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|---|---|
| Title | Coiled armrings: an Hiberno-Viking silver arm-ring type |
| Authors | Sheehan, John |
| Publication date | 1991-01-01 |
| Original Citation | Sheehan, J. (1991) 'Coiled Armrings: an Hiberno-Viking silver arm-ring type'. Journal of Irish Archaeology, 6, pp. 41-53. |
| Type of publication | Article (peer-reviewed) |
| Link to publisher's version | http://www.jstor.org/stable/30001605 |
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| Download date | 2026-11-06 07:55:06 |
| Item downloaded from | https://hdl.handle.net/10468/3354 |

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*The Journal of Irish Archaeology, VI 91/92*

# COILED ARMRINGS - AN HIBERNO-VIKING SILVER ARMRING TYPE

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ABSTRACT

*The purpose of this paper is to isolate and discuss a distinctive type of Hiberno-Viking silver armring. Here termed the 'coiled armring', it is dated to the late ninth/early tenth centuries. The methods of manufacture, ornamentation, date, and origins of the type are discussed and the objects are assessed against the background of hoard-associated material and related types of silver armrings. A descriptive catalogue of the material is provided.*

## INTRODUCTION

Armrings are amongst the commonest types of Viking-age silver objects on record from Ireland, with well over two hundred examples of various classes now known (Sheehan 1984). Together with the numismatic material they constitute a vitally important source for the study of the Viking age, testifying, for instance, to the remarkably innovative nature of the Hiberno-Scandinavian silver-working traditions of the ninth and tenth centuries.

A minimum total of twenty-six coiled armrings is known[1] of which no less than nineteen are of Irish provenance. In addition, a single gold finger-ring of similar form is on record from Britain. Some of this material is no longer extant, while three rings are represented only by fragments. The type occurs in seven Irish hoards but in some cases their find circumstances are inadequately recorded. Two of these hoards are no longer extant, though contemporary accounts of their discovery enable the unequivocal identification of some of their components. Three coiled armrings from Ireland, each apparently single finds, cannot be assigned provenances.

In common with most silver armring types of Viking-age date from Ireland coiled armrings have attracted little more than cursory attention until recent years. Wilde's nineteenth century catalogue of silver in the Royal Irish Academy's collections briefly describes four examples (Catalogue Nos. 1-3, 17), and illustrates two of these (Armstrong 1914, 290-293, Pl. XXV, Figs. 9,12). One of them (No. 17) was provenanced by him to 'near Galway town' (*ibid.*, 292). In Bøe's catalogue of Viking-age antiquities from Ireland these four armrings are again briefly dealt with (1940, 115-116). Recently, however, information has come to light on two important 'lost' Irish hoards which contained coiled armrings. The late eighteenth century discovery of a hoard provenanced only to north-west Inishowen, Co. Donegal, which comprised nine or ten such rings (Nos. 4-12/13), was first noted in print by Graham-Campbell in his seminal paper on Irish silver hoards (1976, 51). More recently Briggs has published a manuscript note of Wakeman's which demonstrates that the coiled armring found 'near Galway town' in 1854 (No. 17) was, in fact, the only surviving example of 'a considerable number' of the type found on that occasion (1981, 81). Ongoing work by Graham-Campbell has resulted in the identification of a single complete example (No. 15) in the hoard found 'near Raphoe', Co. Donegal, early in this century (1988, 103).

During the 1980s three important hoards which contain coiled armrings were acquired by the National Museum of Ireland. All are from Co. Westmeath. The first, Dysart No. 4, was discovered on an island in Lough Ennell and is of particular importance in that its deposition is coin-dated (Ryan *et al* 1984). Amongst its large hack-silver content is a single fragment of a coiled armring (No. 20). The second hoard, from Coolure Demesne, was discovered on a crannóg in Lough Derravarragh and consists of a complete coiled armring (No. 14), a number of fragments of other armring types, and a set of three lead weights with ornamented mounts.[2] The third Westmeath hoard was also discovered on a crannóg and is provenanced to Creagduff, Lough Ree. It is a small hack-silver deposit and includes two coiled armring fragments which are possibly from the same ring (Nos. 21a, b). Finally, a coin-dated hack-silver hoard which contains a single coiled armring fragment (No. 22) has recently been acquired by the Ulster Museum[3]. It bears an alleged Co. Antrim provenance.

The coiled armring type is represented in three hoards from outside Ireland. The first of these is the massive, coin-dated find from Cuerdale (Lancs.) in which fragments of four individual examples (Nos. 23-26) have been identified (Graham-Campbell, *forthcoming* a). From Lancashire also is the Saddleworth finger-ring - a miniature version, in gold, of a coiled armring. The remaining finds are both from south-western Norway: the first, that from Vestre Rom (Vest-Agder), comprises a hoard of four armrings of which one is of the coiled type (No. 16; Shetelig 1903, 28-30); the second is the well-known grave-find of Irish metalwork from Gausel (Rogaland), which contains a pair of coiled armrings (Nos. 18-19; Wamers 1985, 100).

## CLASSIFICATION

The rings under consideration are termed *coiled armrings* in view of the coiling technique employed in their manufacture. Given that a total of only seventeen examples are extant, of which seven survive merely as fragments, it is not considered possible at present to advance a meaningful classification of this material on the basis of an attribute correlation system. It is proposed, however, that as the extent to which the rods which form these rings are coiled is both the dominant and most varied of their key attributes this criterion may be used to form the basis of a threefold division of the material (Subgroups A, B and C). Fragments, which cannot be accommodated within this scheme, may be assigned to an 'unclassifiable' category.

**Subgroup A** (e.g. Fig. 1a): coiled armrings of this category may be defined as follows: they are annular in form and are manufactured from a single rod of silver, usually about 30cm in overall length; the rod is characteristically of oval or sub-oval cross-section, and tapers in thickness towards the ends which assume a circular or sub-circular cross-section; the rod averages 2.5mm x 3.0mm in thickness and is coiled almost double, with the ends wound tightly around either side of a short single portion of the hoop, resulting in a bridging-bar effect at the centre of the terminal area. The average overall dimensions of such rings are 6.8cm x 6.2cm; decoration is generally confined to the outer face of the rod and most often consists of single rows of paired, stamped motifs.

**Subgroup B** (e.g. Pl. 4): coiled armrings of this category differ from those of Subgroup A in that the rods which are used to manufacture them are shorter and are coiled for only one and a half circuits of the hoop. This results in a double aspect for only half of the circumference of the ring. In terms of their overall diameters they vary little from those of Subgroup A. The thickness of the rod of No. 16 is somewhat greater than those encountered in Subgroup A.

**Subgroup C** (e.g. Fig. 1b): coiled armrings of this category differ from those of the preceding subgroups in only one major respect - they are coiled for two and a half circuits of the hoop. This results in Subgroup C rings having a triple aspect for half of their circumference. They differ little in other details from armrings belonging to Subgroups A and B.

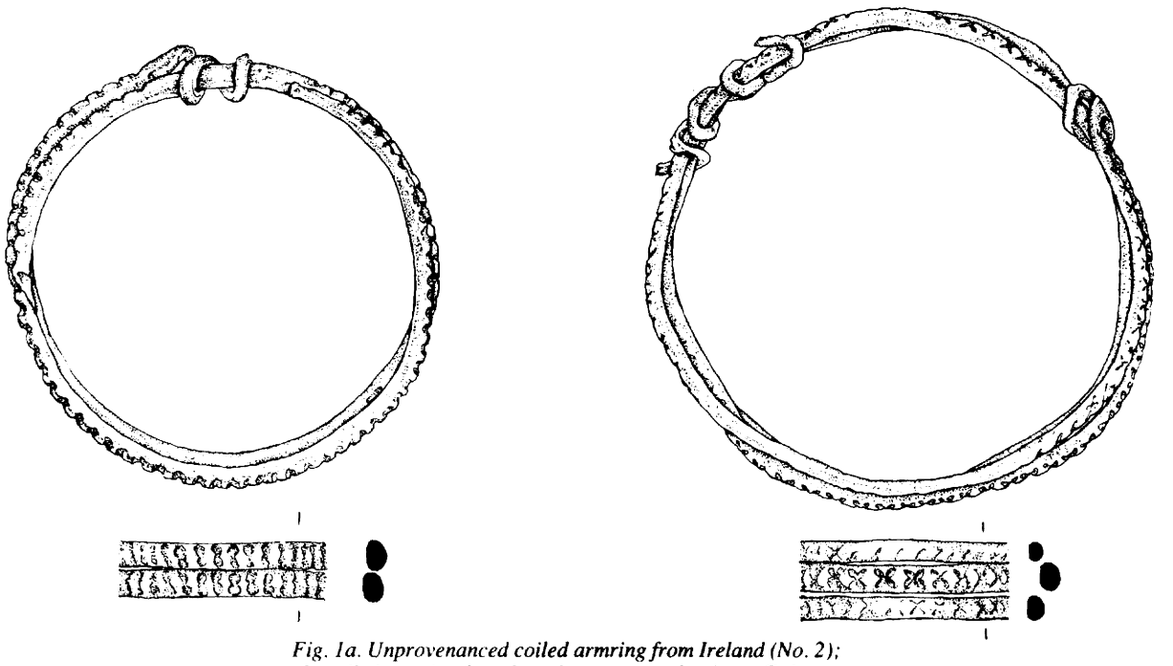


*Fig. 1a. Unprovenanced coiled armring from Ireland (No. 2); b. coiled armring from hoard provenanced to 'near Galway town' (No. 17): Scale 1:1.*

Armrings of Subgroup A, with their characteristic double coiling, amount to a total of only four extant rings (see Table 1). It is probable, however, that all but one of the lost armrings from the north-west Inishowen hoard were also of this type. Accompanying the manuscript record of this find in the Royal Irish Academy (transcribed in Graham-Campbell 1988, 104) is a water-colour drawing of an armring readily identifiable as being of Subgroup A (Pl. 1). The account states that 'nine or ten' rings of this type from the hoard closely resembled one another, 'differing only a little around the twisted parts' (i.e. the wound terminal portions). It therefore seems likely that as many as thirteen or fourteen complete armrings of Subgroup A are attested to in total, indicating that such rings should perhaps be regarded as the 'classic' type of coiled armring. The Saddleworth finger-ring is also of this type (Pl. 6).

