 dies per year. These are point estimates and subject to quite wide margins of uncertainty.

⁶⁷ Naismith (2009, vol. 1, 157 and vol. 2, 479) estimates that some 545 reverse dies were used during Edmund's reign of some 14 years, so about 39 dies per year. Again, as point estimates these are subject to quite wide margins of uncertainty.

⁶⁸ *Corpus of Early Medieval Coin Finds from the British Isles, 410–1180*, on-line via www.medievalcoins.org.

mate that some 550 reverse dies were used over its ten-year life, so around 50 dies per year.⁶⁹ That figure exceeds the typical number of dies used annually at York in the late Saxon coinage, which Lyon has estimated to average 30–40 per year, though rising to 70 on occasion, based on Lean's unpublished die-study. So by the year 900 the newly opened Viking mint at York appears to have had an output greater than it would normally achieve in the eleventh century, when York ranked the second or third largest mint in the country. For the Swordless St Peter coinage (*c.* 905–19) we have no basis for die estimates, but where we do for subsequent York issues the pattern is variable. The coinage of Ragnald I (919–920/1) may have had a comparable annual output to that of the Sigeferth/Cnut coinage, but the Sword St Peter issues (921–7) had a considerably lower average output unless one adds in the related issues in the name of Sihtric Caoch struck in the Five Boroughs. On the restoration of the Scandinavian kingdom in 939, Anlaf Guthfrithsson's Raven type represented a massive recoinage, using an estimated 122 obverse (so perhaps 250 reverse) dies. Subsequent issues of Anlaf Sihtricsson and Eric Bloodaxe, where we have estimates, appear reasonably substantial.

It is quite remarkable that, within only a few years of settling in the Danelaw, the Vikings should have established arrangements for minting on such a scale, and that a sufficient supply of silver should have been available to them, not merely for the initial conversion of loot and tribute into coinage, but to maintain and increase the mint output over several decades. If one adds to this the substantial quantity of hacksilver and other bullion in circulation, the amount of silver at the disposal of the Scandinavians in the Danelaw is still more impressive. Yet the Anglo-Saxons appear to have experienced acute shortages of silver at times. Mention has already been made of the trouble the Northumbrians had had in providing enough silver for their coinage earlier in the ninth century, leading to a dramatic debasement of the 'stycas', and the same pressures probably led to debasements in the West Saxon and Mercian coinages between *c.* 840 and *c.* 875, as well as a parallel debasement on the Continent.⁷⁰ Then in the 890s, the London mint contracted dramatically, supporting just one moneyer, Beagstan, whose output was small,⁷¹ and in the opening years of the tenth century Canterbury also had a minimal production.⁷² Thus, at a time when coin production in the Danelaw seems to have been booming, the two principal mints in Wessex and Mercia were suffering an acute recession.⁷³ It is worth remembering that silver could easily be transformed from coin into ornamental plate and vice versa, and it is likely that in times like this the country's stock of ecclesiastical and secular silver plate would have been reduced too. Were the Vikings so successful at obtaining silver that they were putting Alfred's kingdom under real financial pressure? Or were these changes merely a product of general international economic forces, similar to those that prompted the cycles of debasement in the seventh, eighth and tenth centuries? We will return to this question later, when considering the overall economic impact of the Scandinavians on England and other parts of the British Isles.

The Scandinavian achievement: Ireland

If the Scandinavian response to the context they found in Danelaw was a complex blend of introducing their own bullion economy while also adopting and developing the coin economy of the Anglo-Saxons, the approach they took in other parts of the British Isles was no less interesting and varied.

⁶⁹ Lyon and Stewart 1961. For estimates of the number of dies used in various Scandinavian issues at York and the comparative figures cited here, see Blackburn 2004, 342–4.

⁷⁰ See above, p. 47.

⁷¹ Blackburn 1998, 111–12.

⁷² Blunt, Stewart and Lyon 1989, 33–4, 265. Previously, Dolley and Blunt (1961, 86) had suggested that the interruption in minting at Canterbury had occurred earlier, in the aftermath of the Viking sack of the city in 892, but it now seems that the mint continued operating until the late 890s, striking the distinctive DORO issue towards the end of this period; Blackburn 1989, 25–6.

⁷³ However, Winchester was flourishing; Blunt, Stewart and Lyon 1989, 29.

In Ireland they brought about a dramatic change in monetary practice, not just in the Scandinavian settlements but among the Irish kingdoms too. As we have seen, when the Vikings arrived in Ireland there was little knowledge of coinage.⁷⁴ Exchange transactions used various forms of commodity money, and precious metals were generally in short supply. From the 840s onwards they established fortified bases or *longphorts* along the coast and on rivers, some of which developed into permanent settlements. They were used for raiding, but soon the Scandinavians were also interacting politically, culturally and economically with the local Irish populations.⁷⁵ Through these relations the settlements, particularly at Dublin, Waterford and Cork, developed markets which served regional as well as local needs. Through their international connections the Vikings brought silver to Ireland which was used as a means of payment in the Scandinavian settlements, and hence it percolated into the Irish kingdoms. Some or much of this silver may have arrived in the form of coinage, but there is little evidence for its widespread use in Ireland during the ninth century. Only four hoards of this period contain coins, of which the largest, from Delgany, is a sum of money brought directly from southern England c.830, and another, from Mullaghboden, consists only of eleven Carolingian coins from Aquitaine.⁷⁶ The other two finds are a pair of Anglo-Saxon coins in a grave at Cushendall, and six unprovenanced coins in the National Museum (plus another associated coin) assumed to be from Ireland. In addition there are at least fifty-two further hoards containing just precious metal and no coins, which Sheehan dates to a broad period, mid-ninth to mid-tenth century.⁷⁷ These coin-free hoards demonstrate how important hacksilver and whole ingots and arm-rings were in the new monetary economy in Ireland, and how inadequate our perception of it would be if we focused exclusively on the role of coinage.

