The Cross of Cong and some aspects of goldsmithing in pre-Norman Ireland

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ABSTRACT: The Cross of Cong is the most important reliquary surviving from early medieval Ireland and belongs to a large corpus of pre-Norman, decorative, church metalwork from the late 11th and 12th centuries. The materials and techniques behind the manufacture of this most impressive piece of metalwork are examined. Reviewing the historical and archaeological evidence for goldsmithing in Ireland during this period identifies gaps in current knowledge about this craft. Sources of raw materials, whether native or imported, are also discussed, with a particular emphasis on the source and availability of gold. Finally, by examining the Cross in some detail, the range of techniques practised by goldsmiths in Ireland in the period c1050–c1150 can be appreciated.

Introduction

The Cross of Cong (NMI R.2833) is a *tour-de-force* of early medieval (*c*400–1200 AD) metalwork and was made towards the end of a period of mastery of goldsmithing in Ireland that lasted for about six hundred years (Fig 1). It is a processional cross, made to enshrine a relic of the True Cross, and can be dated historically to *c*1123. Despite its public display in Dublin for well over a century and a half and its appearance in many general books on Irish art and archaeology (*eg* Lucas 1973, 136–8; Harbison 1999a, 274–5; Wallace and Ó Floinn 2002, 232) it has received very little detailed attention in the published literature. The majority of important references belong to the 19th century (MacCullagh 1836–40; Petrie 1847–50; Wilde 1867, 192–6; Stokes 1895) and, as is the case with most of the Irish reliquaries that carry inscriptions, more ink has been spilled debating the reading of the inscription than in discussing any other aspect of this complex artefact (*eg* Ó Neill 1854–5; Ó Donovan 1856–7; Petrie 1878, 120; Macalister 1949, 15–16, no 552; Michelli, 1996, 26–28; Ó Riain and Murray 2005).

Wright (1901) and, more recently, Bourke (1989) have written about some aspects of its ornamentation, but it was the de Paors (1958, 170–1), followed by Henry (1970, 106–10) in more detail, who first discussed the Cross of Cong and its place in 11th- and 12th-century Irish metalwork. Ó Floinn (1987a, 180, 186) advanced some aspects of Henry's work on the Cross and, since then, has carried out some, as yet, unpublished research on the reliquary's assembly marks (pers comm). While both Henry and Ó Floinn have given some attention to the technical side of the Cross, up to now there has been no detailed survey of the techniques employed in its manufacture. The background to the Cross of Cong is first discussed: in terms of the corpus to which it belongs, its historical context, goldsmiths and the archaeological evidence for goldsmithing in the late 11th and 12th centuries, as well as mining and raw materials. The main body of the text then focuses on the Cross and the metalworking techniques used in its decoration and construction. It becomes apparent that the amount of gold used in ecclesiastical metalwork in this period in Ireland was small; the main metal used was copper-alloy. However, the term *goldsmith* is used to describe someone who worked with gold, along with other metals such as silver and copper, as oppose to a *coppersmith* or *blacksmith*, who would not generally work with gold.

The corpus

In addition to the Cross of Cong, around one hundred pieces of Irish decorative church metalwork are known from the late 11th and 12th centuries (see Table 1). These artefacts range in complexity from large portable reliquaries to single mounts. Insular crosiers were still being manufactured in this period, as were book- and bell-shrines (Figs 2–4). Although only one fragment survives, it seems that small house-shaped shrines similar to those from the 8th and 9th centuries (Youngs 1989, 134–40) continued to be made (Fig 5), as were hanging-bowls, *contra* Henry (1970, 74), who argued that they 'were not manufactured after the mid-ninth century.' The traditional, Insular, ecclesiastical artefacts, mentioned so far, contrast with new reliquary forms such as St Lachtin's Arm and St Manchan's Shrine (Figs 6–7), as well as with new three-dimensional images of the crucifixion, cast in metal.

Obviously there has been a bias in the type of material that has survived from this period. The Reformation and the Dissolution of the monasteries have, no doubt, taken a heavy toll. For instance, no large tomb shrines survive from the period, although the stone skeuomorph at Clones, Co Monaghan (Harbison 1999b) gives one an idea of what they may have looked like. There are no surviving chalices or patens of this date, although it has been argued by Bourke (2000) that two simple round bells may originally have been 12th century cups or chalices (see Rynne (2000) for the argument against this). While most of the smaller incomplete items in the corpus are chance finds from ecclesiastical sites or the

Figure 1: Front of the Cross of Cong, height 760mm (Copyright NMI). [see also back cover]

Table 1: The corpus of Irish decorative church metalwork of the late 11th and 12th centuries

Type	No (inc fragments)	Comments and references	Figure
crosier	25	all are probably of Insular type (Murray forhcoming), *eg* that from Clonmacnoise, Co Offaly (de Paor 1977, 185–6)	2
bell	12	*eg* Cashel bell-crest (Sheehan 1988)	
bell-shrine	6	*eg* St Patrick's Bell-shrine (Ó Floinn 1983a, 167–8, cat no 79b)	3
book-shrine	4	*eg* the shrine of the *Cathach* (Henry 1970, 88–92)	4
other reliquary	6	mount from a house-shaped shrine (NMI R.2960; Lucas 1973, 143–4, fig 103) St Lachtin's Arm (Murray 2004) the shrine of St Patrick's Tooth (Wallace and Ó Floinn 2002, 270, fig 7:25–26) the *Breac Maodhóg* (Harbison 1999a, 296–7, figs 189–93) St Manchan's Shrine (Kendrick and Senior 1937) decorated drinking horn, at least subsequently used as a reliquary (Ryan 1988)	5 6 7
appliqué figure	6	probably originally from larger reliquaries (Bourke 1988; Murray 2003)	
crucifix figure	18	(Ó Floinn 1987b; Bourke 2003)	
crucifix plaque	8	(Harbison 1980; Rice 1990–1; Bourke 1993). They may have belonged to crosses, reliquaries, or possibly altar fronts (Kelly 1991; Ó Floinn 1998b, 96)	
hanging bowl	1	the Blackwater bowl (Bourke 1991)	
hanging bowl mount	3	*eg* escutcheon from near Clonmacnoise (Bourke 2000, 338; Mullarkey 2004, 136)	
mount	2	possibly from crosses similar to the Cross of Cong: NMI R.4016; NMI P.1359 (Ó Floinn 1987a, 186, fig IId; Ó Floinn 1998a, 196, fig 4)	
other	12	including mounts, vessels and fragments of unknown function	

Figure 2: Clonmacnoise crosier, height 252mm (Copyright NMI).

Figure 5: Reliquary mount from a house-shaped shrine, length 55mm (Copyright NMI).

Figure 3. St Patrick's Bell-shrine, height 264mm (Copyright NMI).

Figure 4: The shrine of the Cathach, length 185mm (Copyright NMI).

fields and rivers near them, at least 60% of the more complex pieces, the reliquaries and crosiers, have been passed down through the centuries directly by hereditary keepers, who were often the descendants of the *erenaghs* or stewards of the monastic lands (Ó Floinn 1995, 103–4). Continuing devotion to the enshrined bells and books, and to crosiers associated with particular saints, as well as their portability, which meant that they could be hidden, has ensured their survival. Many of these items continued to be venerated through the centuries in the same localities in which they were made in the medieval period. However, a variety of factors, both religious and social, led to the disposal of many of them in the 19th century when antiquarian collectors acquired them.

