

# THE SMALLS SWORD GUARD: DISCOVERY, SIGNIFICANCE AND EXPERIMENTAL REPLICATION OF A HIBERNO-URNES MASTERPIECE

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*One of the finest examples of secular Hiberno-Urnes art from England and Wales was discovered by a diver on the offshore reef known as The Smalls (Welsh Gwales), Pembrokeshire, in the Irish Sea. The guard was probably made in Ireland about AD 1100–25 in a distinctive Hiberno-Scandinavian decorative style and technique with niello and silver inlays, and it illustrates the skills of a master craftsman or saer working for secular and ecclesiastical patrons. The findspot is now designated as historic wreck site under the Protection of Wrecks Act 1976 (no. 38).*

**Keywords:** sword guard; Hiberno-Urnes; protected wreck; Smalls; Wales; experimental replication

## INTRODUCTION

On 2 August 1991 a remarkable example of late Viking metalwork was found by chance on the hazardous formations known today as The Smalls (Ordnance Survey SM 466 088), situated about seven nautical miles (13km) due west of the uninhabited island of Grassholm, Pembrokeshire (figs 1–2). The geological survey of The Smalls indicates that the rocks are made up of basalts in the north and dolerite on the extreme south.<sup>1</sup>

Long recognised as a shipping hazard astride the western approaches to Milford Haven (about 32km due west), and located in the eastern part of the southern entrance to the St George's Channel, the main northernmost outcrop within The Smalls cluster of low reefs has been marked by a lighthouse since the eighteenth century. The first structure, a unique pile-supported design by Henry Whiteside, lasted from 1776 to 1861.<sup>2</sup> Apart from two other rock outcrops just to the east of this largest reef, all are covered by the sea at high water (fig 3).<sup>3</sup> The south-going tidal stream from St George's Channel turns eastward to the south of The Smalls and turns into the Bristol Channel. The west-going stream from the Bristol Channel turns north and runs into the St George's Channel.<sup>4</sup>

1. Two rock samples taken from Gully 3 at depths of 7m and 9m (low water), and one rock sample taken from the rock outcrop between Gullies 1 and 2 were identified by Richard E Bevens, then of the Department of Geology, Amgueddfa Cymru, as basalt from the Skomer volcanic group; Thorpe *et al* 1989, 125–6.

2. At SM 467 089; Hague 1994, 72.

3. WCEP 1960, 110.

4. *Ibid.*



Fig 1. The Smalls reef lies astride a main shipping route between Ireland and south Wales. *Image:* reproduced with permission, © Amgueddfa Cymru – Museum Wales.

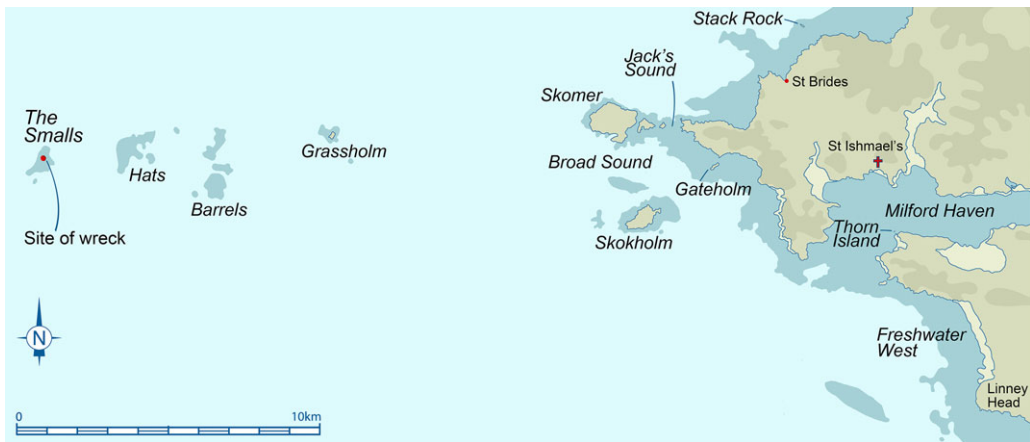


Fig 2. South-west Wales and the location of The Smalls reef. *Image:* reproduced with permission, © Amgueddfa Cymru – Museum Wales.

## Discovery

On the afternoon of 2 August 1991, during a leisure dive on The Smalls by members of the Milton Keynes Sub-Aqua Club, one of the divers spotted a bluish object protruding from



Fig 3. Aerial view from north-west showing the extent of the shipping hazard posed by The Smalls, photographed at low tide by Toby Driver on 9 September 2010. *Photograph*: reproduced with permission, © Crown copyright: RCAHMW; cat no. C908306; File Reference: AP\_2010\_3329.

beneath one of the iron hull plates from one of the modern shipwrecks that litter the seabed around these rocks and gullies that make up the reef.

At the time of the dive, which lasted thirty minutes, visibility was about four metres. The finder described swimming with her buddy diver down what was later designated 'Gully 2', over rock into kelp (*Laminaria hyperborea*) at its southern end (described as being about 45cm high, and in water above 14m depth; fig 4). They then turned back for about '10 metres' (on other occasions reported as 11–14m), and it was at this point that the finder noticed something bright blue in colour, lying beneath a metal plate at the end of the gully. The object was apparently lying upside down, partially trapped and covered by the plate, and after some effort, it was pulled free (see fig 8 for suggested findspots).

When found, the artefact was fairly clean (a pattern was visible), although iron corrosion was described to be covering some of the design in the centre. Its centre appeared to be hollow and contained some sand. The finder and her partner described initially putting the object in vinegar for 24 hours to remove the outer coating of corrosion, then scrubbing this off under a tap (not recommended; fig 5).

The object was reported to the local Receiver of Wreck based at Pembroke Dock and in September 1991 taken to the then Department of Medieval and Later Antiquities at the British Museum for identification. Recognised as significant by Susan Youngs, she referred

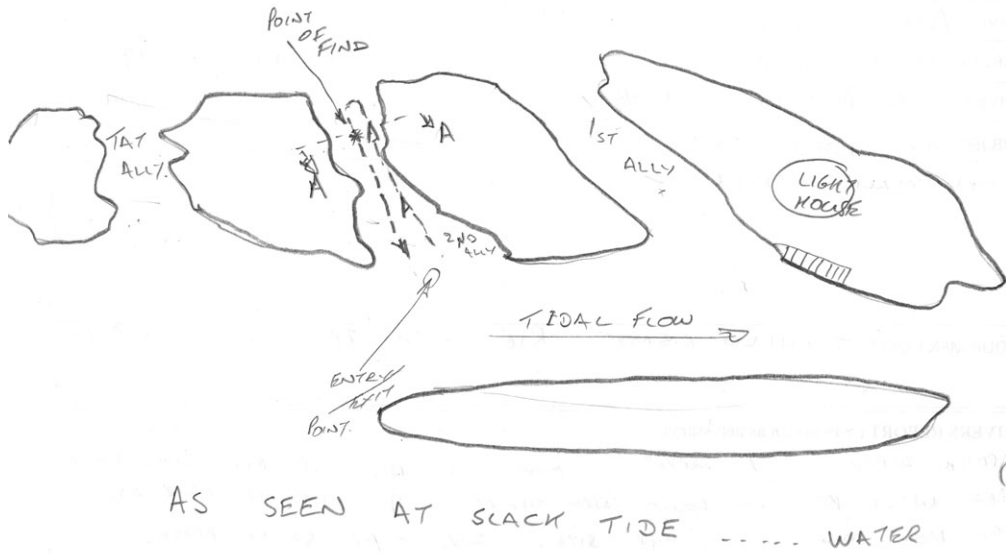


Fig 4. Sketch from a dive log (prepared on the site from memory in 1992) showing the dive route followed by the finder of the sword guard and dive buddy on 2 August 1991. *Image*: reproduced with permission, © Amgueddfa Cymru – Museum Wales.



Fig 5. The copper-alloy casting of the Smalls sword guard, pre-conservation, retained much of its original colour and showed little sign of underwater abrasion or wear (noted on exposed examples copper-alloy from recent wrecks on the site). *Photograph*: reproduced with permission, © Amgueddfa Cymru – Museum Wales.

the sword guard to the author at Amgueddfa Cymru – Museum Wales (henceforth Amgueddfa Cymru) in Cardiff for reporting. It was acquired by Amgueddfa Cymru in 1992 through the Receiver of Wreck<sup>5</sup> and is currently displayed at St Fagans National Museum of History.

5. NMW acc. no. 92.57H.

## Protection

Following the identification of the find and an assessment of its significance, the Secretary of State for Wales designated the site under the Protection of Wrecks Act (Designation no. 2) Order 1991 no. 2746 (5.12.1991), centred on a 300m radius of position Latitude  $51^{\circ} 43'.18$  North, Longitude  $05^{\circ} 40'.29$  West. This came into force on 7 December 1991. In 1992 the author was granted a licence to survey the site, and two on-site assessments were undertaken in May and June 1992.<sup>6</sup> In 1993 the author indicated that the most likely findspot should be taken, in the absence of other data, as the theoretical centre of any debris field, some 120m due south of the present lighthouse (which formed the centre of the previously scheduled area). In 1995 there was a revision to the Designation order relating to The Smalls, to be cited as the Protection of Wrecks (Designation no. 1) Order 1995, no. 2654 (9.10.1995), which came into force on 20 November 1995. This reduced the extent of the designated area from a 300m radius to a 100m radius of position Latitude  $51^{\circ} 43'.18$  North, Longitude  $5^{\circ} 40'.13$  West. On the current Receiver of Wreck list, it is centred on  $51^{\circ} 43' 10.8N$ ;  $05^{\circ} 40' 7.8W$ , and the Wessex Archaeology Maritime Assessment gives  $51^{\circ} 43'.202N$   $05^{\circ} 40'.1937W$ .

## SITE SURVEY AND INVESTIGATION

Early in 1992 an expedition was organised by Amgueddfa Cymru under the direction of the author to record in detail the findspot and assess the likelihood of further Viking-Age material being preserved. There appeared to be little chance of large sections of hull structure surviving in such an unyielding, hostile environment, but it was considered possible that smaller associated items could have become buried, lodged between rocks or embedded in concretion. The first expedition was conducted during 18–31 May 1992, and a second the following month (24–9 June 1992). Their objectives were to interview the finders on site and relocate the findspot, to plot its relationship to underwater and dry features, to conduct a general search of the vicinity and to establish the likelihood of further associated material being located, and the likely extent of the archaeological site and its debris field. Natural features and the underwater environment were also to be investigated (visibility underwater varied from 4–5m or more). Recording was by 35mm camera and diver observations recorded on log sheets, supplemented by a Hi 8 V.900 video of Gully 3, made by Jerry Cross of HTV. The site plan was prepared by combining bearings with sketch plans of rocks by the author after landing on them and information from aerial photography.