Armrings of this subgroup display some variety in the form of their terminal areas. In the cases of two of the extant examples - the unlocalised ring No. 2 and that from the Coolure Demesne hoard (No. 14) - the ends of the rods are wound tightly around either side of an intermediate plain section (Fig. 1a, Pl. 2). The terminal area of the illustrated ring from the north-west Inishowen hoard is also of this form (Pl. 1). The unlocalised ring No. 3 differs from these in that the bridging-bar between its wound terminals is rifled (Fig. 2b), while a neatly fabricated spiral-device occupies the juncture of the wound ends of the unlocalised ring No. 1 (Fig. 2a). These details of the latter two rings are of some importance, as will be indicated below.

Together Subgroups B and C account for only five extant rings (Table 1). The possibility exists, however, that some of the 'considerable number' of lost rings which accompanied ring No. 17 in the hoard found 'near Galway town' in the last century (Briggs 1981, 81) were also of Subgroup C, but this must remain a matter of conjecture. On present evidence it would appear clear that neither of these subgroups approaches Subgroup A in terms of popularity.

Little can be said about the eight unclassifiable rod-fragments (Table 1). Derived from four separate hoards, they appear to represent at least seven individual coiled armrings. On the basis of the average rod thickness of the three subgroups, it is suggested that relatively thick rod-fragments, such as those from the Creagduff and Co. Antrim hoards (Nos. 21 a-b, 22), are more likely to be derived from armrings of Subgroup B.

The dating evidence for coiled rings will be discussed below, but it is important to point out at this juncture that there is no clear evidence at present to suggest that rings of different subgroups occur together in the hoards. The opposite, indeed, is the case with the Gausel hoard, and, as has been suggested above, with the hoard from north-west Inishowen.

## Ornamentation

With the exception of the ring from the Raphoe find (No. 15), all extant coiled armrings and fragments bear stamped ornament, confined, in all cases, to the outer faces of the rods. Given the narrow dimensions of these surfaces it is not surprising that the schemes of ornamentation used are generally very simple. Four basic schemes may be discerned, all of which involve the use of paired or opposed motifs occurring in single rows.

The first of these consists of opposed rows of minute stamped triangles, disposed apex to apex (e.g. Pl. 5). The stamped motifs tend to be quite neatly executed, and the overall arrangement is by no means as haphazard as those of other such schemes. Both armrings from the Gausel hoard, the fragments from the Creagduff find, and one of the Cuerdale rods (Nos. 18, 19; 21a, 21b; 26) are ornamented in this manner.

The second scheme is characterised by the occurrence of larger and rather more irregularly opposed rows of stamped triangles

| CATALOGUE No. | PROVENANCE | SUB-GROUP |
|---|---|---|
| 1 | 'Ireland'. | A |
| 2 | 'Ireland'. | A |
| 3 | 'Ireland'. | A |
| 4 - 12/13 | North-West Inishowen, Co. Donegal. | A |
| 14 | Coolure Demesne, Co. Westmeath. | A |
| 15 | nr. Raphoe, Co. Donegal. | B |
| 16 | Vestre Rom, Vest-Agder, Norway. | B |
| 17 | nr. Galway, Co. Galway. | C |
| 18-19 | Gausel, Rogaland, Norway. | C |
| 20 | Dysart Is. (No. 4), Co. Westmeath. | Unclass. |
| 21a-b | Creagduff, Co. Westmeath. | Unclass. |
| 22 | Co. Antrim (?). | Unclass. |
| 23-26 | Cuerdale, Lancs., England. | Unclass. |

**Table 1: Check-list of coiled armrings with subgroup classifications.**

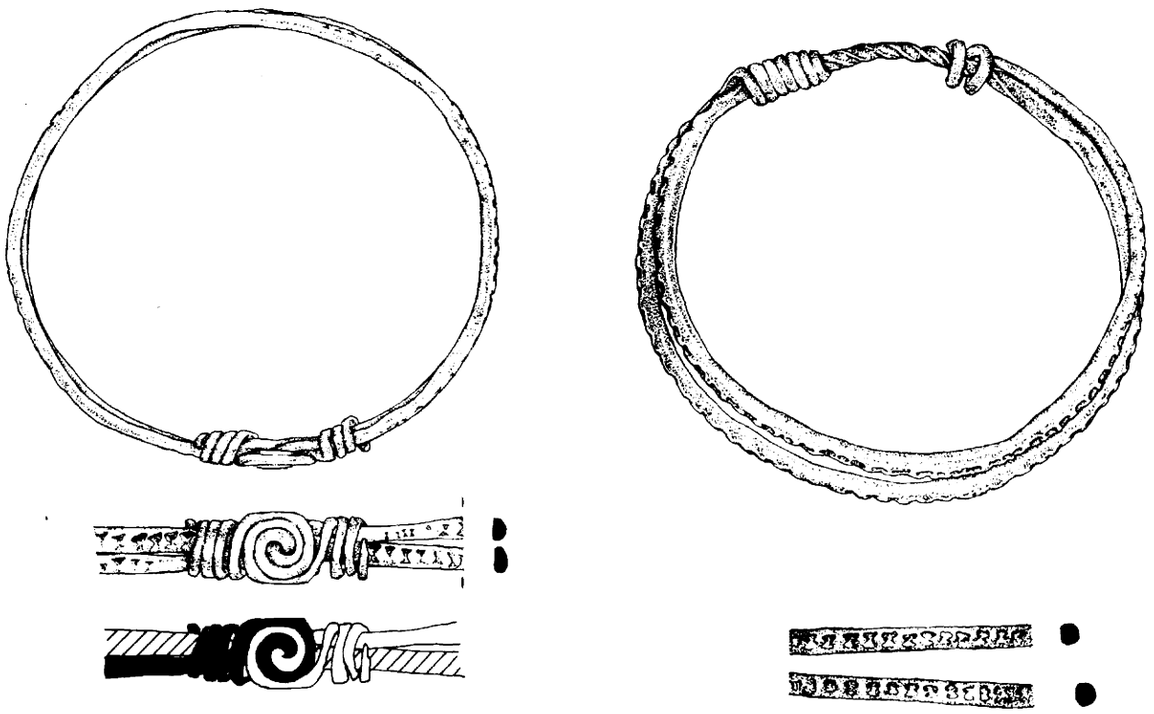


*Fig. 2a-b, Unprovenanced coiled armrings from Ireland (Nos. 1,3): Scale 1:1.*

(e.g. Fig. 2b). Generally the apices of these triangles overlap, their juxtapositioning resulting in rough lozenge-forms in false relief. In one instance a single raised pellet occurs in the stamped triangles (No. 16). Both the Coolure Demesne and the Vestre Rom armrings (Nos. 14, 16), as well as two of the unprovenanced Irish examples (Nos. 1,3), are ornamented in this fashion. The scheme of ornamentation used on the illustrated ring from the north-west Inishowen hoard (No. 4) appears to be similar in type.

The third and fourth schemes are related in overall form and effect to the latter. The first of these is characterised by the occurrence of pairs of opposed ovoid or sub-ovoid stampings which occasionally overlap to result in rough dumbbell shapes (e.g. Fig. 1a). One of the unlocalised Irish armrings (No. 2), and a fragment from each of the Dysart and Cuerdale hoards (Nos. 20, 23), are ornamented in this manner. The fourth scheme consists of an arrangement of opposed lozenge- or sub-lozenge forms, and occurs on two of the Cuerdale fragments (Nos. 24,25).

Two armrings are ornamented with unusual stampings which isolate them from the above groups. The first of these, a rod fragment from the Co. Antrim hoard (No. 22), features two rows of opposed sub-crescentric motifs, while the second, the sole surviving armring from the 'near Galway' hoard (No. 17; Fig. 1b), bears a single row of stamped quatrefoils. The latter is paralleled on armrings from the Rebild (Jutland) and Cuerdale (Lancs.) hoards, both of which have substantial Hiberno-Viking elements in their composition, while the former finds a parallel on an armring with animal-headed terminals from a hoard provenced to Co. Cork (Sheehan 1990, 43, Fig. 2a).