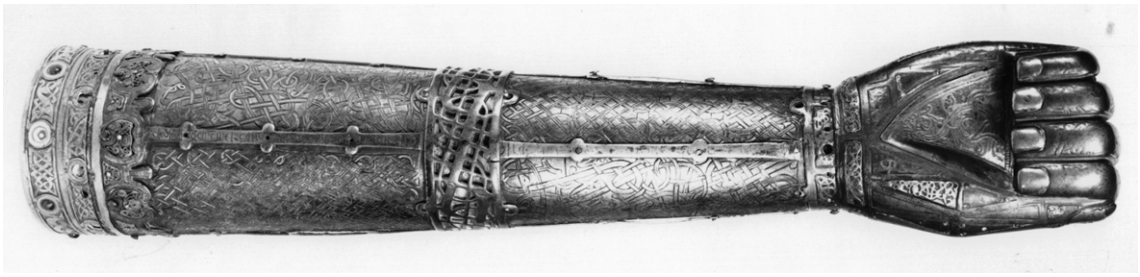

Figure 6: St Lachtin's Arm, length 390mm (Copyright NMI).

Historical background

The Irish church was going through a period of reform during the first half of the 12th century, which saw its reorganisation into a number of diocese and archdiocese (Gwynn 1992; Bracken and Ó Riain-Raedel 2006). This, combined with eager secular patrons, probably resulted in an extra demand on goldsmiths as ecclesiastical sites sought to achieve, as well as mark, their new status by commissioning reliquaries and altar furnishings. By the 1120s the Connacht king, Turlough O'Connor (*Irish*, Toirdelbach Húa Conchobáir), emerged as the most powerful king in Ireland and his patronage is publicly acknowledged in inscriptions on both the Cross of Cong and on two High Crosses at Tuam, Co Galway (Stalley 1994, 131–3; Harbison 1999c, 45). A silver goblet, a silver cup with a gold cross on it and a drinking-horn ornamented with gold are some of the gifts he made to the altar of the great church in Clonmacnoise in 1115, which were stolen in 1129 (*Annals of the Four Masters*) although it may be noted that there is slight variation in the description of the three gifts listed in both accounts. The decorated drinking-horn may have been similar to the contemporary Irish example from the treasury of a convent in Tongeren, Belgium, which was probably also a gift from an Irish king (Ryan 1988). O'Connor's obit in the *Annals of Tigernach* (1156) records his bequest to:

> 'the Lord and to the churches of Ireland. So he gave 160 ounces of gold and 60 marks of refined silver, and offered all his treasures, except sword or drinking-horn or shield or armour, both horses and cattle and raiment, and *fidhcill*, and *brandam* [board games], and bows and quivers and slings; and he himself distributed them all, and ordained the share of each church according to order.'

His involvement in acquiring a relic of the True Cross and its enshrinement, in what is now known as the Cross of Cong, is also detailed in the Annals:

> 'Christ's cross in Ireland in this year, and a great circuit was given to it by the king of Ireland, Toirdelbach Húa Conchobáir, and he asked for some of it to keep in Ireland, and it was granted to him, and it was enshrined by him at Roscommon (*AT*, 1119–1123).'

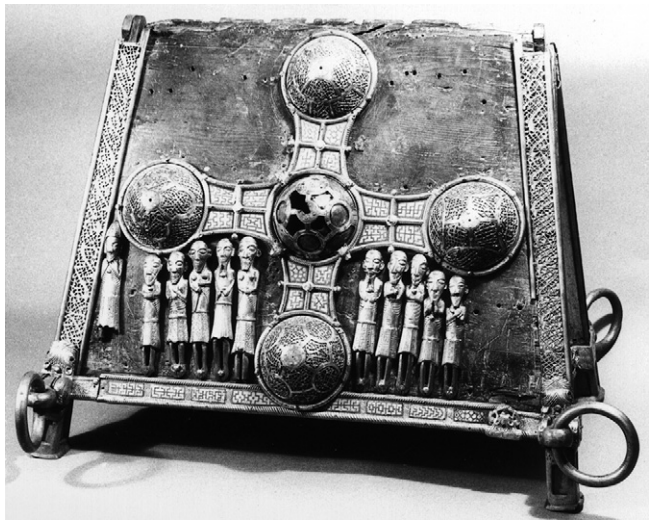

Figure 7: St Manchan's Shrine, length 590mm (Copyright NMI).

A similar entry in the *Chronicum Scotorum* dates this event to the year 1123. So one can say with confidence that the Cross was made in or around 1123. These entries conflict with the opinion of Henry (1970, 109), who felt that work probably started on the Cross 'around 1122 or 1123 …[and] may well have been finished shortly after 1127.' It is unlikely that it took four or five years to make it and there is little evidence to support such an opinion. The Cross itself bears the following inscription (parts are seen in Figs 9, 13 and 15):

> + HÁC CRUCE CRÚX TEGITUR QUÁ PÁSUS CONDITOR ORBIS/
> OR[ÓIT] DO MUREDUCH U DUBTHAIG DO SENÓIR ÉREND/
> OR[ÓIT] DO THERRDEL[BUCH] U CHONCHO[BAIR] DO RÍG EREND LASA NDERRNAD IN GRES SA/
> OR[ÓIT] DO DOMNULL M[A]C FLANNACÁN U DUB[THAIG] DE IMLIB CONNACHT DO CHOMARBA CHOMMAN ACUS CHIARÁN ICA N[D]ERRNAD IN GRES SA/
> OR[ÓIT] DO MAÉL ÍSU M[A]C BRATDAN U ECHA[C]H (?) DORIGNI IN GRES SA/
> + HÁC CRUCE CRÚX TEGITUR QUÁ PASUS CONDITOR ORBIS

This can be translated as:

> + By this cross is covered the cross on which the creator of the world suffered/
> A prayer for Muiredach Ua Dubthaig Senior Ecclesiastic of Ireland/
> A prayer for Tairdelbach Ua Conchobair King of

Ireland by whom was made this ornament/
A prayer for Domnall mac Flannacáin Uí Dubthaig from the borders of Connacht, successor of Commán and Ciarán by whom was made this ornament/
A prayer for Máel Ísu mac Bratáin Uí Echach who made this ornament/
+ By this cross is covered the cross on which the creator of the world suffered
(Ó Riain and Murray 2005, 20)

Muiredach and Domnall Ua Dubthaig (O'Duffy), referred to in the inscription on the Cross of Cong, belonged to a very important Connacht ecclesiastical family that had many associations with the Augustinian Abbey at Cong and so the eventual presence of the Cross there should come as no surprise. Domnall mac Flannacáin Uí Dubthaig, whom the inscription describes as abbot of Roscommon and Clonmacnoise, is recorded in his obit in the *Annals of Loch Cé* (1137) as 'bishop of Elphin and successor of Ciarán,' while the *Annals of the Four Masters* (1136) describe him as 'archbishop of Connacht.' When Muiredach Ua Dubthaig died in 1150 the *Annals of the Four Masters* describe him as 'archbishop of Connacht and chief senior of all Ireland.' However, while Tuam did not officially receive its metropolitan status until the Synod of Kells two years later, the previous acquisition of such an important relic for Connacht and investments in the monastery of Tuam (Gwynn and Hadcock 1970, 98; Stalley 1994; Etchingham 2000), fuelled by the ambitions of O'Connor and the O'Duffys, must have been among the major influencing factors for the establishment of an archdiocese there.