With so few early coin-dated hoards from Ireland, all poorly recorded, it is extremely difficult to put a chronology on the development of the silver economy during the ninth century. The Cuerdale hoard (dep. c.905), Dysart 4 (dep. c.910) and a few other contemporary mixed Irish hoards show that hacksilver was in use by the late ninth/early tenth century, but we should be cautious about interpreting the absence of earlier mixed hoards as indicating that the bullion economy was a late ninth-century development in Ireland. Just as recent site finds from Kaupang, Uppåkra and Torksey, as well as the Croydon and the Westerkliof II hoards, have shown that hacksilver was actively used in the mid-ninth century in Scandinavia, Frisia and the Danelaw, so we should keep an open mind as to whether such finds might also be encountered in Ireland. Hoards are traditionally our main source of evidence, but as we have seen for these other regions, site finds and stray finds can be a more cogent indicator of the active use of silver in monetary exchange. The most prolific site in Ireland has been Dublin, but, as discussed in last year's lecture, its economy was quite different from that of the rest of the island. Moreover, the Dublin finds, which have been prolific in coins and weights but with little hacksilver and few ingots, have reflected the status of the economy in the later Viking Age, since the centre of Dublin's ninth-century economic activity has yet to be located.

The only other Irish Viking-Age site with plentiful finds is Woodstown, three miles upstream from Waterford.⁷⁸ The rescue excavations of 2003–4 yielded twenty-nine pieces of hacksilver and four whole silver ingots, 208 lead weights (including ones with pieces of metal-work or glass set in the top, as at Torksey and Kaupang) and just one coin, a fragment of an Islamic dirham yet to be identified. As at Kaupang, Uppåkra and Torksey, these were virtually all found in the top soil by a metal-detector survey, rendering their interpretation difficult. Woodstown is a multi-phase site, which seems to have started in the mid-ninth century with a small defensive enclosure and later expanded into a substantial settlement that was then abandoned by the mid-eleventh century. However, over what period were the silver and

⁷⁴ See p. 47 above.

⁷⁵ Discussed by Clare Downham in a paper, 'Viking camps in ninth-century Ireland: sources, locations and interactions', read at a conference *Between the Islands*, Cambridge, March 2009.

⁷⁶ Blackburn 2007a, 124–5.

⁷⁷ Sheehan 1998.

⁷⁸ O'Brian and Russell 2005; McNamara 2005.

weights lost? The combination of hacksilver, weights and coins is typical of finds from the productive Scandinavian emporia and market sites of the ninth and tenth centuries, but the proportion of coins at Woodstown is remarkably low. At Kaupang, Uppåkra and Torksey coins and hacksilver occur in broadly similar quantities to each other, but the composition of the Woodstown finds is very different and seems to reflect an exchange system that relied mainly on hacksilver, ingots and arm-rings, and from which coinage was virtually absent. The contrast with finds from the Dublin excavations is notable, but was the difference a matter of chronology, location or both? In analysing the hacksilver from Woodstown, Sheehan has commented on its generally earlier character, even if much of it is undiagnostic, with only two putative pieces of Scoto-Scandinavian 'ring-money' likely to date from the later Viking Age, c.950–c.1050.⁷⁹ Eleven of the silver pieces (33 %) have peckmarks, a practice that was already well-established in the Irish Sea area by the time of the Cuerdale hoard and continued in Ireland throughout the tenth century. The very low proportion of coins to hacksilver and weights, on a site of Scandinavian rather than Irish character, also points to an early Viking-Age date for the loss of most of this material, probably in the mid-ninth to early tenth century. The settlement may well have continued in use down to the mid-eleventh century, but it would seem that considerably before that date the exchange activities moved either to a different part of the site which has not yet been investigated, or to another location, most likely at Waterford.

The Woodstown finds are important in suggesting that there was an early phase in the monetisation of Ireland in which even the Scandinavians used only hacksilver, silver arm-rings and ingots, and when foreign coinage from Scandinavia, England or the Continent was promptly melted down. Dating the beginning of this phase is proving elusive, but perhaps one day further excavation at Woodstown or a comparable site may reveal stratified hacksilver in mid-ninth-century layers, as has been found at Kaupang. Such a date would accord with the period in which the production of Hiberno-Scandinavian broad-band arm-rings is thought to have commenced, as well as the development of new forms of Irish penannular brooches in silver. It would also explain the scarcity of coin hoards of the ninth century, while allowing the possibility that a significant proportion of the fifty-two coinless hoards were deposited then.