Overall, there is no clear correlation between the basic schemes of ornamentation noted here and the three subgroups proposed above. This is not entirely surprising, as the recurring motifs - such as the triangles, ovoids and lozenges- occur widely as stamped ornament in both time and space throughout the Viking age. They are, however, a dominant feature of the vast majority of contemporary Hiberno-Viking broad-band armrings, amongst which longitudinally disposed ornamentation is common. It is also worth noting that the schemes of ornamentation on some Danish variants of Permian rings are very similar to those of coiled armrings.

## Manufacture

The initial stage in the process of manufacture of a coiled armring was the production of a long rod of circular or approximately circular cross-section. Without microscopic examination of the extant material it is not ossible to be certain as to the exact technique used in this operation, but it is proposed here that the rods were most likely made by block-twisting. This was a relatively simple and common technique which involved the twisting of a square-or rectangular-sectioned rod before rolling it between two wooden blocks to achieve a fairly uniform, round section (Oddy 1977). The evidence for its use in the production of the coiled armring rods is perhaps indicated by the rifled form of the bridging-bar of the unlocalized ring No. 3 (Fig. 2b). Here, it seems, the maker of the ring chose to leave portion of the twisted rod unblocked with the intention of incorporating it as decorative feature of the terminal area of the finished ring. Microscopic examination of the rings, shortly to be undertaken, will, it is expected, confirm the use of the block-twisting technique in their manufacture.

On present evidence it would appear unlikely that the rods were manufactured either by drawing or hammering. Rods produced by hammering tend to be of uneven thickness, while without the use of a winch (a late medieval invention), rods over 2mm in diameter cannot be drawn. Both drawn and hammered rods and wire, however, are represented in Viking-age finds of insular provenance. [4]

Having formed the rod, the next stage in the manufacturing process was the application of the ornament. That the rod was ornamented before the actual fabrication of the ring-form was carried out is indicated by the fact that in at least two demonstrable instances, those of the unlocalised ring No. 1 and the Vestre Rom example (Fig. 2a; Pl. 4), ornamented portions of the rods are obscured by their wound terminals. Furthermore, the application of the ornament to an extended rod would have been a somewhat less complex procedure than its application to the curved outer surface of a fully formed ring.

The motifs were applied using a hammer and punch. As a result of this procedure the circular rod assumed the characteristic sub-oval cross-section of the coiled armrings. In this regard it is instructive to note that the cross-section of the rod forming the only unornamented coiled armring on record, that from the Raphoe hoard (No. 15), is circular, and, moreover, that the plain central portion of ring No. 2, as well as the unornamented ends of rings Nos. 3 and 22, are also of circular cross-section.

Following the application of the stamped ornament, the final stage of manufacture - the fabrication of the ring's form - was undertaken. The turning of the rod into a number of coils or half-coils presumably involved the use of some form of curved

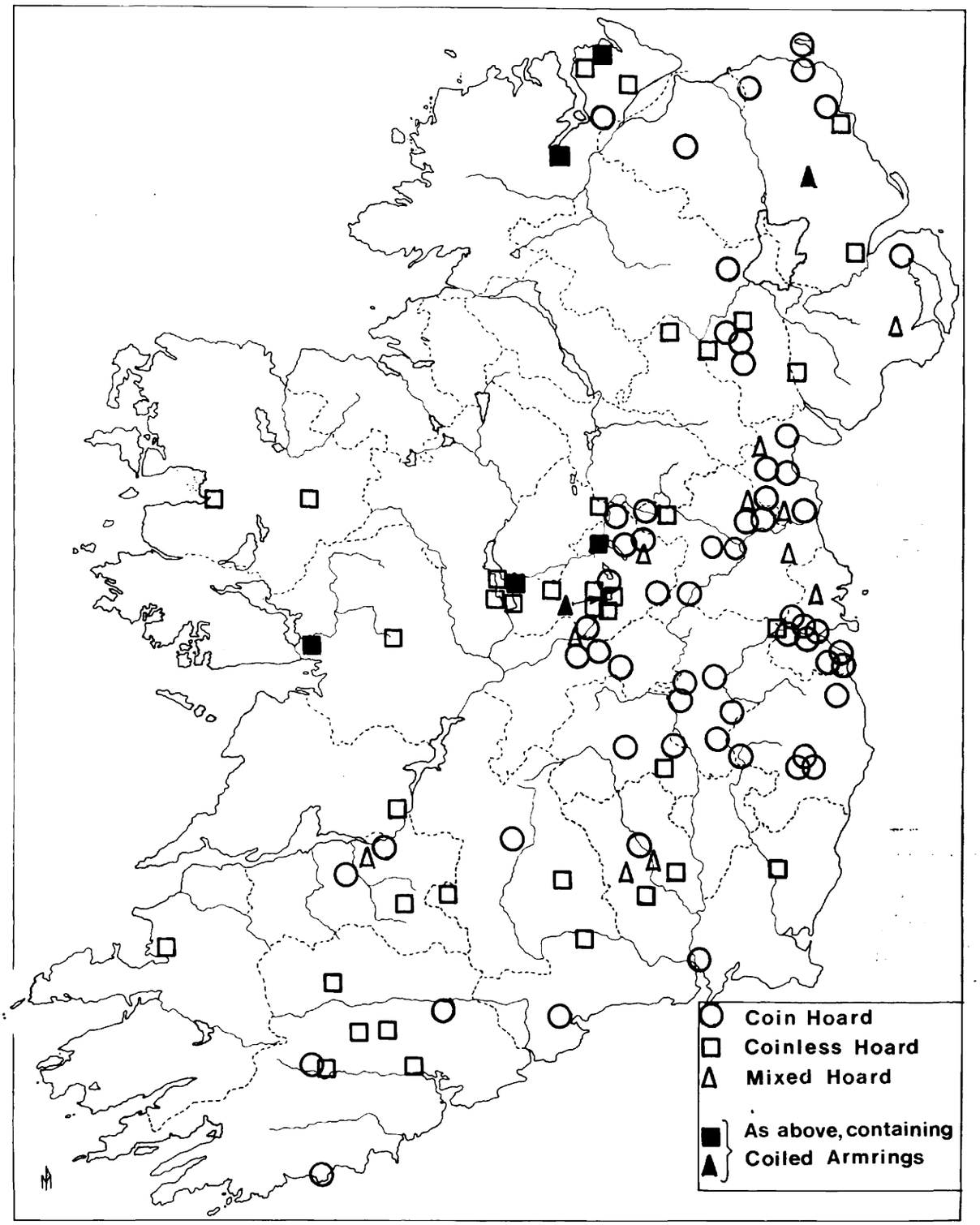



*Fig. 3. Distribution of Viking-Age silver hoards in Ireland (with hoards containing coiled armrings indicated).*

mandrel or jig in order to give reasonably uniform bends to the loops. Pliers were probably used in this process, and were almost certainly necessary to wind tightly the tapering ends of the rods at the terminal areas (and in the formation of the spiral-device of the unlocalised ring No. 1).

## Distribution

A glance at the distibution pattern of coiled armrings within Ireland reveals that it conforms broadly with that of Viking-age silver hoards containing non-numismatic material, with five of the seven known find-spots forming part of the concentrations of hoards in the central midlands and in northern Co. Donegal (Fig. 3). This, combined with the fact that the distribution complements that of the much more common Hiberno-Viking broad-band armring type (by far the dominant armring of the Viking age in Ireland), suggests that the two types may overlap chronologically as well as spatially. This question is investigated further below, but the association of both types of armring in two of the three recorded find spots of the coiled armring type from outside Ireland (Cuerdale and Vestre Rom) reinforces this impression.

The distributional evidence clearly suggests that Ireland was the sole area of production of coiled armrings. The presence of four fragments in the Cuerdale deposit need not be regarded as evidence to the contrary, given the substantial size of the recognizable Hiberno-Viking element in the Lancashire hoard (Graham-Campbell 1987, 339-340). Neither should the two Norwegian occurrences of coiled armrings be so regarded, as the Vestre Rom and Gausel hoards are otherwise exclusively composed of Hiberno-Viking and Insular metalwork respectively.

However, the distribution pattern cannot be interpreted as evidence for coiled armrings being a *native* Irish type. All hoards known to contain coiled armrings are of general Scandinavian character, and, with the exception of the Gausel find, are composed exclusively of demonstrably Scandinavian or Hiberno-Viking objects (See Table 2). On this basis it may be argued that they were produced in an Hiberno-Viking milieu rather than in native Irish workshops (such as those regarded as responsible for producing contemporary silver artefact-types such as the bossed penannular brooches). In this respect it is instructive to note that the nature and context of the distribution pattern of these native brooches generally differs markedly from that of the Hiberno-Viking silver material (Graham-Campbell 1975a, 42).

## Chronology

A general date-range for the currency of coiled armrings may be proposed on the basis of the coin-dated hoards in which they occur, as well as from their hoard-association with other broadly dateable artefact types (Table 2). However, neither the attributes of the rings themselves nor their schemes of ornamentation appear, at present, to be of any precise significance for dating purposes.