Goldsmiths

Very little is known about goldsmiths and their organization and training in the early medieval period. We know that the Cross was made at Roscommon and that Máel Ísu mac Bratáin Uí Echach made it, but whether he was permanently resident at Roscommon is impossible to say. O'Donovan (1856–7, 39), following Petrie's (1847–50, 578) reading of the craftman's name on the inscription as 'Uí Echan,' identified him as Gillachrist Ua hEchain (*AFM* 1136), who he says was abbot of Cloncraff, Co Roscommon. While both Wilde (1867, 195) and Henry (1970, 108) followed this identification, Ryan (2002a, 249) has doubted it and Michelli (1996, 28) has dismissed it. However, even the identification of Gillachrist Ua hEchain as the abbot of Cloncraff is speculative, as he is only mentioned as 'successor of Finnen' and so may have been abbot of Clonard, Co Meath. Indeed, even given that the names Máel Ísu and Gillachrist have the same meaning ('servant of Christ'), the surnames are different ('Uí Echain' and 'mac Bratáin Uí Echach'). In conclusion, there is no firm evidence to suggest that this is the individual in question. Given the surname, Uí Echach, it is possible that the he originally came from either east Ulster or south Munster where the name occurs (Byrne 2001, 120–1, 172–3).

Máel Ísu was not unique in being included in a dedicatory inscription, as most of the surviving inscriptions on elaborate church metalwork of the period record the craftsman's name. On St Patrick's bell-shrine Condulig Ua hInmainen and his sons are named, which suggests that the craft was hereditary and Comber (2004, 12) points out that there is evidence of a hierarchy with a master craftsman (*Irish*, ollav), an ordinary craftsman (*Irish*, cerd) and apprentices (*Irish*, felmac). With a team of goldsmiths working on any one piece, one may imagine that commissions were completed quite quickly, perhaps in a matter of months? Indeed, it is highly unlikely that secular and church patrons would have had the patience to wait for years while a single goldsmith worked on a major piece.

That goldsmiths held a certain amount of status and prestige in the 11th and 12th centuries is evident by the fact that their names appear on the works they crafted. However, according to the *Uraicecht Becc*, an early Irish law tract (Kelly 1988, 63; Whitfield 1993a, 129), the gold or silversmith (*Irish*, cerd) only had the same honour-price as the coppersmith (*Irish*, umaige) and the blacksmith (*Irish*, gobae). Nevertheless, there are problems with identifying goldsmiths in the early Irish literature, because while the Irish word *cerd* most frequently means a gold- or silversmith, it is also used in a more general sense to mean a craftsman or artisan (*DIL*, 139, 32–3).

Archaeological evidence for goldsmithing in Ireland in the late 11th and 12th centuries

For the early medieval period Whitfield (1990, vol I, 47–64; 1993a, 131) has discussed the archaeological evidence for goldworking specifically; Ryan (2002a, 246–60) has looked at the evidence on Irish monastic sites for fine metalworking and Comber (2004) has collected the evidence for non-ferrous metalworking from all site types. Bayley's scientific analyses have been particularly successful in identifying the working of both gold and silver both from the Dalriadic site of Dunadd in the 7th century (Lane and Campbell 2000, 210) and at the Coppergate site in York in the 10th and 11th centuries (Bayley 1992). Indeed, if similar analyses

were carried out on some of the material from older Irish excavations, it is likely that the evidence for the working of these metals would increase. The advantage of modern analytical methods, such as XRF, is that they can be non-destructive, unlike those used by Moss (1927) in his analysis of Irish crucibles.

Nevertheless, while there is a reasonable amount of archaeological evidence for fine metalworking in the early medieval period, very few of these sites are dated to the late 11th and 12th centuries. The most substantial evidence comes from Dublin, where the NMI excavations turned up plentiful evidence for the craft. A particularly intensive area of metalworking was discovered at Christ Church Place (Ó Ríordáin 1976, 138), where a large quantity of crucibles was recovered from 11th and 12th century levels, along with around 130 motif-pieces, the largest concentration known (O'Meadhra 1987, 43, fig 24). The excavations at Christ Church Place also produced moulds, raw materials, and finished and unfinished artefacts. Scientific analysis of the metalworking evidence from these excavations is in progress (Justine Bayley pers comm).

At present, archaeological evidence for fine metalworking from ecclesiastical sites in this period is not substantial. After the discovery in 1979 of a number of silver Hiberno-Norse coins in the grounds of St Ciarán's National School, which is adjacent to the major monastic site of Clonmacnoise, Raghnall Ó Floinn of the NMI conducted a limited excavation of the find spot (Ó Floinn and King 1998, 120–5). The hoard, which was dated to the last decade of the 11th century, consisted of twenty-seven complete and three fragmentary coins, as well as part of a twisted gold finger ring and a copper-alloy ingot. Other finds from the excavation included a portion of a small crucible, two portions of a tuyère, and part of a valve of a two-piece mould, as well as evidence for iron smelting. Given the composition of the hoard and the associated evidence for metalworking Ó Floinn considered it to belong to a goldsmith. A fragment of a trial-piece was also found in the new graveyard at Clonmacnoise in 1963, which may also date to this period (O'Meadhra 1979, 35, cat no 17; O'Meadhra 1987, 33–4). Given the importance of Clonmacnoise and the fact that some of the finest pieces of church metalwork from the late 11th and 12th centuries are from there, it is perhaps no surprise that some evidence of contemporary fine metalworking was discovered.

Contemporary motif-pieces have been recovered from the important centres of Killaloe and Inis Cealtra, where a small silver ingot was also found, as well as the royal site of Beal Boru (O'Meadhra 1979, 34, 85–7, cat. nos. 15, 113 and114; O'Meadhra 1987, 31–2, 59–61) and the Hiberno-Norse town of Waterford (O'Meadhra 1997, 699–702), which suggests the possible location of workshop centres in the south of the country. Nonetheless, apart from the material from Dublin, the archaeological evidence for fine metalworking in this period is still very slim.

Sources of raw materials

Mining

There is very little evidence for mining in the early medieval period and this is mostly literary rather then archaeological. O'Brien (2004, 405) notes an early 9th century reference in *Historic Brittonum*, ascribed to the Welsh monk Nennius, in which the author describes the mineral wealth of the area around Killarney, Co Kerry. This historical reference seems to be supported by the archaeological evidence uncovered in O'Brien's excavations of the largely prehistoric copper mines at Ross Island, near Killarney. Although direct evidence of mining was not discovered, O'Brien did find evidence for early medieval copper smelting at five locations in the mine site, with three of the slag deposits dated by radiocarbon to the 8th century (*ibid*, 406). At two of these locations small metalworking furnaces were discovered, which date to the 7th or early 8th century (*ibid*, 449) and there was further evidence for copper smelting at a site excavated by O'Donnell (2000) at Scrahane, on the southern outskirts of Killarney town. Although this site is not yet published, it is also thought to date to the early medieval period. Scott (1990, 176–8), Comber (2004, 13, 99–100) and McLeod (2004, 110) discuss some of the early Irish laws concerning mining, and while this evidence is further proof that mining was taking place in early medieval Ireland, these texts mainly seem to relate to the mining of copper and iron. On the other hand, Whitfield (1998; 2001, 141) has drawn attention to an 8th-century law tract discussed by Kelly (1997, 435–6), which deals with the offence of digging someone else's silver-mine. This in turn was glossed in the 9th century to include iron, copper, tin and gold. This seems to indicate that both silver and gold were also being mined in Ireland.