The Scandinavian achievement in transforming the economy of Ireland over the course of the ninth century from one without silver and based on commodity money and social exchange, to a silver-rich bullion and display economy was no less remarkable for the fact that coinage may have been marginal to it. We saw in the third and fourth lectures how the use of coinage within a bullion economy became more prevalent in the Irish Midlands during the second half of the tenth century, while in Dublin itself a *de facto* coin economy based on imported Anglo-Saxon coins seems largely to have displaced the exchange of hacksilver and ingots.⁸⁰ By the end of the tenth century, Dublin had sufficiently developed its own effective administration and Sihtric III had the political power to introduce a regulated coin economy based on his own Hiberno-Scandinavian coinage. The system was modelled on that of the Anglo-Saxons, even to the extent of attempting to implement some periodic recoinages, but it settled down in the eleventh century to a more typical monetary system with longer-lived coin types that were nonetheless effective in providing an exclusive currency for Dublin itself, which was also widely used in other parts of Ireland and the Irish Sea littoral in conjunction with imported Anglo-Saxon coins.⁸¹ By the twelfth century, Dublin was firmly under Irish control and coinage was used across the island, although as in many medieval societies exchanges using commodity money, barter and credit would have been prevalent too.

While the broad trends are clear, we should not read the monetary history of Ireland as a linear development from a display economy to a bullion and then coin economy, in which arm-rings and ingots are displaced by hacksilver and then coinage. Different regions clearly

⁷⁹ I am grateful to John Sheehan for showing me his unpublished 'Report on the silver assemblage from Woodstown, Co. Waterford'.

⁸⁰ Blackburn 2007a, 129–30; Blackburn 2008a, 118–23.

⁸¹ Blackburn 2008a, 123–33.

moved at a different pace, but even within any one society different means of exchange were often used simultaneously.⁸² As Bornholdt Collins points out, one mixed hoard such as Dunmore Cave 2 may reflect dual practices; its hacksilver and five heavily-tested coin fragments would have been used as bullion in money-weight transactions, while the nine whole coins and one cut half appear to have been accepted as coinage, probably exchanged at a slight premium to their intrinsic value.⁸³ The revelation in the 1980s that many of the silver hoards must have belonged to Irish people, rather than Vikings, was an important development in our understanding of the economy of Ireland.⁸⁴ The new challenge, as evidence gradually builds up, will be to define the nature of monetary exchanges at various periods among the many different societies across the island, and how interactions occurred between them. The Scandinavians played a crucial role, not just in bringing silver in significant quantity to Ireland, but in stimulating its diffusion and use among the Irish, which indeed stands as a remarkable achievement and one that endured into the twelfth century, and beyond the Anglo-Norman invasion of 1169.

The Scandinavian achievement: Wales, the Isle of Man and Scotland

In Wales the impact of the Vikings was far less significant. As in Ireland, the indigenous population did not use coinage, and although the Scandinavians themselves brought silver bullion and coins to their own coastal settlements or staging posts, they did not succeed in introducing monetary exchange to the Welsh. The nature of the hoards and single-finds from Wales is similar to those from Ireland, but their limited number and peripheral distribution suggests that they remained in Scandinavian hands.⁸⁵ From the eleventh century an imitative coinage copying Cnut's Quatrefoil type has been located as the product of a mint in the Irish Sea region (Fig. 6, 2), and a second, as yet unpublished, series of imitations (in this case copying Æthelred II's Long Cross type) has been identified (Fig. 6, 1).⁸⁶ Both these series mainly copy official coins of Chester, implying that their mint was located in an area where Chester coins would have dominated. North Wales is a possibility, but a site on the Wirral peninsula has been preferred on the grounds that quite substantial coinages such as these are likely to have been produced at a well-established market site trading into the Irish Sea and beyond, notably to Scandinavia where the coins have been found in some quantity.

The monetary evidence from the Isle of Man commences much later than in other regions, since it was not settled by Scandinavians until the first half of the tenth century, but its record of finds from *c.* 950 to *c.* 1075 is rich. As Bornholdt Collins has pointed out, Man has a greater density of finds per square kilometre than any other part of the British Isles, reflecting its key location controlling the shipping routes across the Irish Sea.⁸⁷ The hoards from Man have a distinctive composition implying direct contact with England, Ireland and Scotland. Most of the hoards contain a mixture of hacksilver or whole ingots or arm-rings and Anglo-Saxon or latterly Hiberno-Scandinavian coins, showing that a bullion economy subsisted down to the later eleventh century. However, there were early signs in the third quarter of the tenth century that coins were also being used on the island in a nascent parallel coin economy.

Anglo-Saxon pennies deliberately cut into halves and quarters to form smaller denominations are a common phenomenon after Edgar's reform of the coinage, *c.* 973. However, cut halves of pre-reform coins occur in a number of Manx hoards but rarely elsewhere, showing that during the third quarter of the tenth century cut-halfpennies were in use on the Isle of Man, and were being counted and used by tale in certain transactions.⁸⁸ Two generations

⁸² The case for the presence of dual economies at times in Scandinavia and the Scandinavian colonies has been made by several authors, recently, for example, in Graham-Campbell 2007.

⁸³ Bornholdt Collins forthcoming a.

⁸⁴ Gerriets 1985; Kenny 1987.

⁸⁵ Discussed in Blackburn 2007a, 130–2.

⁸⁶ Blackburn 1996a. The Long Cross series will be published by Joe Leighton and myself in due course.

⁸⁷ Bornholdt Collins 2003, 235–40.

⁸⁸ Bornholdt Collins 2003, 275–99 and appendix v.