The characteristic dumbbell and opposed-triangle motifs, for instance, are of widespread occurrence in both time and space throughout the Viking World. On present evidence the variations of these motifs, such as appear on the coiled armrings, are not of any discernable chronological significance. Similarily, the spiral-device, which is an important and distinctive feature of the unlocalized ring No. 1 (Fig. 2a), cannot be dated closely. It is, however, a unique characteristic amongst the corpus of surviving coiled armrings. Such devices are of rare occurrence generally, appearing on only four other silver armrings of Irish provenance: on a rod armring from the Rathmooley, Co. Tipperary, find (Scott O'Connell 1938, 125-126; Sheehan 1992, 213-214, Fig. 2), and on three ribbon bracelets derived from 'the Liffeyside', Co. Dublin, and one of the Athlone, Co. Westmeath, hoards (Briggs and Sheehan 1987, 351-352; Bruce 1880, 94). It is also a feature of a number of armrings in the Cuerdale deposit (Hawkins 1847, 122), as well as of a series of rod armrings from Norwegian and southern Swedish hoards (e.g. Grieg 1929, Nos. 4, 17, 33, 45, 53; Hårdh 1976, Nos. 4, 11, 128, 131). The currency of the spiral device in Norway, on the basis of the numismatic material in the Slemmedal (Aust-Agder), Tråen (Buskerud) and other hoards (Skaare 1976, 136; 1981, 40), appears to have extended throughout the tenth century, while in Sweden and Gotland it extended into the eleventh century (Sheehan 1992, 214; Table 4). The deposition date of the Cuerdale hoard, however, indicates that such spiral devices must also have been current in insular contexts in the later decades of the ninth century.

A listing of the material associated with coiled armrings in hoards (Table 2) demonstrates that ingots and Hiberno-Viking broad-band armrings are the most commonly recurring items. A single example of 'ring-money' and a heavy lozenge-sectioned armring also occur in association in the Raphoe hoard. Two finds, those from Coolure Demesne and Gausel, contain non-silver decorated metalwork in addition to armrings. All such associated

| | BROAD-BAND ARMRINGS | INGOTS | 'RING-MONEY' | LOZENGE-SECTIONED ARMRINGS | OTHER | COIN-DATED DEPOSITION |
|---|---|---|---|---|---|---|
| N.W. Inishowen | * | – | – | – | – | – |
| Coolure Demesne | * | – | – | – | * | – |
| Nr. Raphoe | * | * | * | * | – | – |
| Vestre Rom. | * | – | – | – | – | – |
| Nr. Galway | – | – | – | – | * | – |
| Gausel | – | – | – | – | * | – |
| Dysart No. 4 | * | * | – | – | * | *c.* 910 |
| Creagduff. | * | * | – | – | – | – |
| 'Co. Antrim'. | * | * | – | – | – | *c.* 910? |
| Cuerdale. | * | * | – | – | * | *c.* 905 |

**Table 2: Check-list of hoard associations of coiled armrings.**

| PROVENANCE | DEPOSITION | COILED ARMRING | BROAD-BAND ARMRING |
|---|---|---|---|
| Sevington, Wilts. | *c.* 850 | – | – |
| Trewhiddle, Corn. | *c.* 868 | – | – |
| Gravesend, Kent. | *c.* 871 | – | – |
| Croydon, Surrey. | *c.* 872 | – | ★ |
| Repton, Derby. | *c.* 874 | – | – |
| Beeston Tor, Staffs. | *c.* 875 | – | – |
| Cuerdale, Lancs. | *c.* 905 | ★ | ★ |
| Magheralagan, Down. | *c.* 910 | – | ★ |
| Harkirk, Lancs. | *c.* 910 | | – |
| Dysart Is., Westmeath. | *c.* 910 | ★ | ★ |
| Co. Antrim. | *c.* 910 | ★ | ★ |
| Leggagh, Meath. | *c.* 915 | – | – |
| Goldsborough, York. | *c.* 920 | – | ★ |
| Bangor, Caer. | *c.* 925 | – | ★ |
| Bossal, York. | *c.* 925 | – | – |
| Dunmore Cave, Kilkenny. | *c.* 928 | – | – |
| Scotby, Cumb. | *c.* 935 | – | – |
| Storr Rock, Inv. | *c.* 935 | – | – |
| Co. Dublin. | *c.* 935 | – | – |
| Deptford, Kent. | *c.* 935 | – | – |
| Skaill, Ork. | *c.* 950 | – | – |

**Table 3: Check-list of silver mixed hoards (850-950) from Britain and Ireland.**

material may be used to indicate the general date-range of the coiled armring type, while the presence of substantial quantities of coins in the Dysart Island and Cuerdale hoards, as well as the single coin from the Co. Antrim find, provide useful chronological reference points.

Although forming the largest group of armrings known from insular contexts, the Hiberno-Viking broad-band type may be reasonably closely dated. It occurs in association with the coiled armring type in eight of the latter's ten known hoard occurrences. First isolated and defined almost twenty years ago (Graham-Campbell 1976, 51-53), rings of this type may be assigned to within the period of the second half of the ninth and first half of the tenth century. It is probable that their main period of manufacture falls between *c* 880 and *c* 930-40 (Sheehan 1989, 125). The remarkable frequency of association between this type of armring and the coiled type suggests that a significant period of overlap existed in their respective periods of currency.

Ingots occur in association with the coiled armrings on five occasions. The value of ingots for dating purposes, however, must at present be regarded as practically negligable. They are very frequent components of Viking-age hoards in both Scandinavia and the West (where they occur in over forty separate hoards), and may range in date from the ninth to the twelfth centuries.

Coiled armrings occur in three mixed hoards, those from Cuerdale, Dysart Island, and Co. Antrim (Table 3). The deposition dates of these hoards are, respectively, *c* 905, *c* 910, and *c* 910 (?) (Blackburn and Pagan 1986, 294, No. 87; 295, No. 93; Graham-Campbell *forthcoming* b). These dates demonstrate that this type of armring was most probably already in existence during the final decades of the ninth century, particularly when one considers that in each of these hoards the coiled armring type is represented only by rod-fragments.

That the origins of the coiled armring type probably lie in the later ninth century is further reinforced when the unpublished lead weights which formed part of the Coolure Demesne hoard are considered. These three items are ornamented with gilt-bronze mounts of Insular manufacture and are paralleled by the sets of weights from Kiloran Bay (Colonsay) and Kilmainham-Islandbridge, Co. Dublin (Graham-Campbell 1980, 88-89, Nos. 307-308). They almost certainly date to the second half of the ninth century, and are of additional interest in that they may be justifiably regarded as reflecting a desire on the part of the Hiberno-Scandinavian makers/owners of silver armrings that these conform to a standard unit of weight such as would be necessary in a *gewichtsgeldwirtschaft* or metal-weight economy.

That coiled armrings continued in popularity for at least half a century is indicated by their association in the Raphoe hoard with an example of 'ring-money' and with a heavy, lozenge-sectioned ring. Rings of the former type make their first appearance in coin-dated hoards during the second quarter of the tenth century (Graham-Campbell 1975, 125-126), and are to be regarded as a Scoto-Norse phenomenon, as is clearly indicated by their distribution. About twenty examples are now on record from Ireland (Sheehan 1982, 89-91). The lozenge-sectioned ring from Raphoe belongs to a related type, which also appears

to have developed during the first half of the tenth century (Sheehan 1984). About a dozen examples of insular provenance are known, one of which forms part of the Scotby (Cumb.) mixed hoard, deposited *c* 935 (Kruse 1986, 70).

It is therefore suggested, on the basis of the associated numismatic and non-numismatic material, that the main period of manufacture of the coiled armring type lies within the period *c* 880 - *c* 930. This half century is of particular interest in that it also appears to have been the period during which the bulk of the much more numerous broad-band type of Hiberno-Viking armrings was current (See Table 3).

### Origins, Development and Affinities

The presence of fragments of coiled armrings in three mixed hoards deposited in the first decade of the tenth century indicates, as suggested above, that the origins of the type lie in the later ninth century. While it is clearly to be regarded as a Hiberno-Viking development, given its hoard associations and distribution, it is equally true that there are no precedents in Ireland (or Britain) for its distinctive coiled form. The likelihood is, therefore, that it represents a development of a ninth century Scandinavian prototype.