Silver

Ryan (2002b, 1–15) explored the archaeological evidence for silver in pre-Viking Ireland and noted its widespread use by the 8th century, as witnessed by surviving artefacts, which led him to conclude that there must have been a regular source of supply. However, whether the silver was largely coming from native sources or through

importation is unknown. The latter is most likely, as scientific analysis of the silver objects in the Viking-age hoards from around Lough Ennell concluded that there was no silver from known native sources present (Ryan *et al* 1984) so it is unlikely that silver mines had been actively used in the preceding centuries. In terms of religious metalwork, there is no comparison between the large quantity of silver used in the 8th-century Ardagh chalice and the modest amounts used in some of the 11th- or 12th-century artefacts. A large amount of silver was also used in the Derrynaflan chalice and patten (Ryan 1983), which date to the Viking period. However, this contrast may be a result of survival as similar prestige communion vessels are absent from the archaeological record of the 11th and 12th centuries (see for example *AFM, AT* and *CS* 1129).

Certainly the Vikings were responsible for the importation of vast amounts of silver and there are over 130 silver hoards of Scandinavian character known from Ireland, which date between *c*800–*c*1170 (Sheehan 1998, 167). However, based on the surviving evidence, this does not seem to have had any major impact on ecclesiastical metalwork. Nevertheless, it certainly had an impact on secular metalwork, with the development of silver thistle and bossed penannular brooches. However, these brooches were often cut up as hack silver, proving that despite their aesthetic quality they were most valued as silver bullion (*eg* Johansen 1975, figs 34a–b, 48a–h, 53a–c; Graham-Campbell 1975, pl VIIc–d; Johnson 2001, figs 2, 14, 15, 17–19). Indeed, the economic influence silver had in Ireland saw it become, after cattle, the basic unit of exchange (Ó Corrain 1972, 73; Kelly 1988, 114; Comber 2004, 13).

Gold

While gold, in small quantities, was used in Ireland in the pre-Viking period, it is only during the Viking period that large amounts of gold occur, which was most likely imported. A survey of the Irish Annals revealed only three references to gold in the pre-Viking period (*c*400–795AD) and these can be described as either a mere mention (*FAI* 583), literary (*FAI* 721), or fictional (*AFM* 739; *AU* 752/3). On the other hand, in the period of Viking or Scandinavian influence (795–1169AD) 39 references to gold were noted in the Annals, the majority of which are quite specific, relating to its form and quantity.

The only two solid gold brooches from the early medieval period are the 'Dalriada' or Loughan brooch from Co Derry (Ryan 2004) and a brooch from Kilfinnane, Co Limerick (Ó Floinn 1993), both of which date to the 9th century. While Whitfield (1993b, 23) suggests a possible native gold source for them, Ryan (2004, 121) prefers a foreign Viking source. Indeed, while less common than silver hoards, Viking gold hoards, as well as a number of single finds, are known from Ireland. The largest Viking gold hoard came from Hare Island, Co Westmeath. Unfortunately, it was melted down soon after its discovery in 1802, but consisted of ten arm-rings weighing about 5kg and it is thought to have dated to the second half of the 9th or first half of the 10th century (Graham-Campbell 1974; 1976, 50, 68; 1980, 63, cat no 231). In this period, gold is generally in the form of finger or arm-rings, and there are a number of references to rings of gold in the Annals (*AFM* 1073;*CS* 1073), which include rings of 2 (*AFM* 1151), 5 (*AFM* 1150), and 20 ounces (*AFM* 1151). These weights must surely have been for arm-rings; the heaviest Hare Island example (Sheehan forthcoming) weighed far more than those mentioned in the Annals. For other arm-rings see Table 2.

Table 2: Examples of finds of gold arm-rings

Findspot	No	References
Glangarriff, Co Cork	2	Graham-Campbell 1976, 69
Vesnoy, Co Roscommon	5	Wilde 1862, 51–2, fig 581 Ó Floinn 1983b, 7
Edenvale Caves, Co Clare	1	Armstrong 1933, 94, cat no 421 Sheehan 2000, 34, fig 1b
Virginia, Co Cavan	1	Armstrong 1922, 137, fig 4
Ratheden, Co Carlow*	1	Armstrong 1933, 95, cat no 422 Wallace and Ó Floinn 2002, 229, fig 6:18

* weight: 375g

Ó Floinn (1983b) in his discussion of the gold band from Rathkeale, Co Limerick has identified it as belonging to a small group of artefacts from Ireland and western Scotland that date to the 11th or 12th century. These lightweight, thin, gold bands, which are often decorated with pellets in repoussé, seem to be personal ornaments and, given their distribution, seem to be associated with

Table 3: Examples of gold objects from Dublin

Site	Object	Date (century)	References
High Street	2 arm rings	10th or early 11th	NMI 1973, 24, cat no 10; fig 17; Graham-Campbell 1980, 61, cat no 220
High Street	finger ring	10th	NMI 1973, 25, cat no 11
Winetavern Street	finger ring	11th or 12th	NMI 1973, 25, cat no 12
Fishamble Street	finger ring	later 10th	Wallace and Ó Floinn 1988, 29
in the Liffey at Islandbridge	finger ring	–	Graham Campbell 1976, 72

Scandinavian settlements.

A number of gold artefacts have also been recovered from the excavations in Dublin (see Table 3). That the Dublin Vikings were rich in gold is something that is also evident in the Annals. In 988 (*AFM*; *CS* 989; *AC* 982) it is recorded that the high-king, Máelsechnaill mac Domnaill (*obit* 1022), made the foreigners in Dublin pay him a tribute of 'an ounce of gold for every garden, to be paid on Christmas night, for ever', indicating that there was a ready supply of gold in Dublin. Nearly two centuries later in 1162 (*AFM*), the Annals record that during peace negotiations the foreigners of Dublin gave the high-king, Muirchertach Ua Lochlainn, 'six score ounces of gold'.

However, if one is to follow the Annals, there seems to have been a marked increase in the amount of gold in Ireland in the third quarter of the 12th century when quantities of 200 (*AFM* 1151; *AT* 1151) and 300 ounces (*AFM* 1168) are mentioned. That gold was plentiful in the Hiberno-Norse towns in the 12th century is supported by Gerald of Wales in the *Expugnatio Hibernica* where he says that one of the Anglo-Normans was 'stalking about the cities of the coast … greedily amassing the gold with which the island abounds…' (Scott and Martin 1978, 171; Whitfield 1993b, 23). However, although Gerald seems to have been aware that gold could be mined in Ireland the implication is that the bulk of it was imported through the coastal towns. In his *History and Topography of Ireland* he discusses the productivity and potential of the country, but also (allowing for his anti-Irish feeling as a member of an invading force) the laziness of the people in exploiting these resources.

> 'The different types of minerals too, with which the hidden veins of the earth are full, are not mined or put to any use, precisely because of the same laziness. Even gold, of which they are very desirous – just like the Spaniards – and which they would like to have in abundance, is brought here by traders that search the ocean for gain' (O'Meara 1982, 102).

Yet the question of whether native gold was actively mined in the early medieval period remains unanswered. Gerald seemed to believe that gold was available and, in her review of the sources of gold available in this period Whitfield (1993a, 125–6; 1993b, 21) has pointed out that this is the case, with gold present in 15 of the 32 modern counties of Ireland. Furthermore, given the account of the gold rush in county Wicklow in the late 18th century, the events of which are well documented (*eg* Anon 1795), it is certainly conceivable that some gold was being sourced in Ireland. However, the evidence as it stands suggests that, as for silver, the Viking trade links were largely responsible for the bulk of the supply of gold in Ireland between the 9th and 12th centuries.