The logistics were formidable as The Smalls is the most remote, exposed archaeological site in Wales, and it was anticipated that the investigation strategy might be constrained by the large swells that frequently roll unhindered from the Atlantic to break onto the exposed rocks. Searches and site inspection involved challenging diving conditions with a significant swell in the narrow rock gullies between tides (figs 6, 7).<sup>7</sup> During the initial visits (18–26 May), most days were aborted owing to high seas and heavy swell. The only successful dives on the site occurred on 28 May, when Gullies 2 and 3 and the Main

6. Redknap 1992a, 1992b, 9.

7. Two inflatables were used to reach the site: a 6.5m Tornado RIB with 175 Johnson engine and Humber 5.1m RIB and Mariner 60hp engine. Fuel consumption varied depending on weather from 50–60 litres, and the boats were operating at the outer limits for distance and load.



Fig 6. The main cluster of rocks in the vicinity of the findspot of the Smalls guard, photographed on 9 September 2010. *Photograph:* reproduced with permission, © Crown copyright: RCAHMW; AP\_2020\_3339; C908317.

Gully were examined, and on 29 May, when the same gullies and an area to the south were examined (total dive time about 12 hours). The second expedition from 24–9 June was more productive, with diving at both slack tides on 25 and 26 June, and single slack tide dives on 27 June (total dive time approximately 24 hours). Attempts to inspect the site in August 1992 were prevented by bad weather.

### Site description

Three main rock outcrops break at high tide, the others becoming submerged. The seabed comprises bedrock gullies of varying width and depth, containing at their base variable amounts of coarse sand (depending on effect of tidal stream). In shallow areas there is dense short kelp colonisation. The gullies have steep sides, and range in depth from 9m in their centres, sloping gradually to 15+m at ends. Three narrow north–east/south–west gullies run into a larger, slightly deeper north–south gully. Bottom cover comprises broken shell and some rounded pebbles/boulders, but no significant sand accumulation (except for the occasional small amount in hollows, much derived from broken shell). The ‘main gully’ appears to have more pebbles than sand visible. There is short kelp



Fig 7. The findspot of the sword guard and the area of the site investigation is indicated by the rocks breaking surface to the east (right) of the present lighthouse, designed by James Walker and completed in 1861. *Photograph*: reproduced with permission, © Amgueddfa Cymru – Museum Wales.

cover down to approximately 10m (none below 14m), much of which was observed in June to have been stripped off by earlier storms.

Most gullies are scattered with wreckage and the finder and her diving partner, though initially unable to pinpoint the exact findspot of the sword guard, reidentified the general area involved at the south end of Gully 2, in the vicinity of later wreck debris (fig 8, red dots). However, there were some discrepancies in witness accounts of the gully involved – both Gullies 2 and 3 were cited in some interviews. On a subsequent dive by the finder, she recognised an area at the end of Gully 3, where it merges with Gully 2, as the most likely findspot.<sup>8</sup>

Divers in Gully 2 noted that it has a steep north side, with rounded boulders (>10cm) littering the bottom, and sand lying in rock hollows. Some areas were covered with large sections of rivetted iron hull plate, nineteenth-century copper and brass plate.<sup>9</sup> Iron and rock both appeared to have a similar pinkish red colour, and a considerable amount of iron plate and even some copper sheet has ‘cemented’ onto exposed rock. This included a

8. Dive logs for K Anyon and S Craddock, dated 25 Jun 1992; project archive, Amgueddfa Cymru.

9. D Richman dive log report 28 May 1992; F Mitchell dive log report 28 May 1992.

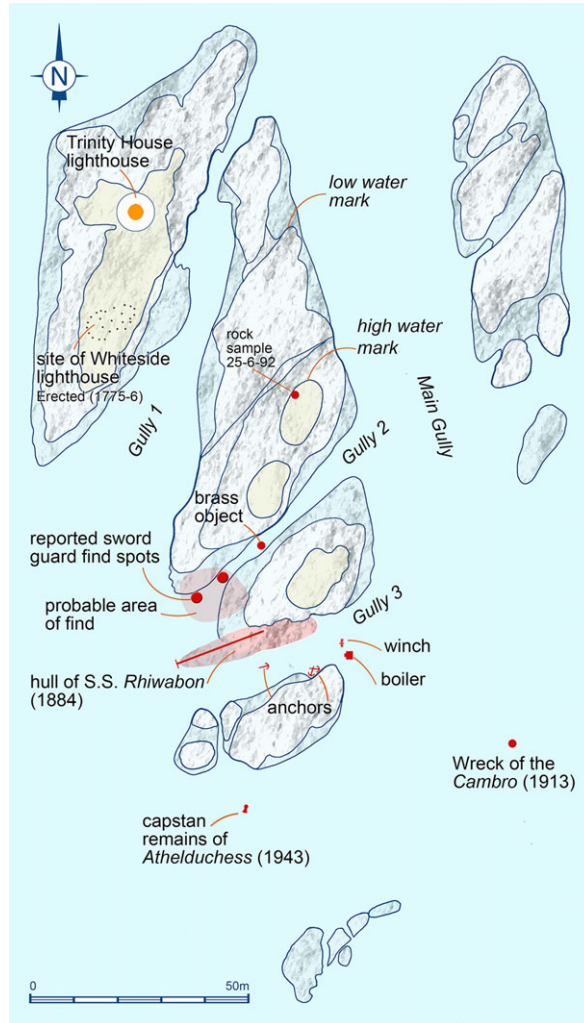


Fig 8. Plan of The Smalls, showing main gullies, designated 1–3 and ‘Main Gully’, during the 1992 survey. *Image*: reproduced with permission, © Amgueddfa Cymru – Museum Wales.

section of iron pipe against the north side of the gully, and beneath it Victorian cast brass decorative fretwork, covered in concretion (fig 10, left).

Gully 3 rises in the centre, and is strewn with chain, iron hull plate, at least two large anchors (at least one of Trotman type widely used on merchant ships post-1852) at its northern end (one 2.75m long × 2.01m wide; the other 1.8m long × 1.2m wide), a smaller anchor near the gully centre (about 1m in width), and a ship’s propeller shaft and box-section hull structure covering much of the bottom at the south end. The principal feature is the coherent bottom of a rivetted iron hull with a single propeller shaft (length about 22.5m) and a three-blade propeller (one blade missing). The sword guard appears to have been discovered beneath a large iron plate from this collapsed hull, identified as the steamship *Rhiwabon*, a cargo steamer built in 1880 and owned by Cory & Sons,



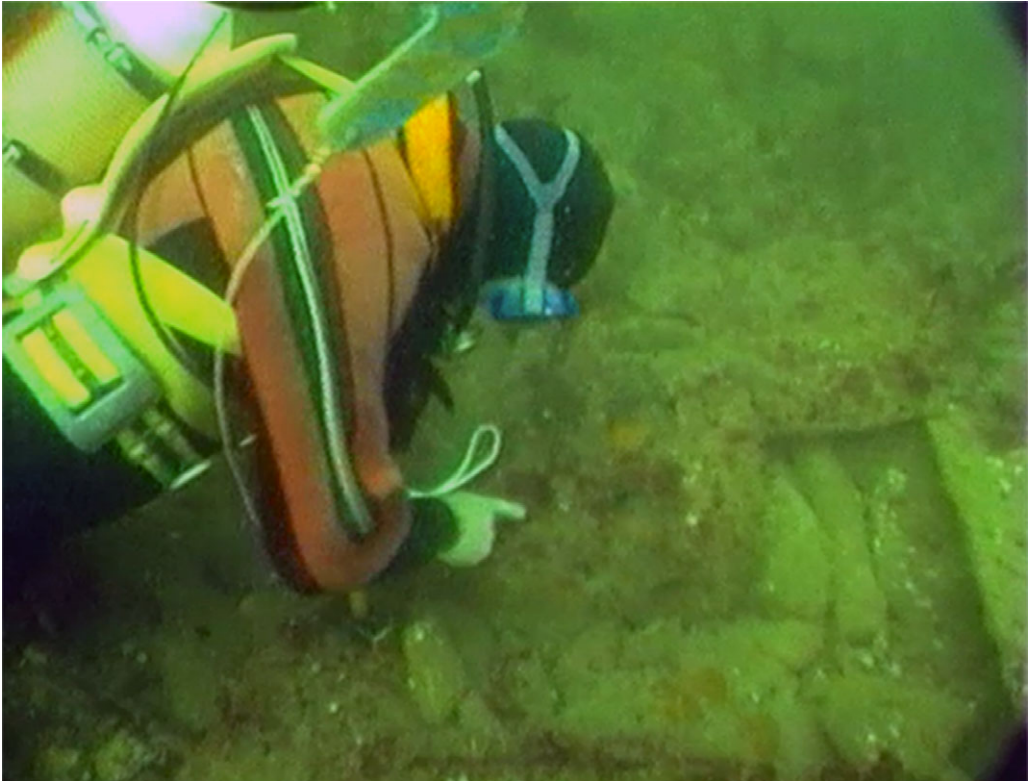


Fig 9. A variety of metalwork derived from the wreck of SS *Rhiwabon* (and other wrecks) lies trapped beneath its rivetted hull plates, being inspected here during the 1992 expedition to The Smalls.

*Photograph:* reproduced with permission, © Amgueddfa Cymru – Museum Wales.

Cardiff (registered at 1,364 registered tons). The ship was lost in a force 6 south-westerly on 29 January 1884, while in ballast from Fleetwood (Morecambe Bay) to Cardiff (fig 9).<sup>10</sup>

No further components of the sword have been found, and the guard may have been separated from the other components by later events, such as the loss of the *Rhiwabon*, whose lower hull has now concreted to the rock formations, creating an artificial reef. A few unstratified copper-alloy objects and late nineteenth- and early twentieth-century potsherds were recovered (fig 10), probably from the *Rhiwabon* or other post-medieval wrecks lost on The Smalls.<sup>11</sup>

### Subsequent inspections

Following the 1992 surveys, there were visits to The Smalls by the Archaeological Diving Unit (ADU) on behalf of the Advisory Committee on Historic Wreck Sites.<sup>12</sup> The only

10. In 1981 its bell was recovered, and in 1990 an engineer's plate confirmed the identification; Tom Bennett, pers comm 5 Jan 1995.

