

THE DUAL ECONOMY OF THE DANELAW THE HOWARD LINECAR MEMORIAL LECTURE 2001

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It was a great honour to have been invited to deliver the Linecar Lecture for 2001, but at the same time it seemed a truly daunting undertaking for one who is not a numismatist by training or profession. It is true, however, that I have devoted much of the last thirty years to researching the Viking-age silver hoards from Britain and Ireland, but always from the point of view of an archaeologist – an archaeologist who himself excavates not buried treasure, but the contents of museums and antiquarian archives. So I decided that a progress report on my hoard studies to date might form a suitable introduction to my paper – to set the scene for my chosen topic.¹

In truth, I came upon this subject by chance for, when I graduated from Cambridge in 1968, it was my idea that I should undertake research under the supervision of David Wilson, at University College London, on the pagan Norse graves of Scotland. But, at first, he would have none of this from someone hitherto unknown to him – someone whom he thought might be ‘just another Cambridge dilettante’! The true test would be for me to spend a preliminary year studying in Norway, and so I set off for the Universities of Bergen and Oslo.

In Bergen I had the good fortune to be taught by the late Egil Bakka, who introduced me to the study of Viking antiquities as no one else in Norway could have done at that time, before moving on to Oslo for the second semester. If 1968/69 was a strange year to find oneself in comparative northern isolation, detached for the greater part from the events of the ‘student revolution’, it was nevertheless an excellent one during which to be studying archaeology in Norway. For, in those days, a graduate student was given keys to museum stores and trusted to work there alone. Now, in Oslo for instance, even a professional archaeologist can expect to study only such objects as have been requested by him or her in advance of their visit.

In other words, it is no longer possible in the twenty-first century (for reasons that numismatists will readily appreciate) for a young person, as I was then, to gain the experience of handling large quantities of archaeological material at first hand, or of getting the opportunity to poke around the backs of shelves and drawers in search of unrecorded or unrecognised artefacts. I had the good fortune therefore to belong to one of the last generations of such students who were able to enjoy unrestricted access to archaeological material in major museums, including – in my case – gold and silver. There are many in these museums to whom I owe a great debt of gratitude – and varied have been my adventures with showcases, safes and alarm systems which are perhaps best recalled on some other occasion!

When at the Bergen Museum, I was first required by Egil Bakka to master the basics of Viking weapons, before being moved on to brooches in their many varieties. Requiring, at that time, some material to work on for the purpose of submitting an essay for the Wallenberg Prize of the University of Cambridge, my attention was drawn to one particular group of brooches that derives its form from the so-called ‘thistle-brooch’ of ninth-century Irish origin – a brooch type that achieved its most florid expression during the tenth century after its adoption by the Viking settlers in the Irish Sea region. The ‘thistle-brooch’ was elaborated in order to display the greatest possible quantity of silver, for obvious reasons of prestige – and this newly-acquired fashion was carried back to Norway. There it was not only produced in silver, but was also imitated by those without access to sufficient of the precious metal in bronze and even iron; these copies were, however,

¹ This paper retains much of the nature of my lecture as delivered, on 23 October 2001, but with various improvements suggested by Marion Archibald, Mark Blackburn and Hugh Pagan, both in discussion and in the form of comments on my draft text for publication which was also read for me by Sir David Wilson: I am most grateful to all of them for their help and advice, but any remaining misunderstandings or errors are naturally my own. Notes and references have been kept to the necessary minimum.

often tinned so as to give them the appearance of their silver prototypes. At the same time, the silver brooches were themselves available to be cut up into fragments as required to make small payments, by weight, in the bullion economy in which the greater part of Scandinavia operated during the ninth and tenth centuries.²

This new interest in silver brooches, and thus in the hoards of which many form part, brought about a change of plan on my return to UCL. Viking-age silver became the subject of my Ph.D. research, still – most fortunately for me – supervised by the then Professor David Wilson, although the thesis was never to be finished. This was in part at any rate because I was fortunate to be appointed to my first post after two years – as an Assistant Lecturer at University College Dublin, where I was able to commence serious research on the Irish hoard material.

Viking-age silver hoards from Britain and Ireland: progress to publication

To live and work in Ireland at the beginning of the 1970s was to experience the ‘Troubles’, including the occasion of standing in the crowd, in Merrion Square, while the British Embassy was being burned down in the aftermath of ‘Bloody Sunday’. Moving in these shifting political spheres was the late Michael Dolley, then of the Queen’s University of Belfast. Dolley of course dominated Irish hoard studies, and I consider myself fortunate indeed to have benefited from that, most generous, side of his character which put the free exchange of information first and foremost in academic life. There were of course occasional schemes and conspiracies, including an unfortunate occasion in 1976 when he inveigled me into meeting, in his company, the notorious metal-detecting priests from Navan in order to view some of their illegal finds which happened to include two silver hoards.³ This did not go down at all well with the authorities in Dublin who somehow received an anonymous report of our clerical tea-party!