Fig. 6. Coinages of the Irish Sea area: 1. Irish Sea imitation of Æthelred II's Long Cross type; 2. Irish Sea imitation of Cnut's Quatrefoil type; 3. Hiberno-Manx, transitional type from the transported Dublin obverse die; 4. Hiberno-Manx, substantive type (enlarged images courtesy the Fitzwilliam Museum (1) and the Manx Museum (2-4)).

later, *c.* 1025, the Scandinavians on Man started striking their own coinage, initially using a pair of dies taken from the mint in Dublin (Fig. 6, 3), but as these wore out a local engraver copied the dies repeatedly, exaggerating certain features of the bust and design, including a die flaw before the face which became a distinctive strong line on the Manx coins (Fig. 6, 4).⁸⁹ The coinage continued to be produced until *c.* 1065 or later. The significance of a kingdom producing its own coinage is considerable, but what was its purpose? One possible motive could have been for prestige, and the fact that the Manx coins have no meaningful inscriptions does not detract from this, since coinages of the Scandinavian kingdoms are often of such poor literacy before the mid-eleventh century that it is plain that writing was not understood or valued by many Scandinavians, including those among the ruling elite. Imagery would have been more effective than words. However, as the initial Manx coins produced from the transported Dublin obverse die would have been indistinguishable from contemporary coins of Dublin, propaganda and status are unlikely to have been the prime motives behind this coinage. It could have been produced for fiscal reasons, to generate income from operating a mint, but there is no evidence that people were obliged to exchange foreign coinage or bullion for Manx coins. However, if there was a dual economy operating on the island, as coin production itself implies, coinage of any kind may have commanded a premium over silver bullion, and been sufficient motivation to attract merchants and others to bring silver to the mint. No Viking-Age town or market site has yet been found there, leaving open the question where the coinage might have been struck, and how minting was organised.⁹⁰ Yet we should not underestimate the authority and organisation required to maintain production of a coinage such as this over some forty years. The Viking-Age coin finds from Man finish at the end of the eleventh century, and there is then a gap of almost a century during which the economy moves into recession and isolation.⁹¹ For a hundred and fifty years the Isle of Man had flourished under Scandinavian rule, but this achievement did not leave an economic legacy.

Scotland's Scandinavian settlements, like those of Ireland and Wales, were strung out around the periphery, nestling among the Northern and Western Isles, parts of the western seaboard and north-east Scotland. Connected by the most efficient transport routes – the

⁸⁹ Bornholdt 1999; Bornholdt Collins 2003, 299–315 and appendix vi.

⁹⁰ Bornholdt Collins 2003, 337; Wilson 2008, 115–16.

⁹¹ Bornholdt Collins forthcoming b.

North Sea and North Atlantic – these were not such remote places as they might appear. A series of silver hoards and single finds of coins of the tenth and eleventh centuries come predominantly from these areas. These hoards are essentially either mixed, containing both coins and metalwork, or purely metalwork hoards. Unlike the Irish or Welsh hoards, they show little sign of a progressive move to abandon the use of bullion as a means of exchange, for even the latest hoards, from the mid- to late-eleventh century, contain substantial quantities of hacksilver, ingots and a local form of plain penannular arm-ring.⁹² However, these arm-rings are approximately weight adjusted and seem to have been used as a type of ‘ring-money’ currency.⁹³ Moreover, the coin element of the hoards is in some cases very substantial, comprising mainly Anglo-Saxon or Norman-French issues as whole coins, which could imply that they had previously circulated in some form of coin economy. The single coin finds have mostly been found at recognised Scandinavian settlement sites, often as archaeological excavation finds,⁹⁴ and Williams has argued on the basis of this that coinage was used as money within the settlements from the early tenth until the late eleventh century. However, hacksilver also occurs as single-finds on these sites, suggesting that the local currency was not coin specific.⁹⁵ The picture that emerges from Scotland is one in which the principal means of exchange and store of wealth throughout the Viking period, were ingots, arm-rings (‘ring-money’), coins and hacksilver, the ‘ring-money’ becoming debased to some degree and the hacksilver more finely divided.⁹⁶ By the eleventh century this currency was quite distinctive and mainly used in the Scottish Isles, though it could be traded on into the Irish Sea. One further distinction between the progression of the Scottish and Irish monetary economies is that while in Ireland it led smoothly to monetisation based on the Hiberno-Scandinavian and Anglo-Norman coinages of the twelfth century, in Scotland there was a hiatus in the late eleventh century when silver currency fell away, and coinage was eventually introduced into Scotland by David I in the mid-twelfth century directly from England.

The economic impact of the Scandinavians

It is clear that the Scandinavians in the British Isles were very successful at obtaining substantial quantities of silver, but where did it all come from? One can speculate that there were three possible or likely sources – from the Anglo-Saxons, from the Franks or from Scandinavian bullion, much of which derived from Islamic dirhams that had arrived via Eastern Europe. One could mount a case for the Scandinavian coinages of the Southern Danelaw and of York being most likely drawn from a combination of Anglo-Saxon and Carolingian silver obtained initially in tribute and loot, and subsequently through trade, while the ornaments and ingots made in the Scottish isles and Irish Sea area might well have included silver that had arrived directly from Scandinavia. However, metallurgical analysis suggests that this is not what happened. Thanks to extensive programmes of coin analyses by Metcalf and Northover and of ornamental metalwork and hacksilver by Kruse and Taite, we are quite well informed about the characteristics of the various groups of material, and the results are somewhat surprising.⁹⁷

Most silver in use will have been reused several or many times and have been refined, alloyed with other metals and re-refined again and again. Although this process can change the metallic composition substantially, the ratio of gold in silver remains fairly constant because it is difficult to separate gold and silver, and this makes it one of the best indicators for distinguishing sources of silver. Analyses suggest there are distinct differences in the gold in silver ratios for the Anglo-Saxon, St Edmund, York Sigferth/Cnut and Carolingian

⁹² Graham-Campbell 1995, hoards 3, 8 and 16.