11. Some debris on the seabed could have been jettisoned.

12. ADU Reports 91/25; 93, 07; 97/12.



Fig 10. Finds from Gully 2, The Smalls, originating from SS *Rhiwabon* (wrecked 1884) included transfer-printed ware, a cast copper-alloy decorative surround from a stove or decorative ship's fitting (left) and a slightly tapering copper-alloy (high Sn content) ingot-shaped block (right).

*Image:* reproduced with permission, © Amgueddfa Cymru – Museum Wales.

archaeological material seen in 1997 were large sheets of iron and debris from nineteenth- and twentieth-century shipwrecks, including the *Cambro* (lost 1913). The ADU concluded that 'It is likely that this is the site of a Viking wreck, but the evidence remains inconclusive ... Despite the dynamic nature of the site the remains of recent wreckage still *in situ* suggest that it is possible for material to remain in the gully', overlain and protected by modern wreckage.<sup>13</sup> In view of the rarity and fragility of such remains and potential importance of the site from an archaeological and historical perspective, it was recommended that designation of the site should continue, and that licence applicants

13. ADU Site Report 97/12.

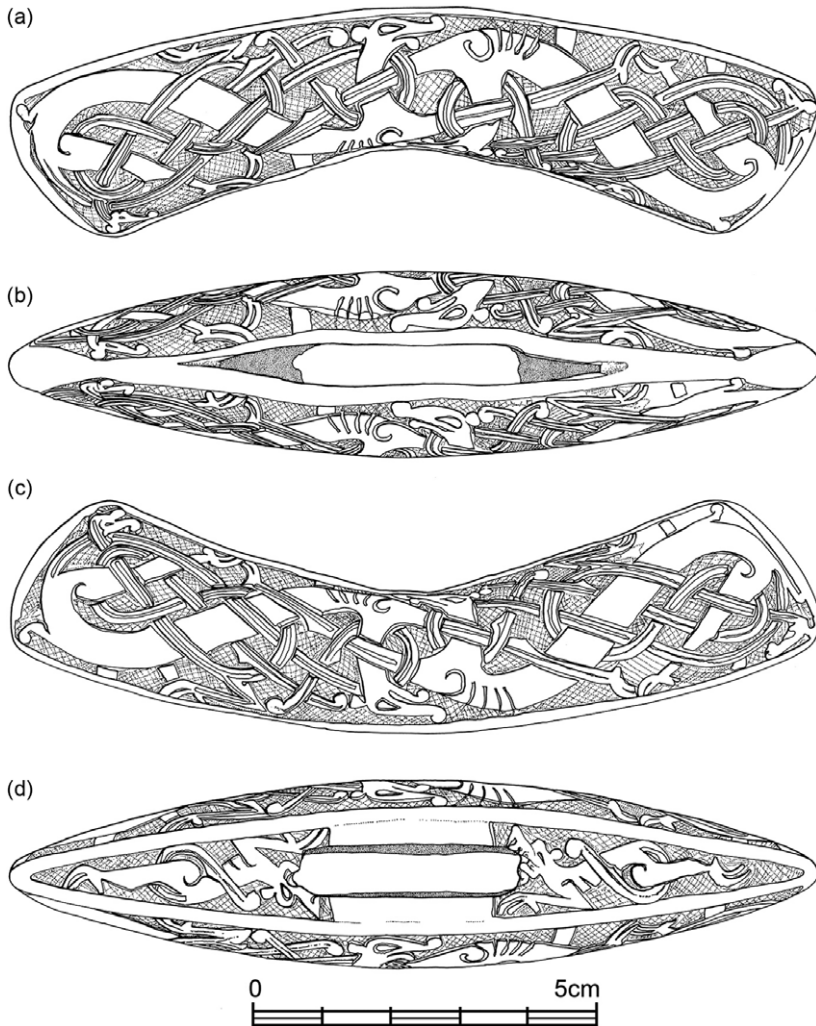


Fig 11. (a) Face A, (b) underside, (c) Face C and (d) top of the Smalls sword guard.  
*Drawing: Tony Daly; reproduced with permission, © Amgueddfa Cymru – Museum Wales.*

seeking permission to visit the site should co-operate in gathering environmental and archaeological information about the site as part of their visit, to incrementally increase the accuracy of site information and any rate of change.

### THE SWORD GUARD

The lower sword guard from The Smalls is a hollow casting of brass, with a thickness of about 2mm. Each side is engraved with a field of ornament, filled with pairs of intertwined animals with thick and thin body widths, ultimately based on the fluid ornamental style



Fig 12. Face A of the Smalls sword guard, on display mount. *Photograph:* reproduced with permission, © Amgueddfa Cymru – Museum Wales.

known as ‘Urnes’ (fig 11). The beasts are enhanced with silver wire, and against a cross-hatched background which once held black niello inlay. The guard has a maximum length of 117mm; maximum width in centre of 27mm; maximum height towards ends of 26mm; tang length 32mm; tang width 7.5mm; maximum blade thickness 6mm; blade thickness in centre of fuller (groove down the middle of the blade) about 5.25mm.

The condition of the guard’s surfaces is good, with little sign of underwater erosion or post-loss wear. There has been considerable loss of niello, probably a consequence of initial cleaning by the finders, and there has been minor loss of silver wire (twenty short lengths on side A, and seventeen on side B; figs 12 and 13). It is unclear if any of these became detached during the active life of the sword. Marks on the underside of the guard, adjacent to where the blade passed through it, have the appearance of hammer blows. These could have been to make the guard wall bear against the fuller, and it is unclear whether this action caused damage at the time to the niello in this area. No signs of cuts, abrasions and dents that might result from combat use have been recorded.

The upper perforation for the blade tang is rectangular (fig 14), while the lower retained the cross section of the original double-edged blade and its fuller. No casting core has been conserved inside the casting, which only contains iron corrosion products, presumably derived from the missing blade.



Fig 13. Face C of the Smalls sword guard, showing surviving background niello bottom left. *Photograph:* reproduced with permission, © Amgueddfa Cymru – Museum Wales.



Fig 14. Top of the Smalls sword guard, showing that care had been taken to file away the area between the upper and lower jaws of the flanking beasts. *Photograph:* reproduced with permission, © Amgueddfa Cymru – Museum Wales.



Fig 15. The intertwined pairs of *Type 1* and *Type 2* beasts, differentially coloured. The latter were accentuated with mid-lines of inlaid silver wire, as were the front legs and tails of the *Type 1* beasts; *Type 1* ribs and hip spirals were inlaid with niello, which originally joined with the background niello inlay. *Image*: reproduced with permission, © Amgueddfa Cymru – Museum Wales.

## Ornament

The distinctive patterns and inlays indicate that this object is decorated in the style and techniques of Irish fine metalwork of Hiberno-Scandinavian type. This was in origin the ornamental style of Viking art known as ‘Urnes’, named after the large, graceful carvings found on the eponymous wooden stave church in Western Norway (on timber felled AD 1069–70)<sup>14</sup> and preserved by reuse in its reconstruction *c* AD 1129/30. Scandinavian Urnes animal decoration is found on objects of different sizes, from runestones to wood and bone artefacts, wooden furniture, as well as small metal objects such as the openwork silver brooch from Lindholm Høje, Jutland (Denmark), and cast products of workshops in Lund and elsewhere.<sup>15</sup>

The main fields of ornament on the guard have softly sweeping figure-of-eight compositions with Urnes-type antecedents,<sup>16</sup> engraved/chased with precision, with raised areas inlaid with drawn silver wire. The background was originally inlaid with niello, which remains in places held on by a cross-hatched roughened surface cut into the brass. Three distinct animal types can be identified (fig 15):

***Type 1*** animals, or ‘great beasts’, are quadrupeds (sometimes identified as highly stylised lions) shown in profile, each having one front and one back leg represented. The large bodies taper towards the hind quarters, and where the legs join the body are marked with simple hip spirals, accentuated with inlaid niello. Each head has a ‘tear drop’ eye, coming to a point forward, a small, rounded ear, open jaws, the upper prolonged by a lobe turning slightly backwards along the snout, the lower jaw ending with a lobe turned downwards. The single foreleg, inlaid with central line of silver wire, stretches forwards and upwards, and incised ribs are filled with niello. A thin sinuous tail accentuated with silver wire curves forward from behind the rear leg, passing in a diagonal towards the ear and passing behind the neck to wrap around the foreleg of the opposed ‘great beast’. The tail also has a

14. Tvetter and Lunden Nilsen 2019; for the latest account, see Ambrose *et al* 2021.

15. Graham-Campbell 1980, 149, no. 502; Owen 2001, 205.

16. Fuglesang 2001, 176, fig 14b.

small bulbous terminal. The mid-joints of the larger legs display pointed swellings, and the larger bodies slightly taper towards their hind legs.

**Type 2** animals are thin, sinuous and snake-like, with bodies and legs accentuated with inlaid silver wire. Each has a small head, single ‘almond’ eye coming to a point forwards, open jaw and lappet lips, with small single foreleg, no spiral-joint and a tail ending in a bulbous terminal. The ribbon-like animal interlaces with itself and the larger beast on its side, and its tail. Their bodies remain a constant narrow width, and do not taper.

Each pair of Type 1 and 2 animals intertwines with the foreleg of the ‘great beast’ opposite.

**Type 3** animals occur on the top face (fig 14). Two heavier animals with ‘tear drop’ eyes coming to a point backwards have open jaws. They bite opposed sides of the tang of the grip which once projected through the guard, but has now perished. The stiff forelegs end in exaggerated clawed feet similar to those on the *Type 1* ‘great beasts’, while the hind legs are similar and back-turned. The tails curl between the hind legs, and end in small bulbous terminals just behind the small, rounded ears.

*Type 1* in this classification conforms to Kendrick’s ‘Great Beast’ and Moe’s Type 1 dominant standing quadruped.<sup>17</sup> *Type 2* conforms to Moe’s snake-like curving animal with a single limb. The third common element to Urnes style, Moe’s ‘filiform animal’, is absent, but the top of the guard has two small quadrupeds in profile, with Romanesque features (Smalls Type 3). Their biting action recalls the ornate pair of biting round eared animal heads which grip the base of the Cross of Cong in their jaws,<sup>18</sup> and the overall composition appears to herald that of some twelfth-century Romanesque animals in profile, such as those on the font at Topsham, Devon,<sup>19</sup> and on one of the wooden capitals inside Urnes church,<sup>20</sup> albeit with differences such as the elongated body, rounded ears, Insular back-pointing eyes and small lobed tail end. Unlike the animal combat of the Urnes Church animals, *Types 1* and *2* animals on the guard are not biting each other.