Although the Norwegian archaeologist, Johannes Bøe, had catalogued the Viking-age silver from Ireland in 1926, the eventual publication (in 1940) really only amounted to a preliminary listing of this material.⁴ The field remained wide open for more detailed research and for some attempt at its analysis. It soon became evident that the antiquarian papers held by the Royal Irish Academy offered a mine of information for the re-provenancing of material which had passed through the hands of nineteenth-century dealers and collectors, as well as for finds no longer known to exist. This research brought considerable new light to bear on our knowledge of the non-numismatic material in particular, given that such work had previously been focussed, under Dolley’s energetic aegis, on coin hoards and the coins themselves. Its main results were summarised in my paper on ‘The Viking-age silver hoards of Ireland’, delivered to the Seventh Viking Congress, held in Dublin in 1973.⁵

The study of the Irish hoards and single-finds of Viking-age gold and silver is now happily in the hands of John Sheehan, at University College Cork, who has written much already on this subject – and has his corpus volume in preparation.

Well before I returned to London, in 1973, to embark upon my academic career at UCL, I had not surprisingly come to realise the exceptional importance of the great Cuerdale hoard, found in 1840, near Preston in Lancashire, for not only the research on Viking-age silver artefacts in which I was then primarily engaged, but also for the study of the circulation of bullion in the Irish Sea region during the period leading up to its deposition at the beginning of the tenth century (c.905). Once again based in London, I was able to take the opportunity of working on the mass of unpub-

² The following three papers derive from these brooch studies: ‘Some Viking-age penannular brooches from Scotland and the origins of the “thistle-brooch”’, in A. O’Connor and D.V. Clarke (eds), *From the Stone Age to the ‘Forty-Five* (Edinburgh, 1983), pp. 310–23; ‘Western influences on penannular brooches and ringed pins’, in G. Arwidsson, *Birka II:1. Systematische Analysen der Gräberfunde* (Stockholm, 1984), pp. 31–8; and ‘Western penannular brooches and their Viking Age copies in Norway: a new classification’, in J. Knirk (ed.), *Proceedings of the Tenth Viking Congress: Larkollen, Norway, 1985* (Oslo, 1987), pp. 231–46.

³ These two coinless hoards, from crannogs near Miltown, Co. Cavan, and near Oldcastle, Co. Meath, are now in the possession of the National Museum of Ireland, although they remain unpublished.

⁴ Johs. Bøe, ‘Norse antiquities in Ireland’, in H. Shetelig (ed.), *Viking Antiquities in Great Britain and Ireland* (Oslo, 1940), Part III, pp. 99–136.

⁵ ‘The Viking-age silver hoards of Ireland’, in B. Almqvist and D. Greene (eds), *Proceedings of the Seventh Viking Congress, Dublin, 1973* (Dublin, 1976), pp. 39–74.

lished manuscript material relating to its discovery and dispersal contained in the archives of the Duchy of Lancaster, as well as getting to grips with the extant non-numismatic material from the hoard itself. This has been a major undertaking given that it amounts to nearly 1,200 pieces, now in twelve different collections, of which fewer than a couple of hundred have ever been published (and those mostly back in 1847).⁶

To have been working on the Cuerdale hoard during the late 1970s and early 1980s naturally brought me into close collaboration with the late Christopher Blunt who showed me every kindness and hospitality in this connection. Our mutual interest in the intricacies of antiquarian records and sale-catalogues resulted in some memorable weekends spent at Ramsbury.

The first fruits of my research on the Cuerdale hoard were extracted from me by Michael Metcalf for the Tenth Oxford Symposium on Coinage and Monetary History, that on *Coinage in Ninth-Century Northumbria*, which was published in 1987,⁷ shortly before Susan Kruse, my then Ph.D. student, completed her thesis on the *Viking Age Silver Ingots from England and Wales and their Economic Implications* (1988). Not long afterwards, in 1990, I organised an exhibition for Liverpool Museum, entitled *A Silver Saga: Viking Treasure from the North West*, in celebration of the 150th anniversary of the hoard's discovery. The associated conference gave rise to a volume of proceedings published in 1992, but nothing much new has since been heard from me on the subject of Cuerdale.⁸ However, my mission was never abandoned, the material having merely been laid down while other work was in progress, and it is to be hoped that in the meantime that it may have matured gradually and that the final outcome may prove all the better for the delay.

In fact, I have been able to spend much time recently back at work on the preparation of my long 'forthcoming' volume on *The Cuerdale Hoard and related Viking-age Silver and Gold, from Britain and Ireland, in the British Museum*, which should finally provide the first full catalogue of all this non-numismatic material,⁹ much of which, besides Cuerdale, was acquired during the nineteenth century and has never appeared in print – or at least not to anything approaching modern standards of publication.

The work undertaken by me during my fallow Cuerdale period, on the archaeology of the Viking-age silver hoards from Britain and Ireland, resulted at least in the publication of my catalogue, for the National Museums of Scotland, of *The Viking-Age Gold and Silver of Scotland (AD 850–1100)*, in 1995 – a project which had its roots in a Chalmers Jervise Prize Essay for the Society of Antiquaries of Scotland, twenty years earlier.¹⁰

The occasion of the Ninth Viking Congress held on the Isle of Man, in 1981, provided me with the opportunity of bringing together the Manx hoard material.¹¹ This was a somewhat tricky undertaking because it was the period of Dolley's life when he had developed into something of a Manx nationalist, and his interpretations of several finds from the Island were somewhat coloured by this factor. I therefore tried hard to steer a careful line of comment and criticism, not wishing to antagonise my old mentor. This is work to be revisited, as it will be in part for my British Museum catalogue, but more particularly I look forward to collaborating with Kristen Bornholdt in her current re-evaluation and completion of Dolley's pioneering work on the Manx hoards and the evidence for there having been a tenth-century Hiberno-Manx mint.¹²

⁶ E. Hawkins, 'An account of coins and treasure found in Cuerdale', *Archaeological Journal* 4 (1847), 1–48 and 189–99; A. Bjørn and H. Shetelig, 'Viking antiquities in England', in Shetelig (ed.), Part IV, figs 9–12.