In Scandinavia an annular type of ring, here termed the rod armring, which was formed from singly coiled rods of circular cross-section, was in existence by this time (Fig. 4). In Norway its earliest dateable occurrence is in the gold hoard from Hon (Buskerud), which is the only Scandinavian hoard known to contain exclusively ninth-century coins together with ornamented objects. The former provide a *terminus post quem* of *c*. 852 for its deposition (Skaare 1976, 135), though it is likely to have been buried later in the ninth century (Graham-Campbell 1980, 143, No. 486). Rod armrings form part of four Norwegian silver hoards, with coin-dated depositions in the first quarter of the tenth century, while the type does not begin to occur commonly elsewhere in Scandinavia until the mid-point of the century. From the last quarter of the tenth century onwards the rod armring becomes a frequent component of southern Swedish, Danish and Gotlandic hoards (see Table 4) and is current well into the eleventh century on Gotland. The dating evidence of this armring type may be interpreted as indicating that it is a Norse development which spread into southern Scandinavia from *c*. 950. Such examples as occur in late ninth and early tenth century insular contexts should therefore be regarded as being of Norse, rather than of pan-Scandinavian, origin.

| PROVENANCE | t.p.q. |
|---|---|
| Cuerdale, Lancs. England. | 905 |
| Haugen, Vestfold, Norway. | 910 |
| Stafsinge, Halland, Sweden. | 916 |
| Brunnby, Skåne, Sweden. | 916 |
| Grimestad, Vestfold, Norway. | 921 |
| Teisen, Östre Aker, Norway. | 923 |
| Bossall/Flaxton, Yorks., England. (?) | 925 |
| Slemmedal, Aust-Agder, Norway. | 925 |
| Deptford, London, England. | 935 |
| Hällaryd, Blekinge, Sweden. | 936 |
| Grimeton, Halland, Sweden. | 942 |
| Sejrby, Serjø, Denmark. | 953 |
| Helsingborg, Skåne, Sweden. | 953 |
| Bovlund, Jylland, Denmark. | 954 |
| Listerby, Blekinge, Sweden. | 955 |
| Rordal, Jylland, Denmark. | 970 |
| Gravlev, Jylland, Denmark. | 973 |
| Suderbys, Dalhem, Gotland. | 978 |
| Vamlingbo/Sundre, Gotland. | 978 |
| Baldring, Skåne, Sweden. | 983 |
| Sodra, Sandby, Skåne, Sweden. | 983 |
| Fölhagen, Björke, Gotland. | 991 |
| Liknatte, Stenkyra, Gotland. | 991 |
| Träen, Buskerud, Norway. | 991 |
| Vaalse, Falster, Denmark. | 991 |
| Talings, Rute, Gotland. | 995 |
| Tolånga, Skåne, Sweden. | 996 |
| Reslöv, Skåne, Sweden. | 996 |
| Sölvesborg, Blekinge, Sweden. | 997 |
| Gärdslöv, Skåne, Sweden. | 1002 |
| Hallsarve, Fardhem, Gotland. | 1002 |
| Munkegaard, Bornholm, Denmark. | 1002 |
| Unprovenanced, Skåne, Sweden. | 1002 |
| Östra Herrestad, Skåne, Sweden. | 1024 |
| Sodra Byrummet, Visby, Gotland. | 1039 |
| Edestad, Blekinge, Sweden. | 1056 |
| Hjortsberga, Blekinge, Sweden. | 1120 |

**Table 4: Provisional check-list of Viking Age silver mixed-hoards containing rod armrings.** [5]

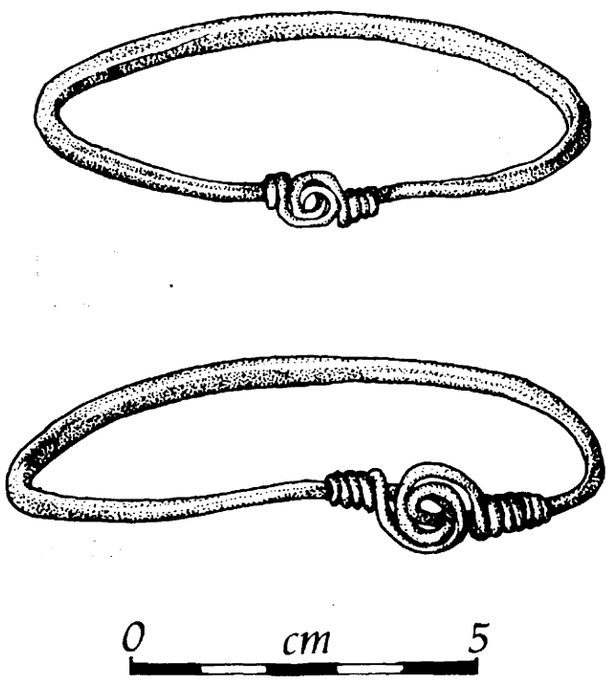



*Fig. 4. Rod armrings from Swedish hoards. Top: Edestad, Blekinge; bottom: Herrestad, Skåne. Scale 1:1.*

Few examples of rod armrings are known from Ireland. One, complete with a spiral device at its terminal area, derives from the Rathmooley, Co. Tipperary, hoard (Scott O'Connell 1938, 126; Sheehan 1992, 213-214, Fig. 2). In Britain, however, a number of complete examples and numerous fragments occur in the Cuerdale (Lancs.) hoard (Hawkins 1847, 122), while a single example forms the non-numismatic element of the recently reprovenanced Deptford (S.E. London) hoard, deposited *c* 935 (Graham-Campbell 1986, 186-187). It is also possible that an example was present in the now largely destroyed hoard from Bossall/Flaxton (Yorks.), deposited *c* 925 (Blackburn and Pagan 1986, 295; Graham-Campbell *forthcoming*, b). The presence of rod armrings in the Cuerdale hoard, deposited *c*. 905 (Blackburn and Pagan 1986, 294), is of crucial importance in that it demonstrates the occurrence of the type in the West (and most probably in Ireland) during the later ninth century.

The reasons for regarding the coiled armring as a development of the Scandinavian rod armring, apart from the chronological overlap in their respective occurrences in Viking-age hoards of Insular provenance (and their association together in the Cuerdale deposit), are based on a number of important attributes which

both ring-types have in common. First and foremost of these is the tendency for both to be formed from rods of circular cross-section[6]. In the ninth century this is sufficiently uncommon to warrant a relationship between both ring-types, and may be connected with the Scandinavian fashion for twisted and plaited arm- and neckrings fabricated from elongated round-sectioned rods. Secondly, the 'bridging-bar' which is a notable feature of the terminal areas of a number of coiled armrings (e.g. Nos. 2, 3, 4, 14) is paralleled on some Norwegian rod armrings, such as that from the Hon (Buskerud) hoard (Grieg 1929). Of equal importance is the unusual spiral-device which occurs at the terminal area of the unlocalised ring No. 1 (Fig. 2a). This is readily paralleled on a series of rod armrings of Scandinavian provenance, as has been pointed out above, such as those from the Rauan (Vestfold), Tråen (Buskerud), Gjulem (Østfold), and Slemmedal (Aust-Agder) hoards (Grieg 1929, 237, 214; Blindheim 1981), as well as on a number of the Cuerdale examples (e.g. Hawkins 1847, 122, No. 53). In Ireland only one such ring, that from the Rathmooley, Co. Tipperary, hoard is on record, and this should be regarded as a probable Scandinavian import (Sheehan 1992, 214).

It has so far been argued that the Scandinavian and Hiberno-Viking rings under discussion share reasonably distinctive forms of terminals and the use of round-sectioned rods. The major difference between these two types, of course, is the fact that examples of the former are characteristically coiled only once while those of the latter may occur in one and a half, two, or even two and a half coils (Subgroups A, B and C). It is proposed that such coiling should be regarded simply as a progressive elaboration of the rod armring type made possible by the provision of longer rods and inspired, perhaps, by the parallel Danish practice of coiling imported 'Permian' neckrings during the ninth century (Munksgaard 1962)[7].

That the preliminary stages of this proposed elaboration took place in Norway is perhaps suggested by the occurrence there of several rod armrings which feature strongly overlapping wound terminals. Examples include two rings from the Bøstrand (Nordland) hoard, and individual examples from the Ve (Vestfold) and Rostad (Hedmark) finds (Grieg 1929, 258-260, 203-204; Petersen 1928, 155). The discovery of a bronze ring of this type in one of the Edenvale Caves, Co. Clare (Scharff 1906, 69, Fig. 14), however, indicates that these initial developments may equally well have taken place in Ireland. In either case it only required a further extension of the terminals of such rings to produce examples resembling Subgroup B coiled armrings, with their distinctive double aspect. It would appear, given the distributional evidence, that this and subsequent developments of the rod armring type took place in an Hiberno-Norse, rather than a Scandinavian, milieu. While their Scandinavian prototypes are almost always plain, in Ireland the developed rings were ornamented with punched geometrical motifs. Such ornamentation was, no doubt, influenced by the style of ornament of the Hiberno-Viking broad-band armrings, which, as their occurrence in coin-dated hoards demonstrates (see Table 3), were largely, if not wholly, contemporaneous with the coiled armring type.

## Catalogue

**No. 1. Ireland** Fig. 2a
N.M.I.: Reg. No. W.70 Subgroup A
*Description:*
Formed from a rod of sub-oval cross-section which tapers markedly to each end. It is coiled twice. The ends are interlocked to form a spiral, on either side of which the terminals are tightly wound around the hoop. With the exception of the terminal areas the outer face of the rod is ornamented by a continuous row of punched, opposed triangle/hour-glass, motifs. The rod bears minor nickings. Ext. diams. : 7.1cm x 6.4cm; max. dims. of rod: 1.7mm x 3mm; weight: 24.15g.
*Remarks:*
Nothing is on record concerning the provenance or find circumstances of this ring.
*Bibliography:*
Armstrong 1914, 290, Pl. XXV, Fig. 12; Bøe 1940, 115.