Other materials

Other imported materials probably included tin, mercury, glass, and some gemstones. It now seems, after assessing the sources of raw materials, that many of the materials used in the production of decorative church metalwork were imported and that gold and silver in particular were probably brought in through the Hiberno-Norse coastal towns.

Description of the Cross of Cong

This Cross is the most complete and the most visually impressive artefact in the corpus of church metalwork from the late 11th and 12th centuries (Fig 1). It consists of an elaborately decorated cross, which is curved at the points where the arms and the shaft meet; in a similar manner to the Irish High Cross, except in this case the traditional ring is lacking, and it is fitted with a knop and socket at its base for the insertion of a carrying staff. It is quite large for a processional cross measuring 760mm high and 480mm wide, as well as having a maximum thickness of 73mm at the knop. The Cross is formed out of an oak core encased in cast copper-alloy plates decorated with precious metals and glass. While in relatively good condition the Cross has suffered some damage through the loss of some elements and by subsequent repair, mainly in the early 19th century. The following description is based solely on a visual examination with the aid of a hand lens. No scientific analysis has yet been carried out.

Front

The front of the Cross (Fig 1) is covered with five cast copper-alloy plates. The central, cruciform plate is mainly decorated with plaques of gold filigree and has a central rock crystal, while the four plates on the shaft and arms are decorated with numerous panels of cast ornament and are gilded. The central plate was originally held in place by four clamps; it is now nailed, as are the four long plates. All of the plates are inlaid with silver and niello and all were, most likely, originally decorated with hemispherical glass studs, though only two, on the central plate, survive. Thus there is uniformity in the decoration of the plates on the front of the Cross.

The central, cruciform plate features a boss with a central aperture, 34mm in diameter, over a slightly larger large cut and polished rock crystal (Fig 8). Under this is a relic cavity, and when the relic was in place (it no longer survives) it would have been visible through

Figure 8: Crossing on the front of the Cross of Cong with rock crystal covering the relic cavity. Diameter of rock crystal 34mm. (Copyright NMI).

and magnified by it. Around the rock crystal is a collar consisting of 12 minute, D-shaped panels. These panels contain tiny plaques of beaded gold filigree with granules, which form simple curl and circle designs. These plaques have beaded wire frames and sheet gold backings and were wedged into placed; three are now missing. The filigree here and on the rest of the central plate is made of flattened beaded gold wire set on edge.

The boss is divided into four quadrants by thick borders of niello inlaid with spirals of silver wire. These quadrants were originally decorated with plaques of gold filigree, now lost, though some of the rivets survive, including one which retains a ring of flattened beaded wire around it. At each of the four cardinal points of the boss was a hemispherical glass stud, of which only the right and left examples survive. These are made of dark blue glass with a pattern inlaid in white. They are held in settings that have copper-alloy sheet bases and collars that are made of four gilded copper-alloy wires. The collars consist of two single twisted wires with a plain round wire between them topped by an undulating plain round wire. The glass settings are riveted to the Cross through their bases.

Figure 9: Side view of the crossing on the Cross of Cong showing fixing holes for clamps, now lost but replaced by modern straps (Copyright NMI).

The four flat areas of the cruciform plate surrounding the central boss were each originally decorated with two plaques of gold filigree. These are constructed in the same way as those in the D-shaped panels in the collar around the rock crystal but are far larger, and the pattern consists of a carpet of minute spirals, each made of a single flattened beaded wire with a central granule. The lower plaque on the right is missing, while the lower left panel has been damaged. A thick strip of silver divides each pair of filigree plaques, and a further strip originally separated the plaques from the gilded plates on the arms of the Cross. At each of the four extremities of this central plate there was a disc of niello inlaid with silver wire. However, the upper and lower examples are missing as the extremities of this plate have been damaged as a result of its reattachment to the rest of the Cross by nailing in the 19th century.

Figure 10: Panels of zoomorphic decoration on the front of the upper shaft of the Cross of Cong (Copyright NMI).

Figure 11: Back of the Cross of Cong (Copyright NMI).

The four small clamps which originally held the central plate were located in the middles of the four curving sides, where there are spaces in the ornament of the plate and the edging. These clamps were attached to the sides of the Cross, where the fixing holes for them can be seen (Fig 9). Copper-alloy straps protrude from these holes now, which are apparently the result of a 19th century repair. When the clamps were removed, presumably in order to remove the plate and gain access to the relic cavity, the plate needed to be secured in another way, resulting in damage to its decoration. Four further clamps held a central plate, now missing, on the back of the Cross, with fixing holes matching those that held the central plate on the front (Fig 9).

Four large, cast, gilded copper-alloy plates cover the shaft and the arms on the front of the Cross and these are decorated with pairs of gilded zoomorphic panels, which mirror each other in design (Figs 1 and 10). There are fourteen panels on the lower shaft and eight panels on each of the other three plates. These give the impression that they are individually cast openwork panels but, in fact, each is part of one of the four large plates, each cast as a single piece. The ornament is in the Hiberno-Urnes style, consisting of intertwined animals of both thick and thin body width. These are mostly fantastic creatures, although two clearly defined birds can be seen on one pair of panels on the right arm of the Cross. The borders between the individual panels have been inlaid with silver strips and the circular settings that run up the centre of each plate consist of discs of niello inlaid with silver wire, which originally alternated with glass studs, now missing (Fig 10). At the extremities of the two arms and at the top of the shaft is a semi-circular panel of niello inlaid with silver wire. The missing glass studs on these plates were most likely the same as the two surviving studs on the central cruciform plate, but only the damaged settings survive. There were originally three glass studs on the plate on the lower part of the shaft and two studs on each of the other three long plates. All of these plates were (and are now) held in place by nails which were hidden beneath the glass studs. The

Figure 12: Enamel stud on the back of the Cross of Cong, diameter c15mm (Copyright NMI).

Figure 14: Gilded copper-alloy openwork panel on the back of the upper shaft of the Cross of Cong (Copyright NMI).

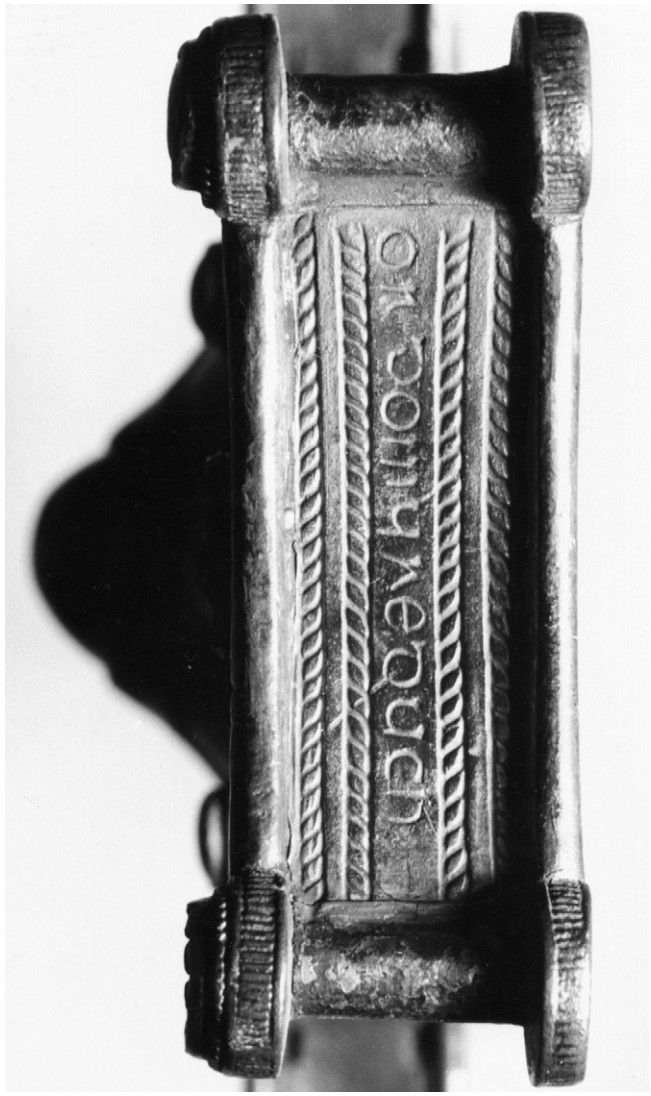

Figure 13: Tubular mountings and part of the inscription on the side of the Cross of Cong (Copyright NMI).

loss of the glass studs most likely resulted from the removal of the plates from the Cross in the past.