⁹³ Graham-Campbell and Batey 1998, 238–9.

⁹⁴ Williams 2006.

⁹⁵ The most prolific excavated site for single-finds is the Brough of Birsay on Orkney, which has produced three coins, three pieces of hacksilver and one piece of hack-gold; Graham-Campbell 1995, 86–8.

⁹⁶ Graham-Campbell and Batey 1998, 243–5.

⁹⁷ Metcalf and Northover 1985 and 1988; Kruse and Taite 1992; Kruse 1992.

coinages (Table 2). Although the ranges overlap, the shapes of the curves show that the Danelaw coins were not made primarily from melting down Anglo-Saxon coins, for their gold in silver ratios lack some of the higher values one would expect if this were so. Instead they have values concentrated in the mid-range, between 0.7 and 1.0 (Au in parts per 100 Ag), comparable with Carolingian coins, and these seem likely to have been a prominent source in the metal used to strike the St Edmund and York coinages. By contrast, Scandinavian metalwork or Islamic dirhams, which have exceptionally low gold in silver contents, ranging from 0.0 to 0.35, do not appear to have been a significant contributor to the alloy of the Danelaw coins. The compositions of the hacksilver in the Cuerdale and other Danelaw hoards are different again, with a range of values spreading well below those found in the coinages. They show that the stock of silver from which hacksilver was made was more diverse, and probably included a substantial element drawn from Scandinavia. The metalwork from later Irish and Scottish hoards presents a similar picture to the metalwork from the Danelaw, and so too do the ingots in the hoards Dysart 1, 2 and 4, which are thought to be of indigenous Irish manufacture, though the silver seems to be comparable to that used by the Hiberno-Scandinavians. Thus while Anglo-Saxon coins and ornamental metalwork would probably have provided some of the silver used by the Scandinavian settlers in the British Isles, a greater contribution seems to have been made by Frankish and Islamic coins.

TABLE 2. Proportion of gold in silver (parts per 100) in various coinages and metalwork (source Kruse 1992, 77–8, 80).

<i>Au in p.p.</i> <i>100 Ag</i>	<i>St Edmund</i> <i>coins</i>	<i>Sigeferth/</i> <i>Cnut</i> <i>York</i> <i>coins</i>	<i>Cuerdale</i> <i>hack-</i> <i>silver</i>	<i>Dysart 1,</i> <i>2 & 4</i> <i>ingots and</i> <i>hacksilver</i>	<i>Anglo-</i> <i>Saxon</i> <i>coins</i> <i>(899–946)</i>	<i>Frankish</i> <i>coins</i>	<i>Islamic</i> <i>coins</i>
2.0+					1		
1.9–2.0							
1.8–1.9							
1.7–1.8							
1.6–1.7					1	1	
1.5–1.6					2		
1.4–1.5					2		
1.3–1.4					1		
1.2–1.3					4		
1.1–1.2	3				2	2	
1.0–1.1		1			7	1	
0.9–1.0	3	2	1		2	13	
0.8–0.9	3	2	1		3	7	
0.7–0.8	1	5	5	3	6	7	
0.6–0.7		2	6	7	1	4	
0.5–0.6			7	6	1		2
0.4–0.5			2	3	2		7
0.3–0.4			5				6
0.2–0.3			1	4			6
0.1–0.2			3				
0.0–0.1							
Total	10	12	31	23	35	35	21

The story may not be quite as simple as that presented here, for the trace levels of bismuth should be higher in the hacksilver and ingots if the silver ultimately derived in part from Islamic dirhams. After *c.*975 there is a marked change in the composition of Anglo-Saxon and Hiberno-Scandinavian coins, showing lower gold to silver levels than previously, probably reflecting the arrival of German silver from the Harz Mountains rather than the inclusion of Islamic silver.⁹⁸ In the future further analyses should provide a sounder basis for interpreting the sources of silver, and it would be instructive to look, for example, at the composition

⁹⁸ Metcalf and Northover 1986, 47; Heslip and Northover 1990.

of the hacksilver found at Torksey to see if at this very earliest stage it was imported from Scandinavia, imported from Ireland or made locally from Anglo-Saxon silver.