**No. 2. Ireland** Fig. 1a
N.M.I.: Reg. No. W.73 Subgroup A
*Description:*
Formed from a rod of sub-oval cross-section except at the extant terminal and the mid-point, where it is approx. circular in section. It is coiled twice. The surviving terminal tapers in thickness and is loosely wound around one side of the unornamented mid-point of the hoop. The remainder of the rod is ornamented on its outer face by a continuous row of punched, rough dumb-bell motifs. The ring lacks one terminal and exhibits minor nickings. Traces of modern repair (solder) occur on two areas of the rod. Ext. diams: 6.05cm x 5.8cm; max. dims. of rod: 2.5mm x 3mm; weight: 26.55g.
*Remarks:*
The ring was discovered prior to 1846, as it features in the Plunkett drawings in the National Museum of Ireland of that date. Nothing is on record concerning its provenance or find circumstances.
*Bibliography:*
Armstrong 1914, 292; Bøe 1940, 116.

**No. 3. Ireland** Fig. 2b
N.M.I.: Reg. No. W.74 (515C) Subgroup A
*Description:*
Formed from a rod of sub-oval cross-section, tapering to round-sectioned ends. At its mid-point the rod is twisted for a short length. It is coiled twice. One terminal is loosely wound twice around the hoop, the other is tightly wound seven times. Most of the outer face of the rod is ornamented by a continuous row of punched opposed-triangle/dumb-bell motifs. The object is complete but is somewhat mis-shapen. Ext. diams. : 7.32cm x 6.5cm; max. dims. of rod : 2.75mm x 3.75mm; weight: 28.2g.
*Remarks:*
Nothing is on record concerning the provenance or find circumstances of this ring. Like the preceding example it features in the Plunkett drawings and therefore was discovered prior to 1846.
*Bibliography:*
Armstrong 1914, 290; Pl. XXV, Fig. 9; Bøe 1940, 116.

**No. 4. 'North West Inishowen', Co. Donegal.** Pl. 1
Probably non-extant Subgroup A
*Description:*
Formed from a rod which was coiled twice. The tapered ends were tightly wound around the mid-point of the hoop. Its outer face was ornamented by a continuous row of opposed-triangle/dumb-bell stamped motifs. Max. ext. diam: *c* 7cm; max t. of rod: *c* 4mm.

**Nos. 5 - 12/13.**
*Description:*
Stated to have been similar to one another but varying somewhat in the form of the terminals and in the details of their ornamentation.
*Remarks:*
Nos. 4-12/13 were discovered together in 1790. They apparently hung within a broad-band armring. Much, if not all, of the hoard was subsequently melted down by a Derry silversmith. From details included in the manuscript record of the find (transcribed in Graham-Campbell 1988) it has been estimated that the armrings averaged 2.0oz (56.6g) in weight, and that the total weight of the hoard was *c* 0.5kg.
*Associations:*
One Hiberno-Viking broad-band armring.
*Bibliography:*
R.I.A. ms 24.E.34, Specimen Book, 95; Graham-Campbell 1988, 104-106.

**No. 14. Coolure Demesne, Co. Westmeath.** Pl. 2
N.M.I.: Reg. No. 1990:85 Subgroup A
*Description:*
Formed from a rod of sub-oval cross-section, tapering to round-sectioned ends. It is coiled twice. The ends are tightly wound around the plain mid-point of the hoop. The outer face of the rod is ornamented by a continuous row of punched opposed-triangle/

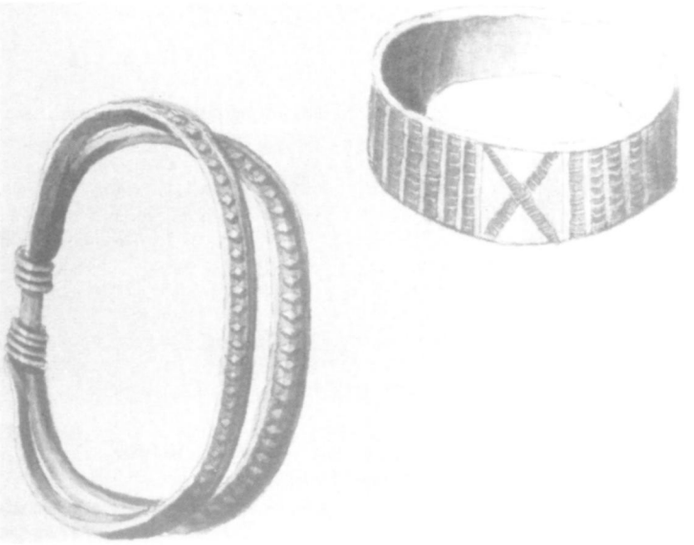


*Plate 1.*
*Water-colour drawing of two silver armrings from the North-West Inishowen, Co. Donegal, hoard (right, No. 4).*

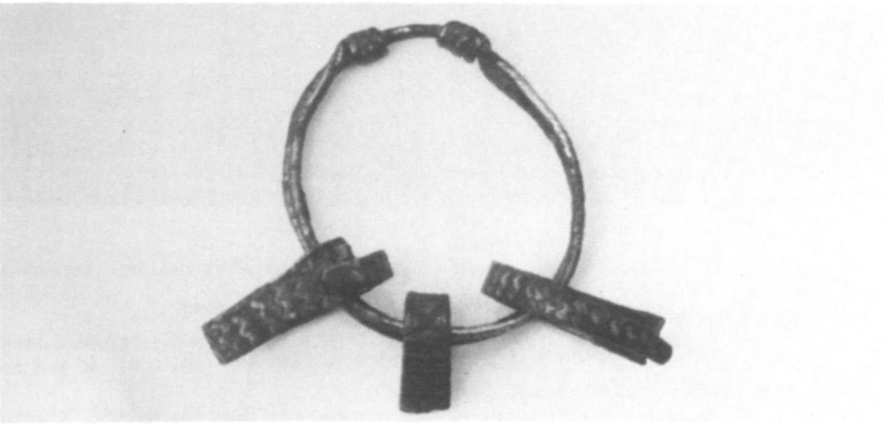


*Plate 2.*
*Silver components of the Coolure Demesne, Co. Westmeath, hoard.*



*Plate 3.*
*Silver hoard from near Raphoe, Co. Donegal (coiled armring no. 15, bottom centre).*
*(Photo: Sotheby's, London).*

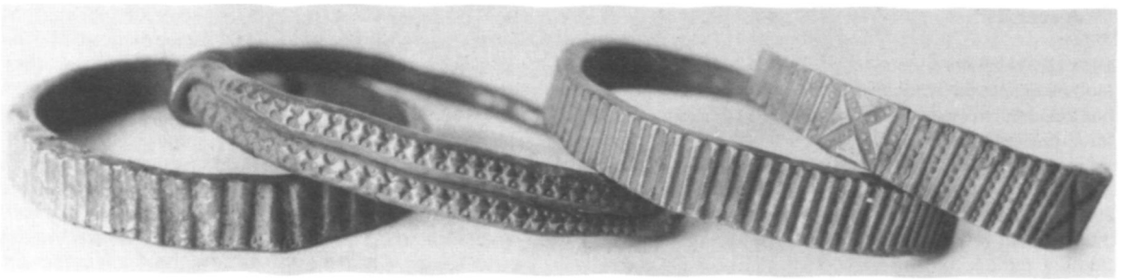


*Plate 4.*
*Silver hoard from Vestre Rom, Vest-Agder, Norway.*
*(Photo: Historisk Museum, Bergen).*

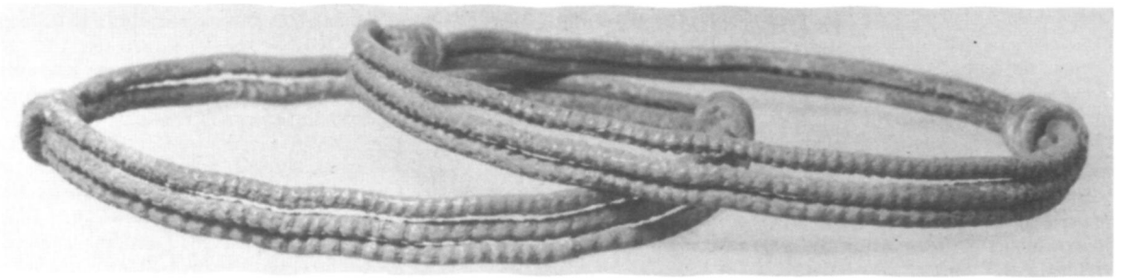


*Plate 5.*
*Coiled armrings from the grave find at Gausel, Rogaland, Norway.*
*(Photo: Historisk Museum, Bergen).*



*Plate 6.*
*Silver finger-ring from Saddleworth, Lancashire.*
*(Photo: British Museum).*

dumb-bell motifs. Max. ext. diam: 6.1cm; max. th. of rod: 2.5mm.
*Remarks:*
Found on a crannóg in Lough Derravarragh in the early 1980s. Hanging within it were three portions of broad-band armrings. Together the four silver objects weight 56 gm.
Associations:
Three portions of Hiberno-Viking broad-band armrings, two of which join to form a complete ring; three lead weights with ornamented mounts.
*Bibliography:*
Unpublished.

**No. 15. Nr. Raphoe, Co. Donegal.** Pl. 3
In private possession Subgroup B
*Description:*
Formed from a rod of circular cross-section which tapers towards the terminals. It is coiled one and a half times so that one side of the ring presents a double aspect. The terminals are loosely twisted around the hoop. Unornamented. Max ext. diam: 7.5cm; diam. of rod: 2.5mm.
*Remarks:*
The hoard from which this object derives is reported to have been found in 1903/04 at the base of a drystone ditch near Raphoe. It was auctioned by *Sotheby Parke Bernet and Co.* in 1979, and its present provenance is unknown.
*Associations:*
Four complete ingots, three complete Hiberno-Viking broad-band armrings (one unornamented); one complete example of 'ring-money'; one complete lozenge-sectioned ring; fragment of same.
*Bibliography:*
*Sotheby's Sale Catalogue, 10th July 1979,* lot 29; Graham-Campbell 1988, 102-111.