## Composition

The sword guard was analysed in September 1991 by x-ray diffraction by Sue La Niece while the object was in the care of the Department of Medieval and Later Antiquities at the BM.<sup>21</sup> This ascertained that the metal alloy is brass – surface analysis gave a composition of 80–5 per cent Cu, 15–20 per cent Zn and 1–5 per cent Sn, with less than 1 per cent Pb. The guard’s metal composition is comparable to that of hammered overlay on the earlier Viking sword hilt from Donnybrook, Co Dublin (not of Insular manufacture<sup>22</sup>),

17. Moe 1955, 2.

18. Three types of animal occur on the Cross of Cong, which relate to those identified by Moe at Urnes: Murray 2014, 79, 167–8.

19. Stone 1955, pl 31B.

20. Franceschi *et al* 2002, 118.

21. La Niece 1991.

22. Farrar *et al* 1978, 79.

and a Viking sword hilt examined by the BM.<sup>23</sup> It is also similar to the XRF analysis of the reverse of the central plate on the Cross of Cong of about AD 1123 (78.87 per cent Cu, 2.84 per cent Sn, 0.8 per cent Pb, 16.42 per cent Zn, 0.14 per cent Ag, 0.38 per cent Fe<sup>24</sup>).

The niello on the Smalls guard was identified as copper sulphide, which is more unusual than silver sulphide by this period.<sup>25</sup> Analysis by the BM of the niello on the late eleventh-century Bearnán Chúláin bell shrine from Glankeen, Co Tipperary, on the crozier from the River Laune, Co Kerry, and on an Insular disc-headed pin from Ely Cathedral established that it was copper-silver sulphide (stromeyerite, CuAgS, a 1:1 copper-silver ratio).<sup>26</sup> In contrast, three areas of niello on the decorated knop of an unprovenanced Irish tau-staff in the National Museum of Ireland<sup>27</sup> analysed using XRF by Paul Mullarkey produced different compositions – niello strip from knop: 66 per cent Cu, 30 per cent Ag, 3 per cent Zn, traces of Sn, Pb, Au; niello inlay 1 from knop: 36 per cent Cu, 62 per cent Ag, traces of Pb, Au, Zn; niello inlay 2 from knop: 57 per cent Cu, 1 per cent Sn, 1 per cent Pb, 29 per cent Ag, 12 per cent Zn.<sup>28</sup>

### Date and place of manufacture

Elaborate intertwined beasts were a popular decorative device on tenth/eleventh-century sword pommels and guards within the Viking world, such as the examples with Jellinge-style beasts from Sandbu, Tomberg, Tredge, Østre Alm (Norway), Jelling (Denmark) and Busdorf near Hedeby (Germany),<sup>29</sup> and the guard of the so-called St Stephen's sword in Prague Cathedral (Czech Republic), with symmetrical beasts in Mammen style.<sup>30</sup> The Smalls guard illustrates the longevity of beast decoration, executed in a version of the later Urnes style.

Objects such as spearheads decorated in Scandinavian Urnes style reached England during the later eleventh century, where the style was absorbed by workshops producing metalwork that often displayed a mixture of influences. Elements of Urnes and Ringerike styles can be seen on a bronze plaque from Hammersmith, London,<sup>31</sup> while Urnes-style ornament combined with characteristics that may be English occur on the crozier for a bishop of Durham.<sup>32</sup> The most common representations of English Urnes style on metalwork, with varying degrees of stylisation, occur on small items such as functional stirrup-strap mounts, strap ends and brooches, and a closely related group of openwork items with asymmetrical designs based on a single ribbon animal.<sup>33</sup> None display close stylistic affinities to the Smalls decoration, and few traits are shared with examples of Urnes-style influence on Romanesque English sculpture (eg Jevington, Sussex; Palmer

23. La Niece 1991 citing analysis British Museum Research Laboratory (BMRL) no. 35869v.

24. Mullarkey 2014, 300.

25. La Niece 1983, 287, and 1991.

26. Moss 1953, 76; La Niece 1983, 293, no. 107; La Niece and Stapleton 1993, 148; Murray 2016, 20–1.

27. NMI acc. no. 1901:61.

28. Murray 2014, 293.

29. Müller-Wille 1973, abb. 7, 8, 12, 13, 23.

30. Graham-Campbell 2013, 109.

31. Fuglesang 1980, no. 47.

32. Owen 1979, 206–7.

33. *Ibid.*; Williams 1997; Kershaw 2010; Webley 2014.



Lane, Coventry, or the peripheral influences on the stone lintel at Southwell Minster, and tympanum at Hoveringham, Nottinghamshire), which borrow from pre-Conquest sculptural traditions in England.<sup>34</sup>

The Ringerike style<sup>35</sup> appears to have reached Ireland via southern England, its variant being recognised among decorated ‘Dublin school’ woodwork<sup>36</sup> and bone ‘motif-pieces’. Urnes style was similarly adapted by artists in Ireland for a range of objects with local features (called ‘Irish Urnes’ since the 1940s, and more recently called ‘Hiberno-Urnes’),<sup>37</sup> creating distinctive examples of manuscript art and ecclesiastical metalwork, such as the Cross of Cong (commissioned by the Connacht king Turlough O’Connor, about AD 1123).

In the case of the Smalls sword guard, the use of niello, the symmetry of the zoomorphic decoration and the Urnes style of animals is closely related to metalwork and woodwork produced in Ireland from about AD 1100. The animals display considerable energy and tension – although they are not biting each other, they appear to represent confrontation. The style is surprisingly pure for being executed in Irish technique, the best Scandinavian antecedents being the animals on transitional Ringerike/Urnes grave monuments named after those from Eskilstuna, Södermanland (Sweden), although symmetry is mostly lacking in Scandinavian Urnes designs (fig 16a).<sup>38</sup> The Smalls guard ‘great beast’ heads share their forward-pointing almond eyes and rounded ears, but differ in mouth and foot details, and they lack neck crests. Rounded ears and protruding lips occur on the beast head carved on a stone at Botkyrka church, Diocese of Stockholm, and the mouth form and forward-pointing eyes on an Eskilstuna cist from Husaby, Västergötland (both Sweden) (fig 16b).<sup>39</sup> The overall impression of regularity in the Smalls guard recalls that of Gräslund’s ‘Profile 5’/Ljung’s later eleventh-century Group III,<sup>40</sup> and is visible in the layout of the beasts on the grave monument from St Lars Church, Linköping, Östergötland (Sweden).<sup>41</sup>

There was a long period of mixing Ringerike and Urnes styles, which could have lasted up to the end of the eleventh century. The thin silver diagonals of the snake-like beasts on the Smalls guard with tight regular bodies and graceful sinuous loops recall the snake-like Ringerike-style ornament on the crook of the late eleventh-century Clonmacnoise crozier with ribbon-shaped bodies writhing in figure-of-eight patterns inlaid with strips of silver outlined in niello (fig 17).<sup>42</sup> The overall impression and symmetry are also reminiscent of the regularity of the ribbon ornament in silver and niello of Ó Floinn’s ‘St Lachtín’s arm-shrine group’, including a strap-end from Greenmount, Co Louth, which shares slightly expanded joints derived from zoomorphic ornament.<sup>43</sup> The decorative use of

34. Owen 1979, 219, 251.

35. Fuglesang 1980, 1981.

36. Lang 1988.

37. Kendrick 1949; Murray 2014, 2015.

38. Fuglesang 1980, pl 97D, pers comm 23 Apr 1993; Gräslund 2014, fig 1, ‘Profile 3’; Ljung 2016a and 2016b, no. 37, Eskilstuna Kloster 2, Group III, end of the 11th century.

39. Åhfeldt 2012, 157, fig 4; Gräslund 2014, fig 8; Ljung 2016b, no. 61, Husaby 3, mid- to late 11th century.

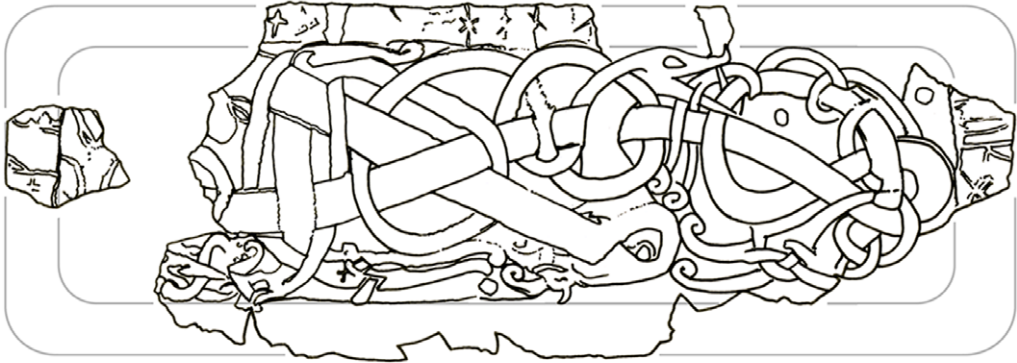
40. Ljung 2019, fig 5.

41. Ljung 2016b, Linköping S:t Lars 1, 250, no. 435, Group III, end of the 11th century.

42. Elisabeth Farnes pers comm 5 Sept 1998; see also Farnes 1975; Ó Floinn 1983b, 61, 64, 67, 165–6, cat no. 77; Wallace and Ó Floinn 2002, 255, no. 6:31. The style on the Clonmacnoise crozier is a mix of Ringerike and Urnes styles: Murray 2021.

43. Bøe 1940, 86–7; Ó Floinn 1987, 183, fig 2d, and pers comm 5 Oct 1992. The mount has a runic inscription indicating that it is from/associated with a sword.