If this scientific evidence suggests that the Scandinavians may not have extracted silver from the Anglo-Saxons on quite such a wholesale basis as we might have thought, it also indicates that they operated rather as a force that attracted silver to these islands both from the Continent and from Scandinavia. The net result, as we have seen particularly in Ireland, Scotland, the Isle of Man and to a lesser extent Wales, was the introduction of a limited currency of silver coinage and bullion, where previously there had been none. Even in England, the Danelaw undoubtedly enjoyed a larger and more vibrant monetary circulation than it had done previously, evident from an increase in single finds of coins and pieces of hacksilver from this region, and also from the substantial coinages being minted there. Excavations at York and Lincoln have shown how craft production and trade grew dramatically during the first half of the tenth century, initially while under Scandinavian control.⁹⁹ And the region's prosperity continued after the Anglo-Saxon reconquest, so that in the later tenth and eleventh centuries York and Lincoln were generally the second and third most prolific mints in the country. To what extent the prosperity of the Scandinavian kingdoms brought economic benefits to Wessex and Mercia through trade is difficult to judge. There are occasional documentary references to trade between Scandinavians and Englishmen.¹⁰⁰ At least ten coins of the Danelaw have been found in Anglo-Saxon territory (in Kent (2), London (1), Hampshire (1), Somerset (1), Gloucestershire (1), Oxfordshire (2) and Buckinghamshire (2)), which is a substantial number, given that they were struck to a lower weight standard and would presumably have been prohibited from circulating. It is apparent that around 910 output at the mints of Canterbury and London pulled out of its previous decline and the mints returned to the prosperity they had enjoyed a generation earlier. Whether either or both economic changes in these two cities can be attributed substantially to the Scandinavians we cannot say, but they could well have been. It is hard to believe that the Scandinavians did not have a significant impact on their West-Saxon and Mercian neighbours over the forty or fifty years the kingdoms lasted.

Conclusions: the legacy

In this series of lectures more attention has been devoted to investigating the composition of the currency and the nature of monetary circulation than is normal in numismatic works, which tend to concentrate on aspects of the coinages actually produced in the region. The difference in these approaches is demonstrated by a comparison of Figs 7 and 8 below. The former shows the limited periods in which coins in the Danelaw were struck, between 870 and 954, and, with no apparent connection, those from Dublin and the Isle of Man a generation or two later, from c.995 to the mid-twelfth century. Fig. 8 presents a quite different and altogether busier picture, showing the means of exchange used in Scandinavian areas from the earliest settlement down to the end of the eleventh century. From this it can be seen that the commencement of striking at Dublin and in the Isle of Man was just a stage in a longer process of monetisation that did indeed overlap with and relate to the kingdoms in the Danelaw. The charts are necessarily schematic and simplify the situation in each region discussed previously. However, by juxtaposing these patterns of monetary development, common trends and marked differences can be seen.

The fact that in the ninth and early tenth centuries the Scandinavians produced coins in the Danelaw marked them out as different from those in other settlements in the British Isles and North Atlantic. The only other place where Scandinavians struck coins in this period was in Normandy, where the mint of Rouen continued to operate after Rollo's settlement of 911/12.¹⁰¹ Crucially, of course, that was the one other region that had a pre-existing system of coinage and coin use. Moesgaard sees the continuation of coinage under the Normans as a

⁹⁹ Mainman and Rogers 2004; Vince 2001.

¹⁰⁰ The commercial and social mechanisms of exchange across the frontiers are discussed in Kruse 2007.

¹⁰¹ Moesgaard 2007.

deliberate policy by Rollo to promote state formation and the recognition of Normandy within France, a policy reinforced by his son and successor William Longsword (c.927–42), who put his name on the coins as a deliberate act of propaganda. The same can be argued for the Danelaw kingdoms, but with the added element of their coins carrying overt Christian iconography and inscriptions to strengthen the case for acceptance of these states by rulers such as King Alfred and Charles the Simple, who actively promoted a policy of converting and baptising Scandinavian leaders whenever the opportunity arose.

However, a notable difference between the Danelaw and Normandy lies in the parallel use of a bullion economy. In Normandy, indeed in the whole of France, the Scandinavian practice of using silver by weight seems never to have got a foothold.¹⁰² The only French hoard with Scandinavian features is that from Saint-Pierre-des-Fleurs (départ. Eure) 2006/7, composed of five pieces of hacksilver and thirteen coin fragments, mainly Two-Line pennies of the Southern Danelaw.¹⁰³ This was evidently a purse taken from the Danelaw in the early or mid 890s, but whether in Normandy it fed into a low-key bullion exchange system must be doubtful. Why the great army and some subsequent settlers in the Danelaw should have engaged in bullion transactions, when many of the same men had been campaigning in France apparently without doing so, is a question to be pursued. It could be a matter of poor survival of evidence, but another possible explanation, hinted at by the choice of an Italian prototype for the East Anglian Temple type coinage of the 870s, is that an element of the great army had come directly to the Danelaw from Frisia where, as we have seen, a bullion economy was practiced in some areas.¹⁰⁴

In other parts of the British Isles the Scandinavians encountered very different conditions from those in the Danelaw or Normandy. There were no established mints for them to take over, and little local experience of using coinage. Even silver was in very short supply. The silver they brought to these regions seems from its metallic composition to have originated mainly in Scandinavia, rather than England or France, and these adventurers, turned settlers, also brought with them knowledge of the newly developing practice in Scandinavia of exchanging silver by weight as ingots, arm-rings, hacksilver and fragmentary coins. Fig. 8 shows how in several regions the bullion economy established in the ninth century gave way in the tenth to more complex arrangements, as the use of imported coinage developed into a form of natural coin economy, not enforced by the state, but encouraged by convenience and trust in the value of familiar coins. Initially this functioned as a dual economy, with exchange transactions being made alternatively in either bullion or counted coins. In several regions the bullion economy then died out leaving coinage as the standard means of payment. The kingdom of Dublin was the classic case here, moving rapidly in the 990s from a currency based on imported Anglo-Saxon pennies, to one dominated by a new Hiberno-Scandinavian coinage.