⁷ 'Some archaeological reflections on the Cuerdale hoard', in D.M. Metcalf (ed.), *Coinage in Ninth-Century Northumbria* (British Archaeological Reports, British Series 180, 1987), pp. 329–44.

⁸ 'The Cuerdale hoard: a Viking and Victorian treasure' and 'The Cuerdale hoard: comparisons and context', in J. Graham-Campbell (ed.), *Viking Treasure from the North West: The Cuerdale Hoard in its Context* (National Museums and Galleries on Merseyside Occasional Papers, Liverpool Museum 5, 1992), pp. 1–14 and 107–15; but see also now 'The northern hoards: from Cuerdale to Bossall/Flaxton', in N.J. Higham and D.H. Hill (eds), *Edward the Elder, 899–924* (London, 2001), pp. 212–29.

⁹ The coins, on the other hand, appear in due course in several of the British Museum's parallel volumes to the *SCBI* series.

¹⁰ 'The Viking-age silver and gold hoards of Scandinavian character from Scotland', *Proceedings of the Society of Antiquaries of Scotland* 107 (1975–6), 114–35.

¹¹ 'The Viking-age silver hoards of the Isle of Man', in C. Fell *et al.* (eds), *The Viking Age in the Isle of Man* (London, 1983), pp. 53–80.

¹² K. Bornholdt, 'Myth or mint? The evidence for a Viking-age coinage from the Isle of Man', in P.J. Davcy (ed.), *Recent Archaeological Research on the Isle of Man* (British Archaeological Reports, British Series 278, 1999), pp. 199–218.

As far as the few Viking-age hoards from Wales are concerned, there is of course George Boon's (1986) volume to turn to,¹³ although Mark Redknapp's recent excavations at Llanbedrgoch on Anglesey, in collaboration with the metal-detecting activities of local enthusiasts, have brought to light coins, hack-silver and weights that form an important new body of evidence for the nature of the silver economy in the Irish Sea region during that part of the Viking Age which saw the deposition of the Cuerdale hoard itself.¹⁴

Finally, there is the matter of the 'Viking-type' mixed hoards from north-west England and the northern Danelaw. I have discussed the Bossall/Flaxton hoard in so far as it is now possible from an archaeological standpoint, in the (1993) *Festschrift* for Philip Rahtz,¹⁵ and the other major Yorkshire mixed hoard – that from Goldsborough – will, for obvious reasons, find its place in my British Museum catalogue.¹⁶ Of the other northern finds, it seems to me that there is one above all that is in need of re-publication: the Castle Esplanade, Chester (1950) hoard, deposited c.965. Its substantial non-numismatic contents (146 pieces, the majority of which are ingots) have not received more than cursory discussion in print since they were first published by the Roman archaeologist, the late Graham Webster, in 1953.¹⁷ It is my belief, however, that this Chester hoard would now benefit from a total re-evaluation by both Viking-age archaeologists and numismatists. I do, however, understand that there will be an up-to-date discussion of the hoard from a numismatic point of view in the introduction to the forthcoming second *SCBI* volume on the Anglo-Saxon and Norman coins in the Grosvenor Museum, Chester.

The dual economy of the Danelaw

Turning now to the matter of the dual economy of the Danelaw (or at any rate to its beginnings), I am clearly stepping into the shoes of Mark Blackburn who has been developing this particular topic during the last few years. Anything that I may have to contribute is genuinely indebted to him, both for sending me copies of papers in progress to publication and for news and illustrations of recent discoveries. That I have chosen to concentrate on the bullion aspects of this subject arises naturally enough from my background, as described above. How may my own data-collection and analysis of ornaments and bullion contribute to the development of his own research? So, let me begin with a summary of Blackburn's current hypothesis in his own words:¹⁸

'The coinage is one of the few direct contemporary sources of evidence from the 50 or so years of Scandinavian rule over the Danelaw (in the period 880–927). It indicates how in this formative period before the development of a distinctive Anglo-Scandinavian culture, Scandinavian practices co-existed or vied with local Anglian ones. Thus one sees two distinct economies in operation: on the one hand the new vibrant Danelaw coinages – well managed despite their poor literacy – were seeking to establish a classic West European managed currency, while on the other a typical North European bullion economy persisted in some sections of the community even beyond the reconquest of the region by Edward the Elder and Athelstan.'

¹³ G.C. Boon, *Welsh Hoards, 1979–1981* (Cardiff, 1986).

¹⁴ Summarised in M. Redknapp, *Vikings in Wales: An Archaeological Quest* (Cardiff, 2000).

¹⁵ 'A "vital" Yorkshire Viking hoard revisited', in M. Carver (ed.), *In Search of Cult: Archaeological Investigations in Honour of Philip Rahtz* (University of York Archaeological Papers, Woodbridge, 1993), pp. 79–84.

¹⁶ In the meantime, for brief accounts, see Graham-Campbell, as in n. 8 (1992), p. 112, fig. 9.5, and (2001), pp. 217–18.