Edging

The edging around the cross is made to look as if it consists of tubular binding strips (Fig 10), but, in fact, is made of solid cast copper-alloy covered in silver sheet. Eighteen projecting circular settings inset with alternating pairs of green and red glass studs punctuate this edging on the front of the Cross (Figs 1 and 10). Five of these studs are now missing. These are matched on the back of the Cross by eighteen red and yellow enamel studs (Figs 11, 12 and 14), one of which is missing. The studs on the front are connected to those on the back by tubular mountings on the sides of the Cross (Fig 13).

Back

The back of the Cross is less complex than the front and

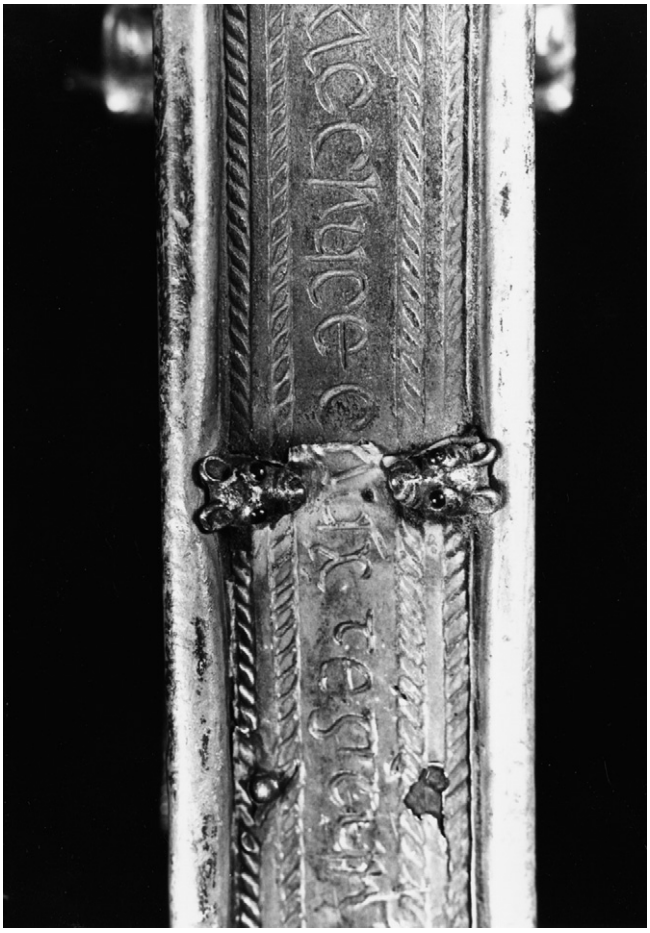

Figure 15: Side of the Cross of Cong, showing sheet silver, exposed copper-alloy plate and two animal-head nails, c.8mm long (Copyright NMI).

Figure 16: Animal head, knop and socket on the back of Cross of Cong (Copyright NMI).

was originally covered with four gilded copper-alloy, zoomorphic, openwork plates in the Hiberno-Urnes style, set over gilded copper-alloy sheets; one plate is now missing (Figs 11 and 14). These are examples of true openwork, unlike the panels on the front of the Cross which only imitate this. These four plates were originally connected to each other at the crossing by a mount, now missing. An early 19th century antiquarian watercolour depicts part of this missing mount, which shows an animal head and suggests that the mount consisted of four animal heads arranged in the shape of a cross (Ó Riain and Murray 2005). A space left in the ornament suggests that these were connected to a saltire behind them (Bourke 1989) which, in turn, was clamped in place in the manner discussed above.

Sides

The sides of the cross are covered with copper-alloy plates. These carry the incised inscription, which, for the most part, is framed by incised borders decorated with a herringbone pattern (Figs 13 and 15). These plates are covered with silver sheet and most of them are partially kept in place by nails, the heads of which are tiny cast animal heads (Fig 15). These are gilded and their eyes have been inlaid with spots of dark-coloured glass. The silver sheeting has been worked with a pointed tool to take the impression of the incised inscription on the copper-alloy underneath.

Base

At the base of the Cross there is a knop and socket with two scaley animal heads, one on the front and the other on the back (Figs 1, 11 and 16). These appear to hold the base of the Cross in their jaws, although their lower jaws are not depicted (Fig 17). Both are gilded and have their moustaches and eyebrows decorated with niello inlaid with silver wire. The eyes of the head on the front of the Cross are set with round green glass studs, whereas those on the back have blue, lentoid glass studs (Figs 1 and 16). The two areas at the side of these are decorated with cast vegetal ornament (Fig 17). The knop is decorated with eight gilded genuine openwork zoomorphic plates, which are also in the Hiberno-Urnes style (Figs 16 and 17). The knop is also decorated with silver strips and with four blue glass studs, one of which is inlaid with white glass. The socket was similarly decorated with

Figure 17: Animal head showing vegetal decoration, and openwork plaque on knop on the back of the Cross of Cong (Copyright NMI).

four zoomorphic openwork panels, only one of which survives, and silver strips, as well as four cast animal heads (Fig 16). These three components at the base of the cross were cast as one piece and riveted to the cross through the snouts of the scaley animal heads.

Discussion

Construction

The method of employing a wooden core as a structural base for the cross was used in the construction of nearly all the crosiers of the period (*eg* Figs 2 and 18) and most of the reliquaries (*eg* Figs 4, 6 and 7) with the exception of bell-shrines (*eg* Fig 3). This method has a long tradition in Ireland and was used in the construction of church metalwork in the 8th and 9th centuries, such as house-shaped shrines (Youngs 1989, 134–40), the Lough Kinale book-shrine (Kelly 1993) and the Tully Lough cross (Kelly 2003). The method of attaching the central plates on the front and the back of the Cross of Cong, by clamping, is otherwise unknown in the corpus. The use of a wooden core meant that the metal components were mostly nailed, rather than riveted, in place. Nails were usually of copper-alloy and their heads, which were occasionally gilded, would usually be no bigger then 1.5mm in diameter. In only two surviving examples, the Cross of Cong and St Manchan's Shrine, are the nail heads elaborately decorated in the form of animal heads (Figs 7 and 15).

The same two reliquaries are the only ones in the corpus that have assembly marks. These mainly consist of simple, incised, geometric devices, although animal elements are incorporated on St Manchan's Shrine. There is also an assembly mark on an openwork mount of unknown provenance (NMI R.4016), which is apparently from a cross and is decorated with similar zoomorphic ornament to that found on the openwork plates on the back of the Cross of Cong. The mark consists of an incised animal head on the back of the mount in a similar style to those depicted on its front. There is a similar animal head assembly mark on the back of one of the bosses on St Manchan's Shrine. However, a problem with the analysis of assembly marks is that the full range of those on the Cross of Cong are unknown as most probably remain hidden. On St Manchan's Shrine it is in some cases hard to distinguish between the original and modern assembly marks, as it has been reassembled a number of times in the modern period (Kendrick and Senior 1937, 108).