Perhaps the most impressive achievement represented in Fig. 8 is the column 'Ireland (other)', for this reflects the influence of the Scandinavians in disseminating to the rest of Ireland both a version of their monetary practice and large quantities of silver to be used with it. Why this should have been so effective in Ireland, but not in Wales or Scotland, probably stems from the degree of social and political development already present among the Irish, providing trade and other exchange networks into which the Scandinavians could tap. This in turn stimulated the Scandinavian towns of Dublin, Wexford, Waterford, Cork and Limerick to develop and thrive. The absence of Scandinavian towns in Wales and Scotland, and the failure of the silver economy to penetrate Welsh, Pictish and Scottish societies may in part be symptoms of a common cause.

¹⁰² Moesgaard 2006 discusses a number of finds from Brittany of tenth-century Danelaw coins reflecting closer links between the regions, but without implying they were used in a bullion economy.

¹⁰³ Cardon *et al.* 2007; Cardon *et al.* 2008. The contents are heavily pecked, but prior to this find only one pecked coin was known from the whole of France, and its provenance is somewhat uncertain; Moesgaard 2007, 117.

¹⁰⁴ See pp. 51–2 above.

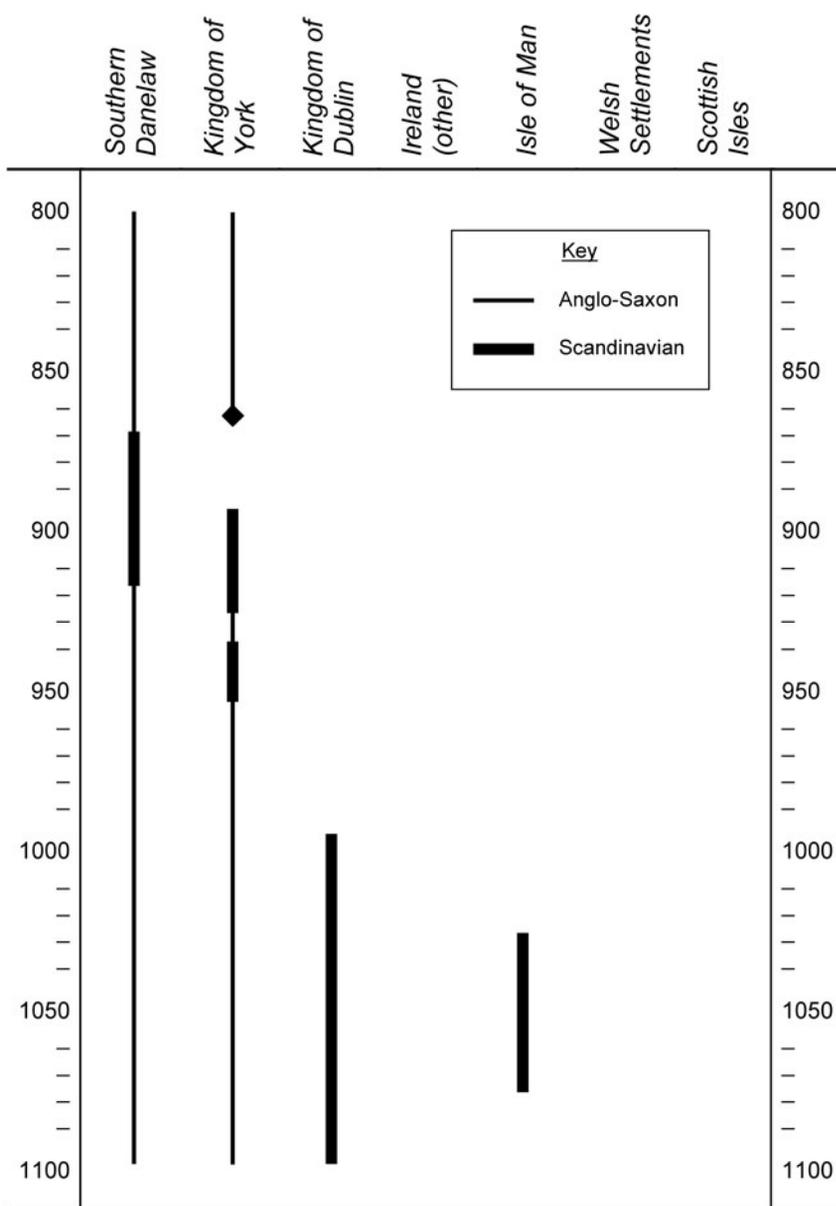


Fig. 7. Minting in the Scandinavian areas of the British Isles.

We have seen that within England the Scandinavians did not merely adopt and continue coin production in East Anglia, but they opened several new mints, most notably one at Lincoln which would become the second or third most productive mint in England. In doing this they may have been influenced by Alfred and Edward the Elder's policy of granting minting rights to a network of newly defended burhs. They also reopened the mint of York after some thirty years' closure, apparently providing it with some distinctive practices perhaps taken from Frankish mints, namely the use of dies with circular caps producing coins with irregular die-axes and an organisation headed by one principal moneyer, which persisted beyond the end of Scandinavian rule at York. In general, although the Anglo-Scandinavian coins are weak in the literacy of their inscriptions, technically they are well produced and economically they are pretty sound. The scale of minting at York and in the Southern Danelaw is also something by which we should be impressed, dramatically increasing over the thirty or forty years following the Scandinavian settlement in the Danelaw.