(a)



(b)

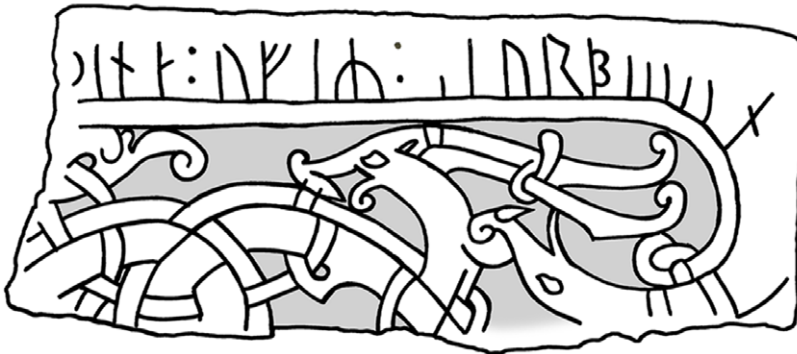


Fig 16. Animal decoration on transitional Ringerike/Urnes or Urnes-style grave monuments named after those from Eskilstuna, Södermanland (Sweden). (a) Urnes-style crossing animals on a slab from Eskilstuna, Södermanland (Ljung 2016b, Eskilstuna Kloster 2, Nr. 37, end of the eleventh century; redrawn from Fuglesang 1980, pl 97D); (b) animals on a slab from Husaby, Västergötland (Vg 53; Ljung 2016b, Husaby 3, Nr. 6, mid- to late eleventh century; redrawn from Åhfeldt 2012, fig 4).

cross-hatching is also an Insular rather than Scandinavian feature, but it is used on the guard in a non-decorative manner.

Use of silver wire inlaid decoration also occurs on the late eleventh-century workshop products such as the Bearnán Chúláin bell-shrine found near Glankeen, Co Tipperary,<sup>44</sup> on the grip-mounts of the sword hilt from Lough Derg, Shannon River Basin near Curraghmore, Co Tipperary (*c* AD 1100;<sup>45</sup> fig 18), and on a Hiberno-Ringerike strap-end from Bulford near Amesbury, Wiltshire.<sup>46</sup> However, there are differences: the Clonmacnoise crozier and Lough Derg hilt have copper-alloy castings decorated with strips of silver and copper wire inset directly into black niello background bands, creating niello 'edging'. The Bulford strap-end has silver inlaid into copper-alloy, outlined in narrow bands of niello. These objects show how Ringerike animal-interlace style was absorbed by Irish metalworkers, the bell-shrine and the Lough Derg hilt being attributed

44. Youngs 1992, 340; BM acc. nos 1854,0714.6 A (bell), 1854,0714 B (shrine).

45. NMI acc. no. 1988:226; Ryan 1991, 152, 215; Ó Floinn 1992, 340, cat no. 431.

46. Youngs 2016, 12.



Fig 17. Crook of the Clonmacnoise crozier, Clonmacnoise, Co Offaly, showing the use of silver wire inlay bordered by bands of niello flush with the surrounding metal (eleventh century; NMI R2988).

*Photograph:* reproduced with permission, © National Museum of Ireland.

to a Munster/north Tipperary workshop<sup>47</sup> and strap-end to a north Munster workshop.<sup>48</sup> The wider use of niello inlaid on a copper-alloy sword guard is further illustrated by an example found on the beach at Greencastle, Co Down, which is decorated with interlace and spirals on both sides and triangles on top face.<sup>49</sup>

The Smalls guard shares hip spirals, extended front legs, along with Insular features, such as angular projections behind knee joints, with animals on St Patrick's Bell Shrine (c AD 1100)<sup>50</sup> and St Manchán's Shrine, dated by Murray to the 1120s.<sup>51</sup> The main Smalls design also shares some principles (mirror image quadrupeds in profile, form of the feet, eyes pointed forward) with those on small panels of animal ornament on the Irish horn reliquary from the treasury of the convent of the Beguines, Tongeren (Belgium), stylistically linked to products of a Munster workshop and made about AD

47. Murray 2014, 206.

48. Youngs 2016, 13.

49. Bourke pers comm 2 May 2003.

50. Bourke 2020, 300–10.

51. Murray 2014, 261; see also Murray and O'Dwyer 2022, 100.



Fig 18. The slightly curved hilt of the double-edged iron sword with fullered blade and decorated grip-mounts inlaid with silver wire from Lough Derg near Curraghmore, Co Tipperary (Ireland), made *c* AD 1100. Unlike the Smalls guard, twisted silver/copper wire inlays frame the decorative panels, and its interlace terminates in plant scrolls. NMI acc. no. 1988:226. *Image*: reproduced with permission, © National Museum of Ireland.

1100 (perhaps a votive gift from a Munster king to the altar of a church on the Continent<sup>52</sup>).

Overall, the Smalls decoration gives the impression of a much freer rendering of what occurs ‘in the round’ on the shrine of St Lachtín’s Arm (dated AD 1118–21<sup>53</sup>) or on the Cross of Cong (made in a Roscommon/Tuam workshop in AD 1123<sup>54</sup>), where the ornament lines are stiff and often form a grid of diagonals, and whose *Type 1* animals are decorated with cross-hatching.<sup>55</sup>

Irish Urnes style appears to be particularly associated with churches such as Lismore, Donaghmore and Dysert O’Dea, which received patronage from powerful local rulers and were areas of innovation and change close to or within Hiberno-Viking towns, and Tuam, influenced through Turlough O’Connor’s control of Dublin from AD 1118.<sup>56</sup> The so-called

52. Musées Royaux d’Art et d’Histoire, Brussels, 2958; Ryan 1988, 140, pls 11, 12 and 15; Ó Floinn 1987, 185, 1997, 261; Murray 2014, 36.

53. NMI acc. no. 1884:690; Murray 2004.

54. NMI acc. no. R2833; Ó Floinn 1997, 269; Murray 2014, 41.

55. NMI acc. no. R2833; Fuglesang, pers comm 23 Apr 1993; Murray 2014.

56. Bradley 1984, 31; Murray 2014, 204.



Fig 19. Hiberno-Urnes panel on the lower knop and ferrule of the Lismore crozier.  
*Photograph:* reproduced with permission, © National Museum of Ireland.

‘Lismore Crozier’ group, named after the eponymous crozier (c AD 1090–before AD 1113; fig 19), has been proposed as a closer attribution to the Smalls guard style, with a date around AD 1100.<sup>57</sup> Murray has linked the Smalls guard with the workmanship of Nechtan,<sup>58</sup> the craftsman who made the Lismore crozier, to whom he also attributes a cross from Cloyne, Co Cork,<sup>59</sup> and a silver drinking form terminal in Carlow County Museum (‘covered in very fine Urnes-style zoomorphic interlace’<sup>60</sup>). These Murray attributes to a workshop located in the east Cork/west Waterford area, producing secular and ecclesiastical metalwork. The Smalls guard beasts do resemble in their composition and head profiles those on a small panel on the lower knop and ferrule of the Lismore crozier;<sup>61</sup> however, close correspondence on other ‘Lismore group’ objects is limited, perhaps influenced to some degree by the different natures and scales of the commissions (Table 1).

Rather than point to the product of a single *saer*, it is safer, on the basis of present knowledge, to suggest a southern Ireland/ Munster workshop as a plausible source for the guard, although the proposal that it may be the product of a workshop in Hiberno-Scandinavian Dublin cannot be dismissed.<sup>62</sup>

The use of Hiberno-Urnes zoomorphic animal ornament to cover large surfaces is exemplified on stonework such as the stone sarcophagus from the Rock of Cashel,

57. Fuglesang, pers comm Apr 1993.

58. Murray 2014, 206.

59. Ó Floinn 1983a, 171–2, 1987, 183–5.

60. Graham-Campbell 2008, 44, quoting Carol Neuman de Vegvar; see also Murray 2014, 206; Carlow County Museum acc. no. 83–108 (in the Jackson Collection no. 25).

61. Ryan 1988, pl 24.

62. Graham-Campbell 2013, 157.

Table 1. Similarities and differences of the ‘Nechtan’/‘Munster’ workshops<sup>63</sup> with features on the Smalls sword guard.

Object	Proposed workshop	Similar features	Different features
Lismore crozier, Lismore, Co Waterford: <i>c</i> AD 1100/before 1113 <sup>64</sup>	Munster workshop <sup>65</sup> ; ‘Nechtan’ workshop <sup>66</sup>	‘Urnes-style’ animal ornament with broad and narrow bands, the latter fluidly interlaced around great beast; forward-pointing almond eyes; angular projections behind knee joints.	Openwork zoomorphic ornament, with intertwined lobed lappets; backward pointing almond eyes; lacking straight front legs.
Cloyne Cross. Lismore Crozier group <sup>67</sup>	Nechtan workshop <sup>68</sup>	Edges keyed for niello. ‘Urnes-style’ snake-like animals around the legs of figures.	‘Tear drop’ eye, coming to a point backward (Insular fashion). Linked with this group by its figural representations rather than any Urnes-type features.
Unprovenanced drinking horn terminal: Jackson Collection no. 25, Carlow County Museum Carlow County Museum, 83/108 <sup>69</sup>	‘Nechtan’ workshop <sup>70</sup>	Decorated in the round with ‘Urnes-style zoomorphic interlace’ <sup>71</sup> ; stylistically comparable to the Shrine of St Patrick’s Bell (about AD 1100 <sup>72</sup> ).	Ribbon-like interlace with bodies of uniform width. No use of niello.
Shrine of St Lachtín’s Arm, Donaghmore, Co Cork ( <i>c</i> AD 1118–21 <sup>73</sup> )	Munster workshop <sup>74</sup>	Use of silver wire. Dominance of disciplined figure-of-eight and loops. Angular projections behind some knee joints. Cast in the round, without borders.	Grid-like rendering of design.

63. Murray 2016.

64. Macalister 1949, 109; Ó Floinn 1983a, cat no. 81.

65. Ó Floinn 1997, 261.

66. Murray 2014, 206.

67. Ó Floinn 1983c, cat no. 82; Ó Floinn 1987, 185.

68. Murray 2014, 206.

69. Graham-Campbell 2008, 44.

70. Murray 2014, 206.

71. Graham-Campbell 2008, quoting Neuman de Vegvar.

72. Ó Floinn 1997, 266; Bourke 2020, 310.

73. NMI acc. no. 1884: 690.

74. Ó Floinn 1997, 266.