¹⁷ G. Webster, 'A Saxon treasure hoard found at Chester, 1950', *Antiquaries Journal* 33 (1953), 22–32; see also C.N. Moore, *Coin Hoards 2* (1976), 113, no. 444. The silver content of sixty-two of the Chester ingots has, however, been analysed and discussed by S.E. Kruse and J. Tate, 'XRF analyses of Viking Age silver ingots', *Proceedings of the Society of Antiquaries of Scotland* 122 (1992), 295–328, esp. pp. 318–19 and 321–2.

¹⁸ Quoted from the abstract of his paper on 'The monetary economy in the Danelaw under Scandinavian control, 880–927', prepared for a joint British Museum/Institute of Archaeology, UCL, Symposium (May, 2000) on the 'Silver Economy in the Viking Age'. Also discussed by him in his papers, 'Expansion and control: aspects of Anglo-Scandinavian minting south of the Humber', in J. Graham-Campbell *et al.* (eds), *Vikings and the Danelaw* (Oxford, 2001), pp. 125–42, esp. pp. 134–5, and 'The coinage of Scandinavian York', in R. Hall (ed.), *Anglo-Scandinavian York* (York, forthcoming).

Before turning to the evidence for the bullion economy, it is worth pointing out, from an archaeological and art-historical perspective, that the statement that this was happening 'before the development of a distinctive Anglo-Scandinavian culture', might be modified to 'during the development' because it is during this same period that we can, indeed, recognise just such a development taking place in the widespread adoption in the Northern Danelaw of carved stone monuments, as memorials to local landholders and others, as also in the adaptation of Anglo-Saxon ornamental metalwork, such as disc brooches and strap-ends, to Scandinavian taste.¹⁹

One of the most intriguing aspects of research into the use of bullion in ninth- and tenth-century England in recent years has been the development of the study of test-marks on coins (largely by Marion Archibald),²⁰ and those on ornaments, ingots and hack-silver by myself. The testing of coins was by bending or by pecking the flat surface, with edge-cutting only rarely encountered (although cutting on a ridge created by bending a coin is quite usual), whereas the testing of non-numismatic silver was normally by edge-cutting, which I refer to as 'nicking'. The distinction is, of course, that pecking is undertaken with the point of a blade, which raises 'a small sprue of silver', whereas nicking involves making a small cut with the blade itself.²¹ It is a matter of ongoing concern for numismatists and archaeologists alike to attempt to resolve the questions as to why, when and where this concern with silver testing was initiated, as well as the different techniques employed.

Leaving aside the existence of occasional test-marks on coin-finds in England from the seventh and early eighth centuries – and, indeed, those on the angled edges of the larger of the two ingots in the Sutton Hoo purse – as detailed in print by Archibald,²² we need to note her observation that:²³

'In the century following the restoration of a fine-silver coinage in the form of the broader, thinner, pennies early in the reign of Offa (757–96) hoard coins and site finds from the British Isles continue to be flat and unmarked. No coin hoard deposited in the late eighth century in England has been recorded, but coins of this period, plausibly associated with a late-sixteenth or early-seventeenth century find, which reached the British Museum via the Cotton collection, do not display any test-marks.'

There is still no evidence for any regular use of test-marks on coins in England by the mid-ninth century, for as she notes:²⁴

'The Middle Temple hoard, whose non-recovery is convincingly explained as a consequence of the Danish descent on London in 842, is composed of flat, unpecked coins and presumptively belonged to one of its citizens.'

As yet therefore there are no signs of bending or pecking; but what of edge-cutting or nicking? Here the archaeologist has something to offer because of one small, but vital piece of evidence from the hoard found at Kirkoswald, in Cumberland. The coins from which consist exclusively of Northumbrian stycas with the result that its date of deposition can only be established, somewhat generally, as the 850s or 860s. But, in addition to its coins, it contains one exceptionally fine, filigree-decorated silver ornament.

In 1990, I pointed out that this magnificent trefoil ornament²⁵

¹⁹ For a general introduction to Anglo-Scandinavian sculpture, see R.N. Bailey, *Viking Age Sculpture in Northern England* (London, 1980); and for aspects of the ornamental metalwork, see C. Paterson, 'The finds', in K. Leahy and C. Paterson, 'New light on the Viking presence in Lincolnshire: the artefactual evidence', in Graham-Campbell *et al.* (eds), as in n. 18, pp. 181–202, at pp. 191–9.

²⁰ M.M. Archibald, 'Pecking and bending: the evidence of British finds', in K. Jonsson and B. Malmer (eds), *Sigtuna Papers. Proceedings of the Sigtuna Symposium on Viking-Age Coinage, 1–4 June 1989* (Stockholm, 1990), pp. 11–24.

²¹ I am grateful to Mark Blackburn for pointing out to me that numismatists are accustomed to using the term 'nick' in the sense of 'groove', for deliberate scratches on the surface of a coin (e.g. in the Swedish *Corpus Nummorum Saeculorum* series), as opposed to my usage of 'nick' in the sense of 'slit', for which see 'Nicking and pecking (an excursus)', in J. Graham-Campbell, *The Viking-Age Gold and Silver of Scotland (AD 850–1100)* (Edinburgh, 1995), p. 33.

²² Archibald, as in n. 20, p. 11.

²³ Archibald, as in n. 20, p. 12; in connection with Offa hoards, I am grateful to Marion Archibald for the information that 'the coins coming up at Aiskew, Yorks., are clearly a hoard – no pecks'.

²⁴ Archibald, as in n. 20, p. 12.