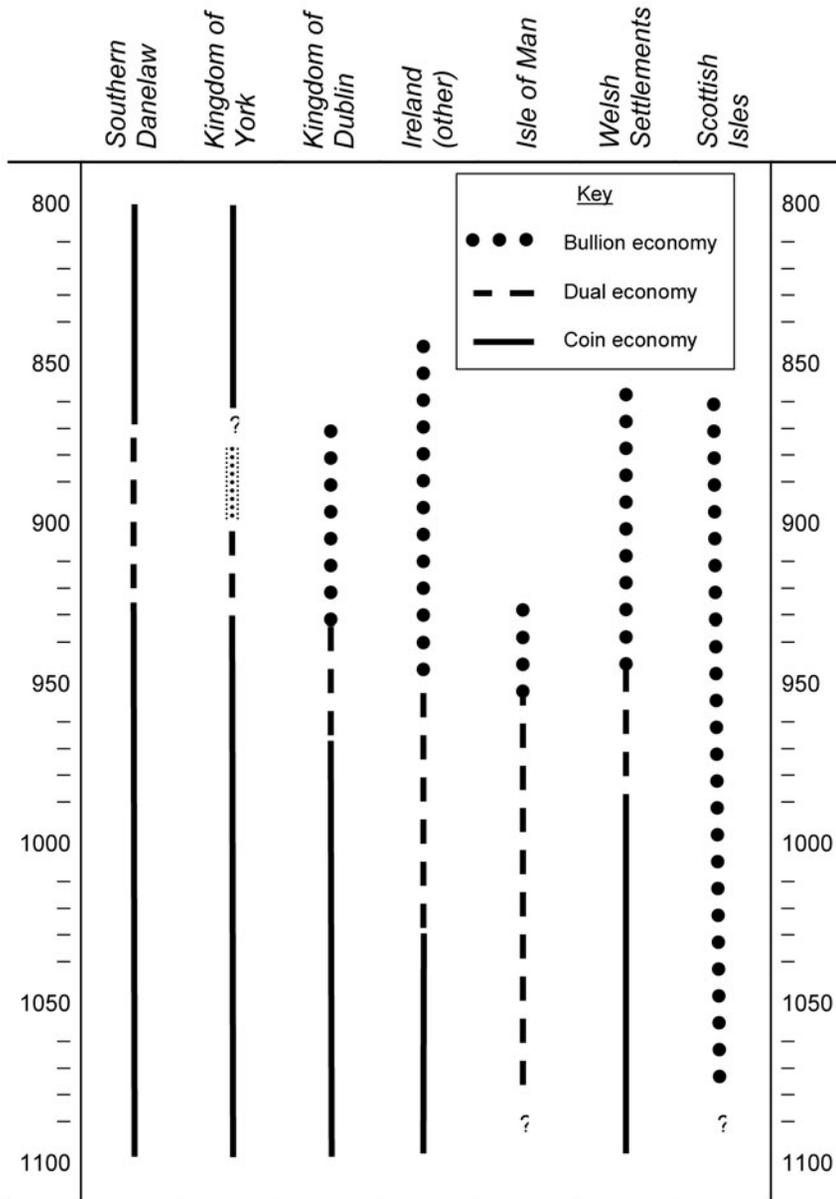


Fig. 8. Monetary Use in the Scandinavian areas of the British Isles.

So can we discern notable achievements and influences of the Scandinavians in the British Isles? Yes indeed, but was there a lasting legacy? The Anglo-Saxons were already proficient at producing coins to a high standard and managing a closed coin economy, and as the Branham hoard (dep. *c.*925) shows, after retaking East Anglia in 917, Edward the Elder moved quickly to withdraw the old currency, based the St Edmund coinage, and replace it with his own heavier Horizontal type.¹⁰⁵ By analogy, a similar process probably occurred at York after it was seized in 927, for Athelstan's new coinage there appears large enough to replace and remint the currency circulating in the city, and beyond. In the design and outward appearance of the coinage, the Scandinavian issues left no discernable legacy, but certain

¹⁰⁵ Blackburn 2006, 205–8. The process appears to have been effective in Suffolk, but Norfolk finds shown that for almost a decade distinct Scandinavian influence can be seen in the coinage produced in Edward's name probably at Norwich.

organisational and technical matters, such as the minting personnel, including a number from the Continent, and some coining techniques, did survive into the later tenth century. The development of fortified burhs and a concomitant network of regional mints prompted in Wessex and Mercia by the threat of the Vikings, and in the Danelaw by the Scandinavians' own initiative, did have an enduring influence on the pattern of minting down to the thirteenth century. However, perhaps the Scandinavians' most significant contribution within England lay in the general economy which they stimulated in the early tenth century through urban development, expanded craft production and trade. For the towns in the East Midlands, especially Lincoln, their prosperity continued well beyond the reconquest.

Elsewhere in the British Isles, we have seen that the Scandinavian monetary economy in the Isles of Man and Scotland had collapsed by the end of the eleventh century, incidentally coinciding with the European-wide shortage of silver that lasted until the third quarter of the twelfth century. In Wales, the minimal monetary circulation that had been achieved was rapidly subsumed by the progressive Norman invasion from the late 1060s and 1070s, as they opened mints and sought to establish an English currency system. In these regions the Scandinavian economies had run their course. Ireland was a different case, however, and the Scandinavians should be given credit for having introduced and developed an effective monetary system and currency that extended to much of the country through progressive stages over some three hundred years. This endured through the twelfth century, to be taken up and built upon by the Normans and their successors down to the present day. Indeed, this is the most tangible monetary legacy left by the Scandinavians in these islands.

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