Co Tipperary. Its main panel is decorated in Hiberno-Urnes style with two great beasts intertwined with a background filled with thin asymmetrical snakes, and slightly tapering bodies. The slightly tapering bodies on two 'great beasts' and their figure-of-eight composition recall those of the Smalls guard, though the 'tear drop' eye comes to a point backward (Insular fashion) and there is a front talon in front of three rounded toes on the feet. The patron of the chapel was Cormac Mac Carthaigh, king of Munster, and it was dedicated in AD 1134;<sup>75</sup> the sarcophagus has been regarded as that of king Tadhg Mac Carthaigh, Cormac's brother and predecessor.<sup>76</sup>

Taking all the above points into account, a date for the manufacture of the Smalls guard during the first quarter of twelfth century is most likely, perhaps *c* AD 1100. It is a clear illustration of an item made by a workshop working for both lay and ecclesiastical customers. While most surviving eleventh-/twelfth-century Irish decorative metalwork is ecclesiastical, and the craft of the goldsmith was hereditary, such monastic craftsmen also produced work for secular patrons. The Greenmount plaque from Co Louth is another secular piece in the same style, possibly a sword belt fitting.<sup>77</sup> The Life of St Colmán of Lynn describes how Anniaraid 'a famous goldsmith of the community of Tech Conan' while at Lynn made a bridle ornamented with gold and silver for the king of Offaly.<sup>78</sup>

#### EXPERIMENTAL MANUFACTURE OF THE SWORD GUARD AND A BLADE OF CONTEMPORARY TYPE

In light of the rarity of the sword guard, its technical accomplishment and beauty, and Amgueddfa Cymru's wish to provide a meaningful visualisation for public display, Master Bladesmith Frank J M Craddock was commissioned in late 1993 to manufacture a copy of the decorated guard and recreate experimentally the process of forging a high-quality Viking sword blade to accompany it.

Detailed biographies of the creation and use of replicas are frequent lacunae in the records of many replication projects,<sup>79</sup> and those that are published are often summary, lacking detail of benefit to makers, conservators and archaeologists. The commission included full documentation of the making process, with commentary on the decisions made along the way, and statistics on production time, volumes of material and fuel consumed, to inform our view of the probable cost of such swords. This account in the project archive amplifies the short summary report previously published.<sup>80</sup>

For the purposes of interpretation, a pattern-welded blade was made, although there is no proof of pattern-welding on the original sword.<sup>81</sup> Radiographic survey of Anglo-Saxon swords in the BM collections indicated that about two-thirds of ninth-/tenth-century

75. Bradley 1984, illus. 9; Graham-Campbell 2013, fig 179.

76. Wilson and Klindt-Jensen 1966, 159; see also Murray 2021, 274–303.

77. Ó Floinn 1987, 183, fig 2d.

78. Meyer 1911, 39, cited in Ó Floinn 1987, 179.

79. For example, Foster and Curtis 2016, 142.

80. Craddock 1995.

81. For more complex blade structures of Iron Age and Roman date, see Emmerling 1972, 1975, 1977 and 1978.

examples showed pattern-welding, which appeared to have gone out of fashion from about AD 1000, with the exception of scramasaxes (until about AD 1200).<sup>82</sup>

The treasuring and refitting of famous blades do not completely rule out the use of pattern-welded sword blades at this later date, and pattern-welded swords were used by the Rus into the twelfth century (recorded on swords found in Latvia, though Viking type swords from Novgorod do not appear to have been pattern-welded<sup>83</sup>). Pedersen has noted in her study of inscribed swords from Denmark that, to judge from the hilts, recorded blades with inscriptions or symbols were in use over a long period of time from the ninth to the eleventh or even twelfth century, and that blades may have been rehilted either as a repair or to meet changing requirements.<sup>84</sup> Recent x-ray analysis of sword blades in the National Museum of Ireland collections, which show little sign of Anglo-Saxon influence, have identified a smaller than expected number of examples (most commonly associated with swords with elaborate hilts, as prestige swords).<sup>85</sup> Variations in blade form have been studied by Maure and Geibig, and summarised by Jones.<sup>86</sup> It is also acknowledged that, since the recreation of a blade to accompany the guard, considerable advances have been made in understanding pattern-welding as primarily a decorative technique designed to demonstrate excellence in the exploitation and welding of different iron alloys.<sup>87</sup>

An initial design was prepared by the author with advice on form, dimensions and materials provided by Barry Ager, tempered by a recognition of the wide variety of Viking sword types and the lack of standard sizes making certainty impossible. The double-edged sword blade was informed by drawings of Viking swords from Norway and the river Lea at Edmonton, Middlesex, in the BM collections,<sup>88</sup> and examples from Ballinderry crannog, Co Westmeath,<sup>89</sup> and Lough Derg, Co Tipperary (overall length 785mm). These suggested a blade thickness of 4–5mm at the thickest points either side of the fuller at the point where the bevel edges commence, and blade lengths of about 770–800/850mm. A rectangular-sectioned tang, based on guard hole, was given an estimated length between guard and pommel-bar of about 100mm; the pommel-bar and pommel, which would have been decorated to match that of the guard, was to be made of Perspex. A blade length was hypothesised at a length of about 800mm plus the length of the tang (overall length about 960mm<sup>90</sup>). The target for the overall weight was to be about 0.8–1.5kg. Sources for technical details included Tylecote and Gilmour<sup>91</sup> and accounts of experimental forging of pattern-welded swords such as Davidson's account,<sup>92</sup> prepared from a fuller description by J W Anstee and Leo Biek.<sup>93</sup> While the suggestion of a plain steel/iron blade with maker's name such as INGELRII and mark inlaid with strips was considered, it was decided to reflect a narrative informed by the evidence of the blade being rehilted.

82. Tylecote and Gilmour 1986, 251–3.

83. *Ibid.*, 253.

84. Pedersen 2010, 316–17.

85. Harrison and Ó Floinn 2014, 76.

86. Maure 1977; Geibig 1991; Jones 2002.

87. For example, Gilmour 2014 and 2017, 57.

88. Petersen 1919; BM acc. no. 1915.5–4.1, kindly provided by Barry Ager.

89. Bøe 1940, 77.

90. B Ager, pers comm 9 Oct 1992; F Craddock, pers comm 1993.

91. Tylecote and Gilmour 1986.

92. Davidson 1994, 217–24.

93. Anstee and Biek 1961.



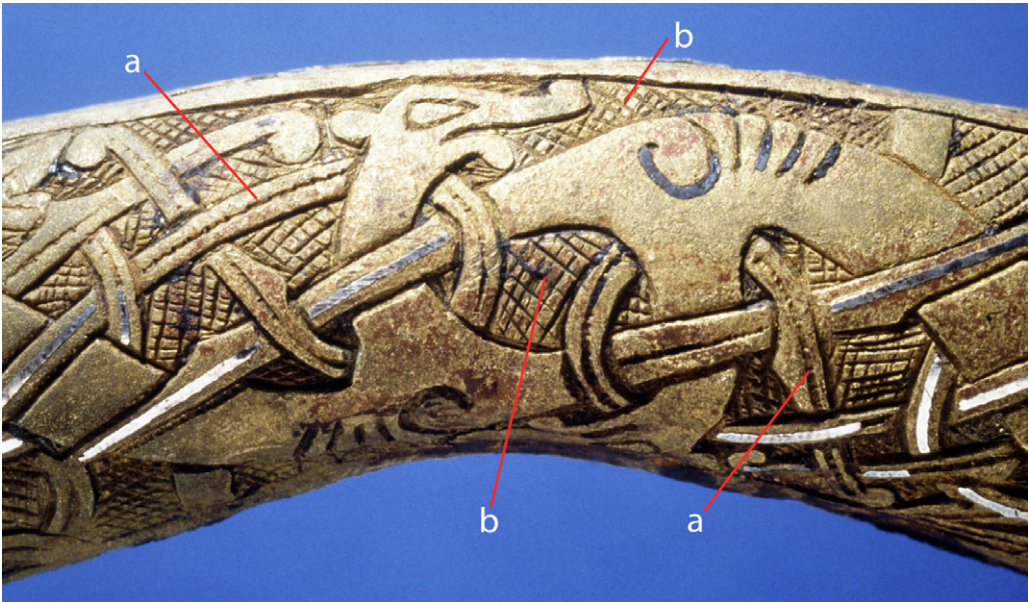


Fig 20. Details of (a) tool marks associated with inlaying silver wire; (b) cross-hatching to key in niello. *Photograph*: reproduced with permission, © Amgueddfa Cymru – Museum Wales.

### Summary of processes

The hollow casting technique, materials chosen and the precise engraving/chasing point entailed a highly skilled level of craftsmanship, and considerable cost for the patron. The process of inlaying the silver into the engraved beasts appears to combine two techniques – an ‘early’ technique of creating small jagged teeth on the bottom of the cut line, to act as a key for the silver when hammered into place, and a more ‘advanced’ technique of undercutting the sides of the engraved line to form a dovetail keyway, which closes around the wire as it is punched into the cut (fig 20).<sup>94</sup>

#### *Making the guard.*

- i. To cast the guard, a clay core was dipped in wax, which was smoothed to shape (fig 21 a, b). This was enclosed in clay, and the resulting clay mould, once dry, was heated to melt out the wax and leave a cavity. This was then filled with molten brass.
- ii. Once the rough casting had been dressed with files, a design was marked out and cut with small gravers and chisels. The guard was held firm, by a strap attached to the craftsmen’s foot, against a special sand-filled leather bag (fig 20 c, d).
- iii. After the silver wire had been inlaid, the black niello (copper sulphide) was applied; any surplus was then filed off ready for polishing (fig 22 a–c).

94. F Craddock, pers comm 27 Oct 1993.



Fig 21. Recreating the Smalls sword guard: (a) core; (b) wax model over core, in casting box; (c) recreated blank of the guard marked out with design; (d) decoration engraved on a leather pad. *Photographs:* F Craddock; reproduced with permission, © Amgueddfa Cymru – Museum Wales.

- iv. The finished guard was fitted to the blade. The missing handle (grip) was represented in Perspex (table 2).

Its experimental recreation has shown the challenging and skilful nature of the task of adding niello to a three-dimensional guard of this type and size, and then polishing back to reveal the pattern (fig 23).

*Making the blade.* The sword blade (fig 24, table 3) would probably have matched the guard and pommel in quality.

- i. The first block of iron for the blade was forged and welded into a billet.
- ii–iii. The forged strips of iron of differing steel composition (pure iron and iron with more carbon in it/low carbon iron and high phosphorous iron) were stacked and bundled together to form a forged core.

Table 2. Summary of labour and materials required to produce the guard.

Worked hours	Actual time (days)	Charcoal (niello)	Charcoal (casting)	Silver wire	Niello	Borax	Brass
52.75	7	12lbs/ 5.44kg	2cwts/ 101.6kg	0.42oz/ 12gms	1.06oz/ 30gms	0.18oz/ 5gms	8oz/ 226.8gms

Not including waste resulting from experimentation, errors, research, etc.