**No. 16. Vestre Rom, Vest-Agder, Norway.** Pl. 4
Hist. Mus. Bergen: Reg. No. 1903. 69a Subgroup B
*Description:*
Formed from a rod of sub-oval cross-section which tapers markedly to the ends. It is coiled one and a half times. The ends are tightly wound around the hoop, which is ornamented with a continuous row of stamped opposed-triangle motifs (each with a single raised pellet). Ext. diams.: 9.2cm x 7.3cm; max. th. of rod: 6mm.
*Remarks:*
The hoard from which this ring derives was found in 1903 at a depth of *c.* 1m. It weighed 0.32kg, and comprised three complete armrings and portion of a fourth. The former hung within one another.
*Associations:*
Two complete Hiberno-Viking broad-band armrings and portion of a third.
*Bibliography:*
Shetelig 1903, 28-30; Grieg 1929, 239-240.

**No. 17. Nr. Galway, Co. Galway.** Fib. 1b
N.M.I.: Reg. No. W.72 (81) Subgroup C
*Description:*
Formed from a rod *c* 65cm in overall length, of sub-oval cross-section. One terminal is missing, the other tapers to an approx. circular cross-section. The rod is coiled two and a half times, resulting in one side of the ring presenting a triple aspect. The extant terminal is twice wound loosely around the hoop. The outer face of the rod is ornamented by a continuous row of punched quatrefoil motifs, some of which are quite worn. A separate length of plain rod is wound loosely around the hoop at one point. Ext. diams: 7.2cm x 7.45cm; max. dims. of rod: 3.5mm x 3mm; weight: 46.7g.
*Remarks:*
From a hoard discovered near Galway in 1854. The other components were melted down by a Galway silversmith and no record of them is known to survive.
*Associations:*
A 'considerable number' of other rings of unknown type (not extant).
Bibliography:
Armstrong 1914, 292; Bøe 1940, 116; Briggs 1981, 81.

**No. 18. Gausel, Rogaland, Norway.** Pl. 5, left
Hist. Mus. Bergen: Reg. No. 4233N,a Subgroup C
*Description:*
Formed from a rod of sub-oval cross-section which has been coiled two and a half times, resulting in one side of the ring presenting a triple aspect. The terminals are wound thrice around the hoop. The outer face of the rod is ornamented with minute opposed-triangle motifs. The ring is complete but somewhat corroded. max. ext. diam: 10.4cm; max th. of rod: 3mm.

**No. 19.** Pl. 5, right
Hist. Mus. Bergen: Reg. No. 4233N,b Subgroup C
*Description:*
Formed from a rod of sub-oval cross-section, coiled two and a half times. The outer face of the rod is ornamented with the same stamp used on No. 18. Complete but somewhat corroded. Max. ext. diam. 10.5cm; max. th. of rod 3mm.
*Remarks:*
The Gausel rings were amongst the grave-goods from a rich, later ninth century burial discovered in 1882. It is generally considered that the bulk of the grave-goods represent loot derived from Ireland.
*Associations:*
A series of gilt-bronze horse-harness mounts; drinking-horn terminals; hanging bowls; jet finger ring; oval brooches; beads; etc.
*Bibliography:*
Wamers 1985, 90-100, No. 90.

**No. 20. Dysart Island, Co. Westmeath.** Not illustrated
N.M.I.: Reg. No. 1981: 296.97 Unclassifiable
*Description:*
Small fragment of a rod of sub-oval cross-section, cut and snapped at both ends. It retains its curvature. The outer face is ornamented with a continuous row of opposed sub-oval stamped motifs. Max. l: 1.1cm; dims. of rod: 5mm x 4mm; weight: 1.58g.
*Remarks:*
From a large (*c.* 8.5kg), coin-dated hoard of hack-silver discovered on the western side of an island in Lough Ennell during the late 1970s. Its numismatic content suggests a deposition date of *c* 910.
*Associations:*
Coins of Kufic, Viking (East Anglian and Northumbrian), Anglo-Saxon, and Continental origin; five complete ingots and eighty ingot fragments; twenty-eight pieces of cut ornaments including fragments of ball-brooches, bossed-penannular brooches, Hiberno-Viking broad-band armrings, trefoil-headed pin, ribbon-bracelets, cast armring, and fragments of wires showing evidence of torsion.
*Bibliography:*
Ryan *et al* 1984, 334-381.

**No. 21a. Creagduff, Co. Westmeath.** Not illustrated
N.M.I.: Reg. No. 1988: 223e Unclassifiable
*Description:*
Small fragment of a rod of oval cross-section, displaying cuts at both ends. The outer face is ornamented with a continuous row of minute opposed-triangle motifs. The ornament is worn in places. Max. l: 1.9cm; max. dims. 5.5mm x 3mm; weight: 2.2 g.

**No. 21b.** Not illustrated
N.M.I.: Reg. No. 1988: 223f Unclassifiable
*Description:*
Small fragment of a rod of oval cross-section, cut at both ends. The outer face bears stamped ornament similar to No. 21a. Max. l: 1.3cm; max. dims. 5.7mm x 3mm; weight: 1.55g.
*Remarks:*
The two fragments appear to have been stamped with the same

punch and probably derive from a single armring. They form part of a hoard discovered in a hut-site on a crannóg near Cookanamuck Island, Lough Ree.

*Associations:*

One complete ingot and three ingot fragments; four fragments of Hiberno-Viking broad-band armrings.

*Bibliography:*

Unpublished.

**No. 22. 'Co. Antrim'.** Not illustrated
U.M.: Reg. No. A19. 1990 Unclassifiable

*Description:*

Fragment of a rod of plano-convex cross-section, tapering to circular section at one end, which shows evidence of torsion. The outer face of the broader end is ornamented with opposed stamped motifs of crescentic form. The tapered end is unornamented. Max. diam. of coil: 1.45cm; max. dims. of rod: 4mm x 2mm; weight: 3.1g.

*Remarks:*

The fragment appears to be derived from the terminal area of a ring. The hoard, which weighs 0.634kg, has only recently come to light. Nothing is known about its find-circumstances or precise provenance. The presence in it of a single coin suggests a deposition date of *c* 910.

*Associations:*

Two ingot fragments; three fragments of Hiberno-Viking broad-band armrings ; one St. Edmund coin.

*Bibliography:*

Unpublished (but see Graham-Campbell *forthcoming* b).

**No. 23. Cuerdale, Lancashire.** Not illustrated
B.M.: Reg. No. 41, 7-11, 524 Unclassifiable

*Description:*

Small fragment of rod of oval cross-section, cut and snapped at both ends and bent into a u-shape. The outer face is ornamented with a continuous row of opposed oval stampings interspersed by minute ring-stamps. The oval stamps contain one and two raised pellets respectively. The fragment exhibits three nickings. L. 2.1cm; max. dims. of rod: 3mm x 3.5mm; weight: 3.30g.

**No. 24.** Not illustrated
B.M.: Reg. No. 41, 7-11, 711. Unclassifiable

*Description:*

Fragment of rod of semi-circular cross-section, cut at both ends. The outer face is ornamented with a continuous row of sub-oval/ opposed- lozenge stamped motifs, each containing a single raised pellet. The fragment exhibits one nicking. L. 2cm; max. dims. of rod: 4mm x 6mm; weight: 2.583g.

**No. 25.** Not illustrated
B.M.: Reg. No. 41, 7-11, 712. Unclassifiable

*Description:*

Fragment of rod of semi-circular cross-section, cut at both ends. The outer face is ornamented with a continuous row of conjoined/ opposed lozenge-shaped stampings, each of which contains a single raised pellet. The fragment exhibits one nicking. L. 3.7cm; max. dims. of rod: 4mm x 2.5mm; weight: 2.58g.

**No. 26.** Not illustated
Assheton Coll: Reg. No. A157 Unclassifiable

*Description:*

Small fragment of rod of approx oval cross-section, cut at both ends. The outer face is ornamented with a continuous row of minute opposed triangles. L. 0.7cm; max. dims. of rod: 4mm x 3mm; weight: 0.6g.

*Remarks:*

The four Cuerdale fragments each appear to be derived from different rings. From a large (*c*. 40kg) coin-dated hoard discovered in the bank of the River Ribble in 1840. Its numismatic content suggests a deposition date of *c*. 905.

*Associations:*

Coins of Kufic, Anglo-Saxon, Viking (East Anglian and Northumbrian), Continental, and Byzantine origin; over three hundred and fifty ingots and ingot fragments; over one hundred Hiberno-Viking broad-band armrings (both ornamented and plain); over forty fragments of bossed penannular and ball-brooches; plaited and twisted arm- and neckrings (both complete and fragmentary); ribbon bracelets; cast bracelets, rod-armrings; Permian rings, etc.

*Bibliography:*

See Graham-Campbell *forthcoming* a.