The Cross demonstrates a sophisticated level of skill in casting (Fig 14) and none of the other artefacts in

Figure 18: Dunloe crosier, angled view of crook, height 225mm (Copyright NMI).

the corpus, except perhaps for St Patrick's bell-shrine (Fig 3), reach the same level of crisp detail. The plates on the front and the back of the Cross were probably all made using two-piece moulds. However, the section below the cross (Fig 16) must have been cast using the lost wax technique, which was commonly employed for casting the crooks of Insular-type crosiers (Figs 2 and 18).

Gold work

In contrast to some of the quantities of gold mentioned in the historical sources, only a limited amount of gold was used in the decoration of church metalwork of the late 11th and 12th centuries, as had also been the case of earlier Irish metalwork of the early medieval period. The filigree on the Cross of Cong is of a relatively simple form (Fig 8); there are finer and more sophisticated gold filigree panels on the shrine of St Patrick's Tooth and on the Dunloe ('Inisfallen') crosier (Fig 18). However, even those examples are still very far removed from the skill in filigree work demonstrated by craftsmen in the 8th century in Ireland (*eg* the gold bird from Garryduff ringfort, Co Cork (Youngs 1989, 209, cat 217). A peculiar method was used on the front of St Patrick's bell-shrine (Fig 3). In order to give the filigree depth, the designs were laid out in heavy copper-alloy beaded wires. These were then covered with gold foil and the beaded gold wire was then laid on top of this. The idea in this case was to give the impression that a large amount of gold had been used to decorate the front of the reliquary. Much of the filigree that adorned many of the pieces in the corpus, such as that on the Lismore crosier (Ó Floinn 1983a, 170–1, cat no 81), was stripped in antiquity, which makes it difficult to assess the overall quality of filigree of this period.

Although gilding was common in this period, it was not usually used to cover large areas, as one sees on the Cross of Cong and St Manchan's shrine. Only a few other pieces show evidence for substantial areas of gilding and a technique that was often used instead of it was to cover cast panels of decoration with gold foil. While this tends to obscure the details of the panels, it gives the impression of a certain depth to the gold. This technique was not used on the Cross of Cong or St Manchan's Shrine, but it was used on many of the crosiers and reliquaries in the corpus (*eg* Fig 19).

Silver work and niello

While silver was used more often then gold in church metalwork, the amounts employed were still fairly modest. It has been shown that thin silver sheeting was used on the sides of the Cross of Cong and to cover its edges

Figure 19: One of the two middle knops on the Dunloe crosier, with decorative panels covered in gold foil (Copyright NMI).

(Fig 10) and it was also originally used as a backing to the figures on St Manchan's Shrine (Kendrick and Senior 1937, 110; Fig 7). However, much larger amounts of silver were used on St Patrick's bell-shrine, where most of the cast decorative elements, including the plates on the four sides and the crest, are made of gilded silver (Fig 3). Silver was used in the construction of the Dunloe crosier (Fig 18) and for the later elements of the British Museum ('Kells') crosier (MacDermott 1955, 65–6), as well as in two or three other pieces.

However, apart from these few examples, where reasonable amounts of silver were employed, silver was usually used sparingly as a decorative inlay. A common technique was to use strips of it as inlaid borders between panels of ornament. This can be seen on the Cross of Cong (Fig 10) and many of the reliquaries and crosiers in the corpus (Murray 2004, 151). A less common but visually impressive version of this was to twist silver and copper wires together and then hammer them into a groove in the metalwork. This method, which first appears in Ireland in the 9th century on a mount re-used on a Viking weight (Henry 1970, 80; Ryan 1993, 9), can be seen on the Clonmacnoise crosier and on the bell-shrine from Glenkeen, Co Tipperary (Henry 1970, figs 20 and K). Silver was also commonly used as an inlay in the formation of zoomorphic and vegetal decoration on open expanses of metal. The bands of

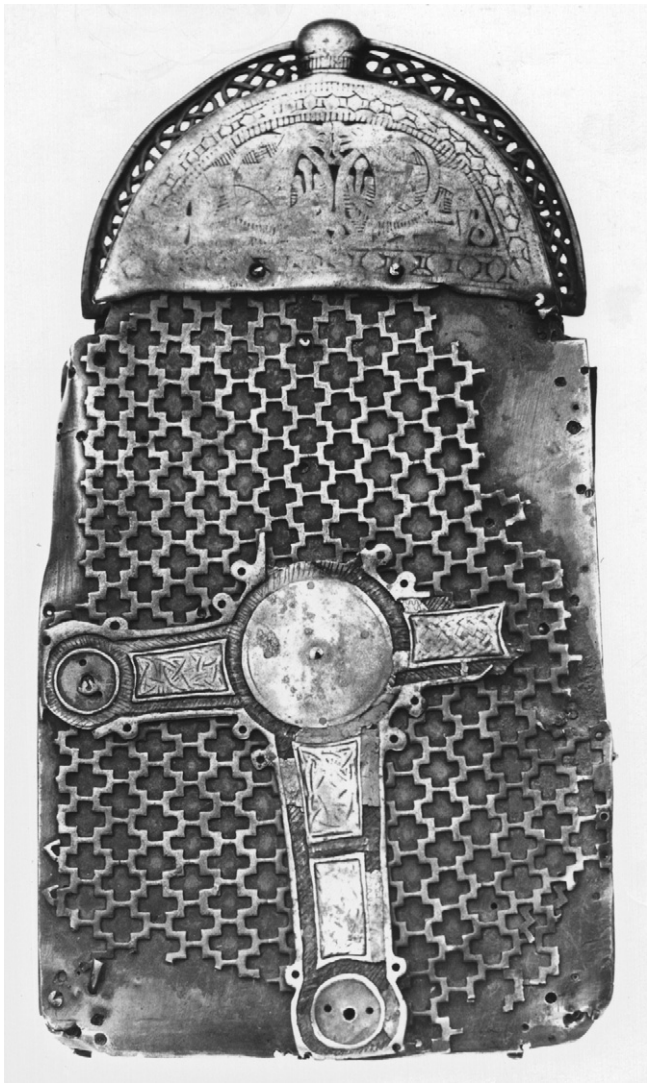

Figure 20: Late 11th-century cross in a secondary position on the back of the Corp Naomh, height 235mm (Copyright NMI).

silver forming these designs were often bordered by niello. The best example of this can be seen on the crook of the Clonmacnoise crosier (Fig 2).

Figure 21: Late 11th-century bell-shrine crest from river Bann, length 89mm (Copyright NMI).

Figure 22: Niello inlay on a 10th-century cross terminal, length 64mm (Copyright NMI).

Niello was also favoured by the goldsmiths of the period, who usually used it in thick bands, inlaid with a zigzag silver wire, as a decorative border. However on the Cross of Cong the inlaid silver wire was used to form spirals (Fig 10). The technique of inlaying niello with silver wire occurs in Britain in the 8th and 9th centuries, for example on the Steeple Bumpstead boss (Youngs 1993, 146-7, fig 17.4) and on a group of strap-ends from East Anglia (Thomas 2001, 40, fig 4.3). However, it does not seem to occur commonly in Ireland until the late 11th century, as on the shrine of the *Cathach* (Fig 4), which is dated by its inscription to between 1062 and 1098 (Henry 1970, 89). While Henry (*ibid*, 80) says that niello inlaid with silver wire is found in the 10th century, the examples she gives are more likely to date to the 11th century. For instance, the cross on the back of the *Corp Naomh* (Fig 20) is clearly in a secondary position and most likely dates to the late 11th century, while the bell-shrine crest from the River Bann (Fig 21) is now generally accepted to also date to the late 11th century (Ó Floinn 1987a, 181; Murray 2004, 151).