Fig 22. Recreating the Smalls sword guard: (a) niello applied to decorated areas; (b) niello gradually rubbed down to reveal the decoration; (c) the completed guard. *Photographs:* F Craddock; reproduced with permission, © Amgueddfa Cymru – Museum Wales.

- iv. The core bars were twisted.
- v. To fire-weld the blade blank, the tips of the core bars and filler strips were hammer-welded together, prior to hammer-welding down their length. Harder, sharper steel could then be welded to the edges.
- vi. To shape and finish the blade, after rough dressing with scrapers, stone and a file, the fuller was shaped using a sliver of steel set in a wooden bar (sometimes known as an 'Old Maid's Tooth'). The fuller both lightened the blade and increased its flexibility.



Fig 23. Hilt of the recreated Smalls sword guard and blade. Perspex suggests a form for the missing pommel, which was probably decorated the manner of the guard. *Photograph:* reproduced with permission, © Amgueddfa Cymru – Museum Wales.

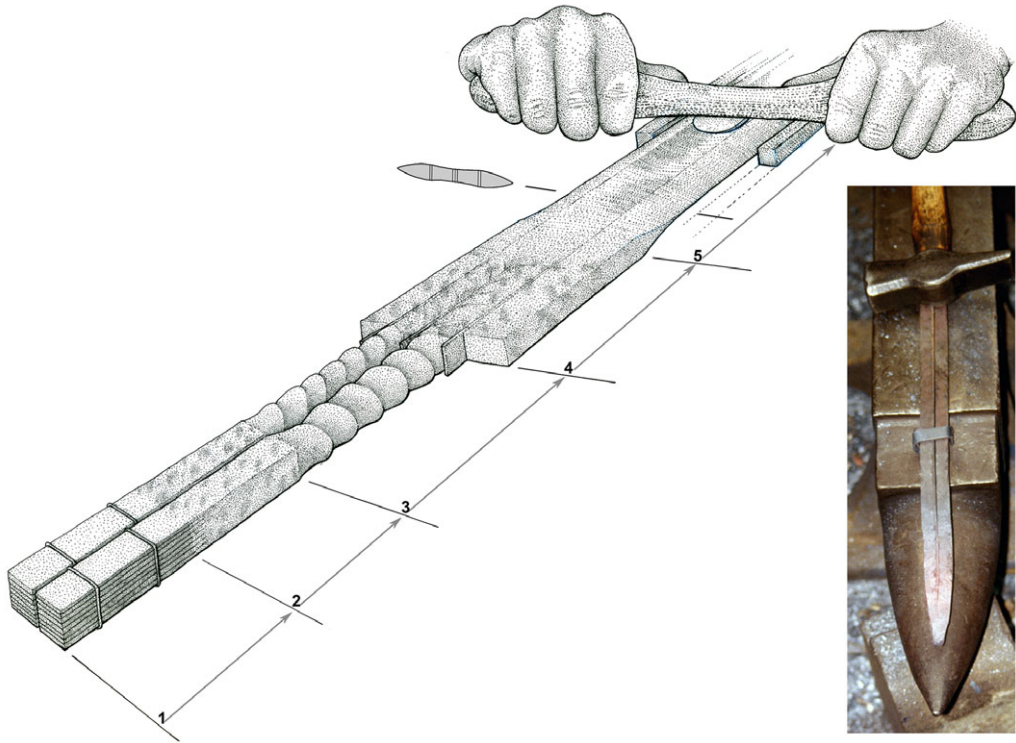


Fig 24. Recreating a blade for the Smalls sword guard. 1–2: strips of iron of differing steel composition forged from billet, stacked and bundled together to form a forged core; 3: core bars twisted; 4: fire-welding the blade blank. The tips of the core bars and filler strips were hammer-welded together, prior to hammer-welding down their length. Harder, sharper steel could then be welded to the edges; 5: shaping and finishing the blade. After rough dressing with scrapers, stone and a file, the central groove ('fuller') was shaped using a sliver of steel set in a wooden bar, sometimes known as an 'Old Maid's Tooth'. *Drawing*: T Daly. *Photograph*: F Craddock; reproduced with permission, © Amgueddfa Cymru – Museum Wales.

- vii. Finally, one of three possible finishing processes was used to bring out the pattern in the blade. A mild organic acid was used to etch the surface, which was occasionally brushed with a feather to ensure an even finish.

## DISCUSSION

On the basis of the above evidence, the Smalls sword guard can be considered part of a sword grip decorated in Hiberno-Urnes style to polychrome effect, probably made by highly skilled craftsmen in a workshop making items for both secular and ecclesiastical patrons during the first quarter of the twelfth century.<sup>95</sup> Its free flowing, energetic and lively style, with fairly 'pure' Urnes heads, may point to a production date about AD 1100 or shortly thereafter.

95. Redknap 2011, 126.

Table 3. Summary of labour and materials required to produce the blade.

	Worked hours	Actual time (days)	Charcoal (cwts)	Coke (cwts)
Stage 1	72.00	13.00	24.75	0.00
Stage 2	23.25	7.00	6.00	0.00
Stage 3	10.50	3.00	1.50	5.00
Stage 4	26.50	4.00	0.00	0.00
Totals	132.25	27.00	32.25	5.00

The use of silver wire inlay and niello and the quality of the execution indicate that this elaborate guard was made as a prestige sword (*praksverd*<sup>96</sup>). The accompanying fittings and scabbard furniture would have been of equal quality, and the missing pommel may have been similarly hollow cast, engraved and finished ‘en suite’ with the lower guard, in a similar decorative style. Its profile is not known, but may have been trilobite to pyramidal, and hollow cast. The nature of the grip remains conjectural, but could have been wood or bone/horn, covered in silver wire or leather (see fig 18).

The design is bold and dramatic, but structurally delicate, in that any appreciable shocks of the type to be expected in combat risked loosening the niello, as well as the guard itself. This raises the question of whether the sword was intended for combat, or primarily for display as a symbol of authority and position (in the manner of a sceptre or parade sword). The underside of the guard appears to show small dents from hammers, as if refitted or tightened at some point. The hollow casting may have been prone to working loose as a result of concussion transmitted down the blade. This may have been accidental, resulting in the need to tighten up the grip on the blade. Alternatively, the guard and matching elements could have been fitted to a second blade at some point in its working life, perhaps as a result of damage or changing fashion. The closing up of the guard against the blade fuller by hammering may suggest the replacement of an original, slightly thicker blade by one with a deeper fuller or thinner profile. The U-shaped notches cut between the upper and lower jaws of the *Type 3* beasts (flanking the tang; see figs 11 and 14) to prevent stress cracks and a mating without blank gaps also suggest a quality blade. The upper opening on the guard where the tang passed up through the hilt appears to have been widened, encroaching on the original engraving – again, pointing to an adjustment following the fitting of a second blade. As a consequence, the grip may have concealed an appreciable amount of the gripping beasts’ heads.

In addition to Dublin, other related groups of Hiberno-Scandinavian metalwork and possible fine metalworking workshops have been proposed in Ireland during the eleventh and twelfth centuries, associated with the patronage of powerful kings based at regional centres.<sup>97</sup> These include Roscommon for the Cross of Cong,<sup>98</sup> and a Munster workshop for the Glankeen bell-shrine, Lough Derg sword hilt and Bulford mount.<sup>99</sup> Many workshops formed part of significant monastic communities or towns under royal patronage, as indicated by the frequent mention of the names of secular patrons on metalwork enshrining relics,<sup>100</sup> and some craftsmen will have supplied both secular patrons as well

96. Blindheim 1999, 88.

97. Ó Floinn 1987; O’Meadhra 1987, 2015; Murray 2014, 205; Youngs 2016, 13.

98. Murray 2014, 205.

99. Youngs 2016, 13.

100. Ó Floinn 1987, 179.



Fig 25. The shipwreck of mercenary Hugh de Boves off Great Yarmouth (AD 1215), as illustrated by Matthew Paris in his *Chronica Majora*, II, fol 42v (46v), shows scabbarded swords tumbling into the sea. Image: reproduced by permission of The Parker Library, Corpus Christi College, Cambridge, © The Master and Fellows of Corpus Christi College, Cambridge.

as the church. While it is not possible in the case of the Smalls sword guard to confirm whether it was made by a fixed or itinerant workshop, regular patronage for ecclesiastic and secular orders appears likely. The high quality, probable cost, fine original finish and appearance of the sword illustrate the role of prestigious and valuable weapons to seal ties between factions through a diplomatic gesture or gift exchange, and to reinforce authority and status.

## Loss

The guard shows little sign of wear through use, and would have been a prized possession when lost. The findspot probably indicates the location of a shipwreck carrying an elite passenger or wealthy merchant, lost some time after AD 1100. Other explanations can be dismissed:

1. The rock is completely uninhabitable, and the find cannot represent occupational debris.
2. The guard is unlikely to have been brought over during the eighteenth- or nineteenth-century construction work on the lighthouse.
3. It is equally unlikely to represent antiquarian material onboard a post-medieval wreck.
4. The sword is unlikely to have been accidentally lost overboard, unless accompanied by other loss through shipwreck (fig 25).

Such was the quality of the Smalls sword – perhaps a personal possession or gift to a friend or ally – that it is probable that it would have been carefully wrapped in a watertight leather bag and safely stowed on board, perhaps in a chest. This implies that the ship on which it

was being carried came to grief on The Smalls, close to a sea route between Ireland and south-west Wales, at some time during the early twelfth century – a period of frequent contact between Wales and Ireland.