²⁵ Graham-Campbell, as in n. 8, p. 107.

'contains within one of its armpits a deep nick in the edge of its base-plate, a cut characteristic of the type used in Scandinavian silver-testing. This feature ... indicates that the object had fallen into Norse hands so that it is reasonable to interpret Kirkoswald as a 'Viking' hoard, although consisting solely of Anglo-Saxon material.'

This interpretation is necessarily speculative, but the fact remains that there is the one deep, angled, edge-nick – of classic type.

Moving chronologically forwards, but returning southwards, there is relevant hoard evidence that can, with varying degrees of confidence, be associated with the activities of the Danish army, which had invaded England in 865, in the years between 870 and 875.

A convenient starting-point would have been 870–1 when the so-called 'Great Army' used 'the royal vill' of Reading as their winter-camp, if only the coins from the hoard seemingly buried then, 'in a coffin' in St Mary's churchyard, were available for study. So we must follow the Army to London, which it entered in the autumn of 871 to spend the winter, when it received immense tribute from the Anglo-Saxons, at least partly in cash. Several hoards seem to have been deposited in this connection, during the year 871–2, but there are two substantial finds deserving particular attention: Gravesend, on the Kent coast (buried perhaps in 871); and Croydon, Surrey (perhaps from 872). Both of these hoards were amongst those discussed by Nicholas Brooks and myself in our joint paper for the *Dolley Festschrift*, back in 1986, but which we have recently updated for inclusion in a volume of Brooks' collected papers which was published in 2000.²⁶

Our (unchanged) conclusion was that the Gravesend hoard is problematic as to 'whether it be deemed a Viking or an English treasure', for its only piece of metalwork other than coins is a silver pendant cross, with central glass setting, of Anglo-Saxon manufacture; it has some scratched decoration, but shows no definite sign of test-marks. The composition of its coins was used by us to argue against it having been a local currency hoard, for these consist of a mixture of pennies from Mercia (428), Wessex (61) and East Anglia (49), together with a single denier of Louis the Pious – a mixture that could represent the accumulated treasure of a member of the Great Army, together with a single piece of loot. On the other hand, as Hugh Pagan has pointed out to me (in correspondence), it could equally well have been a local currency hoard, given that all the coins 'are likely to have been struck within easy range of the Thames estuary ... Bearing in mind the likelihood that Gravesend was at that date a trading port, to which vessels from London would have put in, I see no reason at all to suppose that whoever put the hoard together would necessarily have been a Viking'.

There is, however, one additional argument for it possibly having been a Viking treasure, given Archibald's observation that 'its coins have been systematically bent, if only slightly', with the inference that this hoard 'of tested coins had passed through Danish hands'.²⁷ Unless the slight bending was in this case somehow accidental, rather than deliberate, it is of particular significance because it would then mean that Gravesend is the earliest such Viking-age hoard on record from England.

The Croydon hoard presents an even more interesting picture, given that it is the earliest Viking-age hoard on record from England to contain, in addition to some 250 coins, three complete ingots and five pieces of hack-silver (one of which is a cut ingot fragment). The coins consist of a similar mixture to Gravesend, those recorded being from Mercia (94), Wessex (56) and East Anglia (24), together with seven Carolingian deniers; in addition, however, there are three Kufic dirhems. On numismatic grounds therefore, this has every appearance of having been a truly Viking treasure, an interpretation supported by the presence of the ingots, together with hacksilver of Scandinavian origin (three of the fragments having been cut from spiral-rings, most

²⁶ N.P. Brooks and J.A. Graham-Campbell, 'Reflections on the Viking-age silver hoard from Croydon, Surrey', in M.A.S. Blackburn (ed.), *Anglo-Saxon Monetary History: Essays in Memory of Michael Dolley* (Leicester, 1986), pp. 91–110; reprinted with revisions and a new appendix by J. Graham-Campbell, 'On the non-numismatic silver in the Croydon (Whitehorse) hoard, Surrey', in N. Brooks, *Communities and Warfare, 700–1400* (London, 2000), pp. 69–92. Detailed page references to the two versions of this article are not given for the discussion that follows.

²⁷ Archibald, as in n. 20, p. 14.

likely of Danish manufacture – in imitation of those imported into the Baltic region from Russia – with the arm-ring fragment representing a Danish prototype for what was to develop in Ireland into the distinctive Hiberno-Viking arm-ring).

According to Archibald: 'The English Lunette pennies and Carolingian deniers present are flat and without test-marks but the Kufic dirhems, no longer extant but the earliest known from Britain, were edge-cut.'²⁸ On the other hand, Blackburn has pointed out 'that the single Croydon denier now extant has two fine parallel scratches on the reverse face, which may be Viking test-marks'.²⁹ Be that as it may, the edge-cutting of the Kufic dirhems is duplicated on some of the hack-silver, although interestingly enough not on any of the three complete ingots. This suggests that they could well have been late additions to this treasure, particularly given that the one ingot fragment has a dozen nicks and the flat arm-ring fragment has ten.

It would not have been surprising therefore if the result of their silver analysis had been to demonstrate that the complete ingots had been made from English pennies, but not apparently so. Susan Kruse has commented that: 'the general high levels of silver in the Croydon ingots make these alloys distinct from those of contemporary Anglo-Saxon coins' (that is to say the silver content of the ingots falls between 85 and 92%). It is also of interest to note that the larger of the two ingots now in the Ashmolean has an unusually high gold and tin content, one explanation for which might of course be that its source was silver-gilt ornamental metalwork.³⁰

The evidence of the Croydon hoard thus demonstrates a Danish background for the edge-cutting of coins and the related nicking of hack-silver, operating within a bullion economy, with the Gravesend hoard perhaps providing the earliest evidence in England for the use of bending to test coin – but without a peck in sight!