However, niello was certainly used on its own as an inlay in the 10th century, as on a terminal mount from a cross which is probably Irish and is now in the British Museum (Henry 1967, 123, fig 55; Fig 22) and on a number of kite-brooches from Ireland (Whitfield 1997, table 15:6).

The niello analysed by La Niece (1983, 292) included

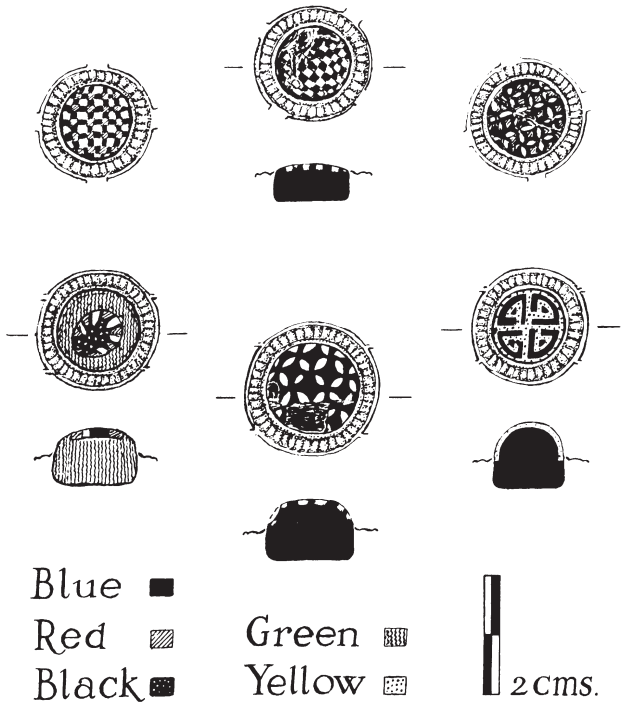

Figure 23: Details of glass studs on the Lismore crosier (Copyright NMI).

that on the Glenkeen bell-shrine and the Dunloe crosier (Fig 18), both of which consisted of a silver/copper sulphide. This (*ibid*, 286–7) was common in the Anglo-Saxon samples and usually consists of two parts silver to one part copper by weight, which gives a lower melting range that 'allows the niello to be fused *in situ* without fear of melting the metalwork.'

Glass work and gemstones

A large amount of glass seems to have been used to decorate the Cross of Cong (Fig 8) and demonstrates a certain level of skill in glass-working that is also seen on the Lismore crosier, where there are similar opaque inlaid glass studs (Fig 23). The latter piece also features panels of millefiori, which are also found on the *Breac Maodhóg*.

The yellow and red champlevé enamel on the back of the Cross (Fig 12) can also be seen on the contemporary hanging bowl escutcheon from Clonmacnoise and on the crest of the Glenkeen bell-shrine (Henry 1970, fig K). An alternative method to this, which was used on St Manchan's Shrine (Fig 7), was to fill the panels with yellow enamel and then gently cut part of it away to leave a yellow pattern that would contrast with the red enamel set around it. This alleviates the need for separate compartments but a disadvantage is that the red enamel can flake, revealing the yellow underneath.

Analysis of the red enamel on the Glenkeen bell-shrine suggests, as with other examples of red enamel from early medieval Ireland and Britian, that it is made from re-used metallurgical slag (Stapleton *et al* 1999, 916, table 1). Henry (1970, 78) stated that the difference between earlier enamels and enamels in the late 11th and 12th centuries is that 'the geometric patterns are red on a yellow background in the Romanesque objects whilst before they used to be the reverse.' This is certainly not the case, as the geometric patterns on all of the examples mentioned above are executed in yellow on a red background (Fig 12) and this criterion cannot be used to distinguish between earlier and later work.

Cloisonné enamel seems not to have been a popular technique and the only seemingly Irish examples of its production occur on a crosier of unknown provenance (Murray 2004, 152, 159, fig 8) and also, originally, on the basal cap of St Lachtin's Arm (Mitchell 1984; Murray 2004, 149, 152). Indeed, Ó Floinn has recently identified the cloisonné stud on St Patrick's bell-shrine as an Ottonian import (Ó Floinn 1997, 266; Fig 3). Also on this reliquary, spaced evenly around the edges of the main panel on its front, are eight oval settings. That in the top left hand corner contains a garnet, while the other three which survive, and appear to be original, have imitations made of red glass. Another garnet can be seen on the drop of the Dunloe crosier (Fig 18), and similar stones probably originally decorated the drop plates of a number of other Insular crosiers. While almandine garnets occur in the Ox Mountains in the west of Ireland (MacDermot *et al* 1996, 26), the source of those used in early medieval metalwork is unknown, although their scarcity implies that they were difficult to obtain. It is possible that the rock crystal in the centre of the Cross of Cong (Fig 8), as well as that on the base of the Ardagh chalice, were sourced in Ireland (Wayne Cox pers comm). However, as gemstones were generally rare in Ireland during this period (but see *AFM* 1151), it seems that glass was usually used as a substitute, as in the case of the Cross of Cong and other major artefacts.

Conclusions

Our understanding of the organisation of goldsmiths and goldsmithing in Ireland in this period is poor and is hindered by a lack of evidence, as well as by a lack of historical, archaeological and scientific research. However, the quantity of their output that survives allows some insight into their craft. Indeed, it appears that the supply of raw materials to goldsmiths in Ireland during the period was not plentiful or regular and that they had to make the most of what was available to them.

While the amount of gold and possibly other precious materials, such as gemstones, seems to have increased in the third quarter of the 12th century, none of the major pieces in the corpus can be dated after 1150 and, while there are records of reliquaries being commissioned and decorated after this, none of these objects survive (*eg AFM* 1162, 1166, 1170). The Cross of Cong demonstrates how goldsmiths in Ireland, with limited resources but with the techniques they had learned, were capable of using these materials to maximum effect. Indeed, the Cross of Cong is testimony to the goldsmiths of early medieval Ireland in their ability to create impressive objects under very challenging conditions.

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Abbreviations

AC *The Annals of Clonmacnoise* (ed) D Murphy (Dublin, 1896).

AFM *Annals of the Kingdom of Ireland by the Four Masters* (ed) J O'Donovan Vols 1–7 (Dublin, 1856).

ALC *The Annals of Loch Cé* (ed) W M Hennessy Vols. 1–2 (Dublin, 1871).

AT *The Annals of Tigernach* (ed) W Stokes, *Revue Celtique* 17 and 18 (1895–7).

AU *Annals of Ulster* (eds) W M Hennessy and B Mac Carthy Vols 1–4 (Dublin, 1887–1901).

CS *Chronicum Scotorum* (ed) W M Hennessy (London, 1896).

DIL *Dictionary of the Irish Language: Based Mainly on the Old and Middle Irish Materials* (Dublin, 1983).

FAI *Fragmentary Annals of Ireland* (ed) J O'Donovan (Dublin, 1860).

NMI National Museum of Ireland

Anonymous 1795, 'Domestic intelligence: Gold mine – County Wicklow', *Walker's Hibernian Magazine* Part 2, 382–3.

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