## Acknowledgements

This paper is based on portion of a thesis presented in partial fulfillment of the requirements for the degree of M.A. to the National University of Ireland in 1984. The author expresses his gratitude to his supervisor Professor Etienne Rynne, Department of Archaeology, University College, Galway, and to Professor James Graham-Campbell, Institute of Archaeology, University College, London, for their guidance and assistance. He also wishes to acknowledge the National University of Ireland and the Danish Ministry of Education for awarding him, respectively, a travelling studentship and a research scholarship during 1984-85, which enabled him to study related Viking Period material in Britain and Scandinavia. He gratefully acknowledges receipt of a Royal Irish Academy grant in 1986 towards the cost of illustration of the thesis material, some of which is used in this paper. Dr. M. Ryan, Keeper of Irish Antiquities, National Museum of Ireland, kindly granted permission to study and publish material in his care, while Mrs. L. Webster , Dr. S. Kaland and Mr. Cormac Bourke facilitated the author's work in the British Museum (London), the Historisk Museum (Bergen) and the Ulster Museum, Belfast respectively. In addition to those mentioned in the footnotes he wishes to thank Ms. Patricia Johnson for drawing Figs. 1, 2 and 4 and Mr. Phelim Manning for preparing Fig. 3 and Ms. Rhoda Cronin for Fig. 4.


## Footnotes

(1) In Sheehan (1984) and Graham-Campbell (1987) this type of armring is termed the 'double armlet' in view of the double aspect presented by all complete examples known at that time. However, the form of the Gausel rings, and the nature of the surviving example from the hoard provenanced to 'near Galway town', now make this term inappropriate.

(2) The true provenance of this hoard has only recently come to light. In Sheehan (1984) and Graham-Campbell (1987) it is simply referred to as the "Lough Derravarragh" hoard. There is a probably spurious association of a coin of Eadmund (c. 946). I am grateful to Dr. P.F. Wallace, Director, National Museum of Ireland, for informing me of the hoard's existence and for arranging for me to study it.

(3) I am grateful to the Ulster Museum for permission to refer to this hoard.

(4) An armring from the Rathmooley, Co. Tipperary, hoard and a plaited finger-ring in the collection of the Victoria and Albert Museum (London) were both apparently manufactured by hammering, while a number of objects in the Cuerdale hoard and the gold armring from Virginia, Co. Cavan are formed of drawn wire (Oddy 1984).

(5) All *t.p.q.* dates on Table 4 are after Blackburn and Jonsson (1981) or Hårdh (1976). The hoards from Barkåkra and Lackalänga (both Schonen, Sweden) are omitted because of uncertainty as to their deposition dates.

(6) As has been pointed out already, the application of punched ornament to coiled rings tends to render their cross-sections oval and sub-oval in form. The majority of rod-armrings of Norwegian provenance, which tend to be unornamented, are of circular cross-section, though three individual variants (of octagonal and lozenge-shaped section) occur in the Grimestad and Tønsberg-egnen (both Vestfold) hoards.

(7) Permian rings are predominantly Danish in their Scandinavian distribution, but the presence of fragments in two Norwegian hoards - those from Torvik (Møre og Romsdal) and Gjulem (Østfold) - opens the possibility that they were in wider circulation in the north than is commonly thought. A number of fragments are represented in Irish hoards.

## References


Armstrong, E.C.R. 1915 Catalogue of the silver and ecclesiastical antiquities in the collection of the Royal Irish Academy by the late Sir William Wilde, M.D., M.R.I.A. *Proc. Roy. Irish Acad.* 32c, 278-312.

Blackburn, M. and H. Pagan 1986 A revised check-list of coin hoards from the British Isles, c. 500-1100 in M. Blackburn, (ed.) *Anglo-Saxon Monetary History: Essays in memory of Michael Dolley* Leicester, 291-313.

Blindheim, C. 1981 Slemmedal-skatten: en liten orientering om et start funn *Viking* 45, 5-31.

Blackburn, M.A.S. and K. Jonsson, 1981 The Anglo-Saxon and Anglo-Norman element of North European coin finds in M.A.S. Blackburn and D.M. Metcalf, (eds.) *Viking Age Coinage in the Northern Lands*, i, BAR International Series 122, Oxford, 147-255.

Briggs, C.S. 1981 On the Viking-age Silver Hoards from Co. Galway *J. Galway Arch. & Hist. Soc.* 38, 79-82.

Briggs, C. S. & Sheehan, J. 1987 A hoard of Dispersed Viking-age Arm-rings from 'The Liffeyside', County Dublin *Antiq. J.* 67, 351-352.

Bruce, J.C. 1980 *A Descriptive Catalogue of Antiquities, chiefly British at Alnwick Castle*, Newcastle-upon-Tyne.

Bøe, J. 1940 *Norse Antiquities in Ireland*, (H. Shetelig (ed.), *Viking Antiquities in Britain and Ireland*, III), Oslo.

Graham-Campbell, J. 1975a Bossed Penannular Brooches: a review of recent research *Medieval Archaeol.* 19, 33-47.

Graham-Campbell, F. 1975b The Viking-age silver and gold hoards of Scandinavian character from Scotland *Proc. Soc. Antiq. Scotland* 107, 114-135.

Graham-Campbell, J. 1976 The Viking-age silver hoards of Ireland in Almquist, B. and D. Greene (eds.) *Proc. Seventh Viking Congress*, Dublin, 31-74.

Graham-Campbell, J. 1980 *Viking Artefacts: a select catalogue*, London.

Graham-Campbell, J. 1986 The re-provenancing of a Viking-Age hoard to the Thames, near Deptford, (S.E. London) *Brit. Numis. J.* 56, 186-187.

Graham-Campbell, J. 1987 Some archaeological reflections on the Cuerdale hoard in D.M. Metcalf, (ed.) *Coinage in Ninth-Century Northumbria*, B.A.R. 180, 329-344.

Graham-Campbell, J. 1988 A Viking Age Silver Hoard from near Raphoe, Co. Donegal in G. MacNiocaill and P.F. Wallace (eds.) *Keimelia: Studies in Medieval Archaeology and History in Memory of Tom Delaney*, Galway, 102-111.

Graham-Campbell, J. *forthcoming* a *The Cuerdale Hoard and related Viking-age silver from Britain and Ireland in the British Museum*, London.

Graham-Campbell, J. *forthcoming* b A Vital Yorkshire Viking Hoard Revisited, in P.A. Rahtz *Festschrift*, forthcoming.

Grieg, S. 1929 Vikingetidens Skattefund *Universitetets Oldsaksamling Skrifter* II, 177-311.

Hårdh, B. 1976 *Wikingerzeitliche Depotfunde Aus Südschweden*, Varberg.

Hawkins, E. 1847 An Account of Coins and Treasure found in Cuerdale, *Archaeol. J.* 4, 111-130, 189-199.

Kruse, S. 1986 The Viking age silver hoard from Scotby: the non-nimismatic element *Trans. Cumb. and Westm. Antiq. Archaeol. Soc.* 86, 79-83.

Munksgaard, E. 1962 Skattefundet Fra Duesminde *Aarbøger for Nordisk Oldkyndighed og Historie*, 94-112.

Oddy, E.A. 1977 The Production of Gold Wire in Antiquity *Gold Bulletin* 10, 78-87.

Oddy, E.A. 1984 Ancient jewellery as a source of technological information - a study of techniques for making wire *Proc. Fourth International Restorers Seminar*, Budapest.

Petersen, J. 1928 *Vikingetidens Smykker*, Stavanger.

Ryan, M, R. Ó Floinn, N. Lowick, M. Kenny and P. Cazalet 1984 Six silver finds of the Viking Period from the vicinity of Lough Ennell, Co. Westmeath *Peritia* 3, 334-381.

Scharff, R.F. 1906 The Exploration of the Caves of County Clare *Trans. Roy. Irish Acad.* 33b, 42-75.

Scott O'Connell, D.H. 1938 Viking Period Silver Ornaments from Rathmooney, County Tipperary *J. Cork Hist. and Archaeol. Soc.* 43, 125-126.

Sheehan, J. 1982 A Viking Age Silver Hoard from the River Shannon, Co. Clare *North Munster Antiq. J.* 24, 89-91.

Sheehan, J. 1984 *Viking Age Silver Arm-Rings From Ireland*, M.A. thesis, N.U.I. (University College, Galway).

Sheehan, J. 1989 A Viking-Age Silver Armring from Portumna, Co. Galway *J. Galway Archaeol. and Hist. Soc.* 42, 125-130.

Sheehan, J. 1990 A Pair of Viking Age Animal-Headed Armrings from Co. Cork, *J. Cork. Hist. and Archaeol. Soc.* 95, 41-54.

Sheehan, J. 1992 The Rathmooley Hoard and Other Finds of Viking Age Silver from County Tipperary *Tipperary Hist. J.* 210-216.

Shetelig, H. 1903 Fortegnelse over de til Bergen museum in 1903 *Bergen Mus. Aarb.* 28-30.

Skaare, K. 1976 *Coins and Coinage in Viking-Age Norway*, Oslo.

Wamers, E. 1985 *Insularer Metallschmuck in wikingerzeitlichen Gräbern Nordeuropas*, Neumünster.