On leaving London, the Great Army moved north to York, but for a winter-camp its leaders chose to leave Northumbria for Torksey in Lincolnshire. The use of Torksey for this winter-camp in 872–3 brings its first mention in written sources, but there can be no doubt that this site was chosen because of its key strategic location. Torksey is located on the River Trent, on an important trade-route controlling access to Lincoln, some 15 km to the south-east. In consequence, as a multi-functional site, situated on a boundary, Torksey was an obvious choice for a Viking base.

By May 2000 Mark Blackburn knew of at least fifty early medieval coins from Torksey resulting from the activity of metal-detectorists working across several different fields.³¹ A few of these are eighth- and early ninth-century finds, indicative of the pre-Viking activity at Torksey, but the majority date from the mid-ninth century, including five silver pennies from 862–75. Most interestingly, there are thirteen cut fragments of Kufic dirhems, some of which are tested by 'nicking' (but not by pecking).³² These come from across three metal-detected fields and so represent a series of different losses – more than are known from any such site in Britain. As a result, Blackburn suggests that they will have been in active use at Torksey during the period of its Viking occupation, alongside a selection of gold and silver bullion (to be considered below), in connection with a large number of lead and copper-alloy weights, including a remarkable concentration of the polyhedral type well known from Scandinavia.

The study of Viking-age weights may be left to others,³³ but it is relevant to observe that the frequency with which they are being discovered by metal-detectorists quite widely within the Danelaw is to some extent matched in Denmark where, until the advent of metal-detecting, finds of weights had been largely confined to proto-urban or urban sites, such as Hedeby. It is also

²⁸ Archibald, as in n. 20, p. 14.

²⁹ Quoted from Brooks and Graham-Campbell, as in n. 26, note 49.

³⁰ Kruse and Tate, as in n. 17, pp. 302–4.

³¹ For Torksey, its coins, weights and bullion, see M. Blackburn, 'Finds from the Anglo-Scandinavian site of Torksey, Lincolnshire', in B. Paszkiewicz (ed.), *Moneta Medievalis: studia numizmatyczne i historyczne ofiarowane Profesorowi Stanisławowi Suchodolskiemu w 65. rocznicę urodzin* (Warsaw, 2002), pp. 89–101; and M. Blackburn, 'Gold in England during the Viking Age', in J. Graham-Campbell and G. Williams (eds), *Silver Economy in the Viking Age*, forthcoming.

³² 'Nicking' is used here in the numismatic sense, as described in n. 21.

³³ S.E. Kruse, 'Late Saxon balances and weights from England', *Medieval Archaeology* 36 (1992), 67–95; M.M. Archibald, 'Two ninth-century Viking weights found near Kingston, Dorset', *BNJ* 68 (1998), 11–20; G. Williams, 'Anglo-Saxon and Viking coin weights', *BNJ* 69 (1999), 19–36.

worth pointing out that one should not be too quick to assume that the presence of weights on a site is necessarily indicative of buying and selling in a bullion economy, given that weights would also have been needed by metalworkers to control their alloys, just as the production of ingots was an essential pre-requisite for the manufacture of various types of prestige ornaments in the form of rings made from rods or from flat bands.

Some of the Torksey bullion has been described by Blackburn as follows:

'Torksey has produced several pieces of bullion of typical Viking fabric. Two small cut terminals of silver ingots and a cut section of gold rod found close together are evidently an associated group (now in the Fitzwilliam Museum). A group of nine larger pieces of cut ingots and ornaments, including two in gold, were not reported before being dispersed in the trade in 1995. No details are known of their find circumstances, but it seems likely that they represent all or part of a hoard. Independently recorded from Torksey, and perhaps separate finds, are a cut piece from a spectacular Irish decorated brooch of the 8th/9th century, and a portion of a decorated gilt-bronze pinhead.'

Since this was written, the Fitzwilliam has acquired some further items of Torksey bullion, including another gold rod fragment and a piece cut from a heavy silver arm-ring of polygonal section.

I am most grateful to Kevin Leahy of Scunthorpe Museum for further details concerning the hypothetical hoard of nine pieces, which he was in fact able to photograph in 1995. This is a particularly interesting group from my point of view because its silver component is strikingly similar to the bullion component of the Croydon hoard, buried perhaps only some months earlier.

The Torksey silver bullion consists of: one complete ingot, four ingot terminal fragments, a piece of spiral ring and a piece of a prototype Hiberno-Viking arm-ring. A truly remarkable coincidence one might have thought, if were not for the documented movements of the Great Army. But at Torksey, there is the added bonus of a terminal cut from a gold ingot and a fragment of gold arm-ring of octagonal section, bringing the total of Viking-age gold fragments now known from Torksey to four. Between Kevin Leahy and Mark Blackburn, I think I know of three or four further silver ingot fragments with Torksey provenances, thus bringing the current total of silver pieces (other than coins) to sixteen or seventeen. Without personal examination, I am obviously unable to comment on test-marks, other than to observe that one ingot fragment drawn by Leahy has clearly been nicked, recalling the tested dirhems – and thus, once again, the similarity between the Croydon and Torksey finds in the testing of both dirhems and hack-silver.

By way of conclusion about the Torksey material, Blackburn has written that: 'These finds of bullion are quite exceptional, for such ingots and cut metalwork are only rarely found in the Southern Danelaw.' The Torksey finds are indeed 'quite exceptional', but the Danelaw material is ever increasing, both South and North.

Before following in the Great Army's footsteps from Torksey to Repton, there is one further category of fragmentary metalwork, which has been metal-detected at Torksey, that needs to be mentioned, consisting of broken pieces of silver-gilt and gilt-bronze ornaments (the most diagnostic of which are of eighth-century Anglo-Saxon workmanship), all clearly destined for the crucible. Thus, there is evidence for fine metalworking having taken place at Torksey, a fact that should recall my previous *caveat* that weights and ingots can be indicative of metalworking activity as well as of a bullion economy.

Towards the end of 873, having exacted tribute from the Mercians, the Great Army moved westwards to Repton, in Derbyshire, where they defeated King Burgred and established themselves for the winter in the monastic buildings, throwing up a rampart that incorporated the Anglo-Saxon church as its gatehouse. This we know of from the Biddles' remarkably productive excavations that also revealed pagan Scandinavian graves attributable to the period of the 873–4 winter-camp, most notably the well-known mass-burial, in what is now the Vicarage Garden, which produced five pennies.³⁴ A further five pennies were found in Grave 529, adjacent to the

³⁴ See now, M. Biddle and B. Kjolbye-Biddle, 'Repton and the "great heathen army", 873–4', in Graham-Campbell *et al.* (eds), as in n. 18, pp. 45–96.

church and Archibald reports that these 'two small groups of Lunette pennies and cut halfpennies [are] despite their Viking context ... flat and not pecked',³⁵ despite the poor quality of their silver (or perhaps because of it?).

There are, naturally enough, no equivalent finds of Kufic dirhems, ingots and hack-silver from Repton to those from Torksey because very different areas of these two winter-camps have been investigated (and in different ways). But what the Repton excavations have demonstrated is not just the lack of test-marking on two distinct groups of Anglo-Saxon coins, but something of the manner in which members of the Great Army might put their gold and silver to use. For, along with the coins in Grave 529, there was deposited a gold finger-ring, making it the earliest Viking hoard from Britain to contain a complete Scandinavian-style ornament.

In working towards the completion of my British Museum catalogue, I have been endeavouring to list all the Scandinavian-style gold finger-rings now known from England and have reached the unexpected total (yet to be confirmed) of thirty-eight. By 'Scandinavian style', in this context, I mean those gold finger-rings made from twisted or plaited rods, together with those consisting of bands with stamped ornament, for such can be readily differentiated from the gold finger-rings favoured by the Anglo-Saxon aristocracy during the mid-ninth century. Now, it is certainly true that many of my thirty-eight, or so, rings found in England do, in fact, date from the Late Viking Period because, or so it seems to me, the wearing of elaborate gold finger-rings constructed from plaited (as opposed to twisted) rods was a fashion introduced from Denmark during the reign of Cnut (or thereabouts), even if the simpler twisted variety continued in use until the twelfth century.³⁶

Returning to Repton, the Viking warrior burial known as Grave 511 contained a silver Thor's hammer pendant. Until recently, the only such definite Thor's hammer known from England was that which formed part of the Cuerdale hoard,³⁷ but once again listing for the British Museum catalogue I find that no fewer than eight examples have now been recorded, of which over half have been found in the Southern Danelaw.

So let us consider the Danelaw distribution of gold ingots and gold ornament fragments.³⁸ We have already seen how at Torksey four pieces of hack-gold have been recorded, in the form of three ring fragments and the cut terminal of an ingot. As Blackburn has observed, there is only one complete, Viking-age, gold ingot known from a coin-dated hoard in Britain and Ireland: that is the example from the hoard deposited on Iona, most probably in 986. There is also, from the Hebrides, a gold hoard that is perhaps more relevant to the Torksey material in that it consists, not only of six and a half finger-rings, but also two ingot terminal fragments and a piece of gold rod. I have interpreted this as 'the stock-in-trade of a goldsmith', and so I wonder very much whether the manufacture of gold finger-rings might not have been one of the activities carried out at Torksey.

As far as the current distribution of gold ingots known from England is concerned, there is inevitably a problem, particularly if they are single-finds, of deciding their date. But, for now, I propose to take an all-inclusive interpretation of this material and suppose that all such finds (until proved otherwise) are indeed of Viking-age date. So, in addition to the Torksey fragment, we can list both a complete ingot recently excavated in Norwich and another complete ingot that is a single-find from Fenstanton in Norfolk, as well as a fragment from near Gainsborough in Lincolnshire. In addition, there is one further fragment with at least a claim to be of Viking-age date: from Swavesey, in Cambridgeshire.

So, surprisingly enough, all the finds so far known of potentially Viking-age gold ingots (and their fragments) are from the Southern Danelaw. The situation with regards to single-finds of silver ingots and hack-silver is inevitably more complicated – and certainly more balanced.

³⁵ Archibald, as in n. 20, p. 14.

³⁶ 'The gold finger-ring from a burial in St Aldate's Street, Oxford', *Oxoniensia* 53 (1983), 263–6.

³⁷ Hawkins, as in n. 6, fig. 85; there is a possible Thor's hammer pendant in the Goldsborough, Yorks., hoard, published by D.M. Wilson, 'An unpublished fragment from the Goldsborough hoard', *Antiquaries Journal* 37 (1957), 72–3, but this may well have been intended for a cross (cf. Graham-Campbell, as in n. 8, 'Northern hoards', p. 217) and is thus not included in my total of eight.

³⁸ For details see Blackburn, as in n. 31, 'Gold in England'.

On leaving Repton, the Great Army split into two, going their individual ways to conquer and settle – in the process of which they successfully put paid, as it were, to the Northumbrian and East Anglian coinages.

So we come, finally, to the introduction of pecking: that distinctive form of test-marking coins which appears to have no background in Scandinavia, witness the testing of the Kufic coins and hack-silver associated with the Great Army. It is agreed by both Archibald and Blackburn that the earliest hoard known from Britain to contain pecked coins is that from Stamford, deposited about 890, closely followed by the Ashdon hoard from Essex, deposited c.895.³⁹ So we have clear evidence that this was a practice well known in the Southern Danelaw by the 890s, that is during the decade after the beginnings of their new coinage, but this in itself does not reveal why, when or where pecking was instigated.⁴⁰ Such, for now, remains matter for speculation, requiring completion of Archibald's study of the Cuerdale coins – as well as further work on the Scandinavian background for ornament/ingot testing.⁴¹

There are, however, no ingots or hack-silver in either of these two hoards, as is also the case with the more recent find of a hoard at Thurstaston, near Leicester, deposited c.925, which consists of a mixture of ten Anglo-Scandinavian and Anglo-Saxon coins, together with two cut pieces of Samanid dirhems, recently arrived from central Asia.⁴² As Blackburn has noted: 'The hoard is striking for its mixed composition, as it contains both English and Viking issues, which were on different weight standards, and two pieces of dirhem which were simply bullion.'⁴³ In other words, here is evidence that 'a bullion economy still operated in some sections of society in the Danelaw as late as the 920s'.⁴⁴

I would suggest, however, that the Thurstaston hoard may just as likely be indicative of someone newly arrived from an area where a bullion economy was definitely still active – such as the Irish Sea region – and who either had yet to get their monetary affairs in order or were simply expecting to return home. As even Blackburn admits: 'We cannot be sure that the hoard was assembled locally, for it could have been the purse of a passing traveller'.⁴⁵

My analogy in the Northern Danelaw would be the Goldsborough hoard from Yorkshire, deposited c.920, which Blackburn agrees with me was most probably brought intact from Ireland or north-west England (and thus tells us nothing about the economy in the area in which it was deposited).⁴⁶ His evidence for a dual economy having persisted into the 920s in the Northern Danelaw thus hinges on the Bossall/Flaxton hoard, deposited c.927, which clearly contained a substantial bullion element (even if only one arm-ring actually survives).⁴⁷ To what extent then, does this single hoard really stand up against the far more extensive evidence for the existence by then of 'a managed currency' in York and its hinterland? This is, however (as pointed out to me by Mark Blackburn), to ignore the evidence of single-finds, and he is clearly right to highlight the potential significance of the latest such pecked example known to him, 'a Sword St Peter coin of the 920s found near Louth, Lincs'.⁴⁸

³⁹ Archibald, as in n. 20, p. 14; M. Blackburn, 'The Ashton hoard and the currency of the southern Danelaw', *BNJ* 59 (1989), 13–38, and in 'Expansion and control', as in n. 18.

⁴⁰ I am grateful to Hugh Pagan for his comment (in correspondence): 'What is annoying is that we have not yet got a hoard deposited between 875 and 890 which would tell us whether pecking of the coinage by Vikings commenced with Aelfred's reform of the coinage or whether it did not start until a decade or so later (the only substantial hoard within this period is a hoard of Londonia Monogram coins from the City of London, and this seems to have largely comprised runs of uncirculated die-duplicates fresh from the London mint).'

⁴¹ In the meantime, see M.M. Archibald, 'The evidence of pecking on coins from the Cuerdale hoard', in Graham-Campbell and Williams (eds), in n. 31, forthcoming.

⁴² M. Blackburn, 'A Viking hoard from Thurstaston, Leics.: preliminary report', *NC* 161 (2001), 349–52.

⁴³ Blackburn, as in n. 18, 'Expansion and control', p. 137.

⁴⁴ Blackburn, as in n. 42, p. 350.

⁴⁵ Blackburn, as in n. 18, 'Expansion and control', p. 137.

⁴⁶ See note 16.

⁴⁷ See note 15.

⁴⁸ Blackburn, as in n. 18, 'Expansion and control', p. 135; M.A.S. Blackburn and M.J. Bonser, 'Single finds of Anglo-Saxon and Norman coins – 3', *BNJ* 56 (1986), 64–101, no. 113.

Conclusion

To conclude, there is very clear evidence for the introduction of a bullion economy by the Great Army in the 860s that will have continued in use longer in the Northern than in the Southern Danelaw, given the decade's difference in the introduction of the new coinages. But for how long did a genuinely 'dual economy' operate – as opposed to the occasional use of material exchanged by money-weight rather than by the use of coin accepted by tale? I am not sure that I am yet convinced that it was still well established as late as the 920s anywhere in the Danelaw (given the existence of the vibrant bullion economy, so close by, in the Irish Sea region), but I remain open to persuasion!