### Place names and seascapes

The nature of the findspot, close to sea-routes between Dublin/Ireland and Wales/Bristol during a period of intensive Viking activity in this area, made it a shipping hazard. An example of the risks taken is provided by the Welsh chronicles, which records that in the year AD 1050 a fleet from Ireland foundered off Deheubarth.<sup>101</sup> By the mid-twelfth century, ships were making frequent voyages from Ireland along the south coast of Wales to Bristol and other ports, for a wide range of reasons, from military campaigns to pilgrimage (stimulated by shared cults and Glastonbury) and the movement of people and commodities,<sup>102</sup> while ports such as Wicklow and Arklow are mentioned as trading with the small Welsh ports.<sup>103</sup>

Many of the rocks and islands of the Pembrokeshire coast bear names of Scandinavian origin, and some also have Welsh names (for example, the Scandinavian name Ramsey bears the Welsh names *Ynys Dewi* and *Ynys Dyfannog*, saints associated with it).<sup>104</sup> Several place names in the vicinity of The Smalls appear on early fifteenth-century and early sixteenth-century sailing directions in several languages. One of the earliest forms of The Smalls is *Ismael*, in Italian sailing directions attributed to Alvisé Cadamosto and published in AD 1490,<sup>105</sup> and Low German directions have *Ysmal* or *Hysmal*. Names beginning with ‘I’ could have the initial letter removed, cartographers under the impression that it stood for ‘island’, ‘ilha’, ‘isla’ etc.<sup>106</sup> Other names for The Smalls include *Masquin goales* and *schitual*, in a variety of spellings.<sup>107</sup> It has been suggested that *schitual* may be a version of the Old Norse name for harpoon (*skutill*),<sup>108</sup> and possibly also a shuttle (modern Norwegian *Skyttel*), based on the shape of the main rock. Richardson<sup>109</sup> has suggested that the Welsh for The Smalls, *lly wennol*,<sup>110</sup> (*g*)*wennol* may be a translation of the Old Norse name, on the basis of the resemblance of the main rock to a ‘boat shuttle’ used by weavers. However, weaving swords would have been the norm in the eleventh/twelfth century, and Richardson acknowledged another possible source, suggested by Gwynedd Pierce – the Welsh adjective *ewynnol*, from the noun ‘foam, spume, forth’ – as used at Swallow Falls near Bettws-y-Coed. ‘Foamy’ would also fit with the meaning of *maesgwyn*, ‘white field’ (English ‘White water’), and Breton *maez gwenn*, suggested source for *masquin* on

101. Brenhinedd y Saesson, Jones 1971, s.a. 1050; Brut y Tywysogyon, Jones 1952, 1955, s.a. 1052.

102. Ó Floinn 1997, 259–81; Youngs 2016, 16.

103. Wallace 1987, 231.

104. <https://historicplacenames.rcahmw.gov.uk/placenames/recordedname/62c4abf5-1ceo-4d4a-b467-9022aa13e4fe> (accessed 5 Dec 2022).

105. Richardson 1994, 75.

106. Richardson, pers comm 9 Feb 1994.

107. *estotual*, Nicola de Pasqualini, AD 1408; *Schitoal*, Mecia de Viladestes, AD 1413; *estotual*, Petrus Roselli, AD 1456; *schitual*, Grazioso Benincasa, AD 1467; *staul*, anon, c AD 1508; Richardson 1994, 80.

108. Charles 1992, 616.

109. Richardson 1994, 82.

110. Owen c 1600, vol 2, 554.



Guillaume Brouscon's pilotage manual of AD 1548.<sup>111</sup> 'White open field' or 'white open sea' could also be applied to the large stretch of water around The Smalls and the clusters of rocks to the east known as the Hats and Barrels. The first cartographical appearance of 'small' seems to be Laurence Nowell's map of Ireland of the mid-1560s,<sup>112</sup> as 'Smalle', and from early in the seventeenth-century versions appear with a final 's' added (*I. Smeals, I. Smals*,<sup>113</sup> *the Smalles* and *the Smaels*<sup>114</sup>).

Many ships have been lost on The Smalls, both before and after the advent of navigational aids and lighthouses, and any vessel wishing to travel to Ireland from the south coast of Wales, or vice versa, still needs to keep a course well to the south of the Hats and Barrels to be sure of clearing these hazardous rocks.<sup>115</sup> In his remarkable survey of the coast of Wales, begun in 1737, Lewis Morris drew attention to its hazards:

The Smalls lie about three Leagues W. by N. of Gresholm Island, and are covered at half Flood, which makes them very dangerous.

The main Rock of the Smalls appears, at a Distance, like the Hull of a large Ship overset; and is about Fifty Yards long at low Water, lying S.E. and N.W.; and from it to the S.E. there are Four other smaller Rocks, that appear in a Line before low Water, extending for about a Hundred Yards, and a sunken Rock Twenty Yards further; and then you are, all at once, in Thirty or Forty Fathom Water.<sup>116</sup>

Lewis goes on to recommend that 'a large Perch upon the main Rock of the Smalls, would be of infinite Service to the Navigation of Great Britain', alongside 'a new Kind of double Light-house' on Grassholm.<sup>117</sup> The first lighthouse, designed and built by Henry Whiteside, was erected on The Smalls following the loss in a tearing gale of the *Pennsylvania* of 1,000 tons, which smashed onto the rocks in 1773 while en route from Philadelphia to Bristol, with the loss of seventy-five souls. This was not the first casualty – four lives were lost when the *Mart & Susanna*, outward bound from Dublin to Bilbao, was lost on The Smalls in 1753.<sup>118</sup>

Bad weather, careless navigation and the failure to make allowances for the spring tidal race are common reasons for many more losses. These include the *Manuel* of Bilbao, en route from Liverpool to Havannah in broad daylight in 1858, despite the presence of a lighthouse, and the *George Moore*, stranded close to the lighthouse in 1887. Other wrecks in the vicinity include the *Captain McClure* (lost a few weeks after the *Rhiwabon* on 4 March 1884), the *Datura* (lost off the Barrels Rocks on 1 February 1897), the Wexford schooner *Reliance* wrecked in the gullies immediately outside the lighthouse and salvaged in 1902,<sup>119</sup> the Cardiff registered steamer *Cambro*, driven ashore on The Smalls in fog on 24 May 1913 during a voyage from Spain to Lancashire with a cargo of iron ore, and the remaining half of the Liverpool tanker *Athelduchess*, of 8,940 tons, built in 1929 and part of a convoy

111. Richardson 1994, 82.

112. British Library, MS Cotton Dom.

113. For example, W J Bleau 1643, *The Sea Beacon*, Amsterdam.

114. For full discussion of this and the misplacement of such names, see Richardson 1994, 78.

115. Bennett 1982, 32, map; Larn and Larn 2000, section 7; Hague 1994, 9, 71–2.

116. Morris 1748, 17.

117. *Ibid.*, 17.

118. Bennett 1982, 31.

119. *Ibid.*, 12.

formed in the Bristol Channel before crossing the Atlantic,<sup>120</sup> stranded in a south-west force 8 on The Smalls on 20 August 1943, where she broke in two. The stern section was salvaged.<sup>121</sup>

## CONCLUSIONS

Recent research has put the study of the Hiberno-Urnes style on a new footing, and Dublin has been seen as the source of inspiration for the Hiberno-Urnes style decoration seen on products of Mael Isu and his workshop (eg the Cross of Cong, St Manchán's Shrine, the Holycross plaque, the Aghadoe crozier).<sup>122</sup> Relationships between Wales and Ireland, and in particular Dublin, were at times close, exemplified in Welsh ruler Gruffudd ap Cynan (AD 1055–1137). Born in Dublin of mixed Welsh-Ostman-Irish ancestry, he grew up within its Scandinavian community, before his attempts to re-establish the old line of Rhodri Mawr as ruler of Gwynedd, supported by the king of Dublin. The eleventh century saw Ireland provide shelter for disaffected members of the Anglo-Saxon aristocracy, such as the flight of Harold and Leofwine Godwinson to the court of Diarmait, king of Leinster, after he took control of Dublin.<sup>123</sup> If the attribution to a workshop of the Lismore Crozier group is correct for the Smalls sword guard, then it may have been associated with the Eóganachta, depending on its date of manufacture, as the influence of the McCarthy-sept grew in dominance there from the end of the eleventh century.<sup>124</sup> Munster was dominated by the Irish high king Muirchertach Ua Briain of the Dál Cais (AD 1086–1119), and in the late eleventh century the dynasty moved from the Rock of Cashel (Co Tipperary) to the Hiberno-Norse port of Limerick. Here the Uí Briain rulers could benefit from its trading capacity with the west of Britain and France, having the Dublin and Waterford fleets also at their disposal.<sup>125</sup> *Brut y Tywysogyon* and *Brenhinedd y Saeson* record that Arnulf de Montgomery, Earl of Pembroke (c AD 1066–1118×1122), sent his steward/seneschal Gerald of Windsor (c AD 1075–1135) to Ireland in order to arrange military assistance from king Muirchertach.<sup>126</sup> The alliance was formalised by marriage between Arnulf de Montgomery and one of Muirchertach's daughters, Lafracoth, the record of which is also preserved by *Historia ecclesiastica* and alluded to by the eleventh- to fourteenth-century *Annals of Inisfallen*. According to the Welsh *Brut y Tywysogyon*, Arnulf 'sent messengers to Ireland . . . to ask for the daughter of King Muircertach ['Murtart'] for his wife. And that he easily obtained; and the messengers came joyfully to their land. And Muircertach ['Murtart'] sent his daughter and many armed ships along with her to his aid . . .'.<sup>127</sup> It is not possible to associate the loss of the Smalls guard with a particular recorded historical event, although these annals and the alliance forged between the earl of Pembroke and the king of Munster provide an elite context for movement by sea. Muirchertach banished his brother Diarmait Ua Briain (AD 1060–1118), who had raided Wales in AD 1080, and

120. Larn and Larn 2000.

121. Bennett 1982, 24, pers comm 5 Jan 1995.

122. Murray 2014 and 2015, 436.

123. Hudson 1979, 94.

124. Murray 2014, 206.

125. Duffy 1995, 394–6; Hurley 2006.

126. Jones 1971, s.a. 1102; Jones 1955, s.a. 1102.

127. Jones 1955, s.a. 1101.

Diarmait may have spent time supporting the ruler of Deheubarth. When Muirchertach temporarily retired his kingship in AD 1116, he retired to Lismore.

The early twelfth-century wreck on The Smalls is likely to be a scattered and dispersed site, with the likelihood of surviving archaeological material (including cargo) lodged in rock gullies and covered by modern wreckage (which may protect areas). In view of the high energy conditions within the gullies, while it is unlikely that hull structure will survive, other evidence for the wreck probably exists. Perhaps in time more evidence for this historic wreck site will be revealed and, with it, greater understanding of the context of the ship's voyage and those who never reached their desired destinations.

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128. NMW acc. no. 94.40H.

## ABBREVIATIONS AND BIBLIOGRAPHY

## Abbreviations

ADU	Archaeological Diving Unit
BL	British Library, London
BM	British Museum, London
HTV	Harlech Television
NMI	National Museum of Ireland
NMW	Amgueddfa Cymru – Museum Wales
RCAHMW	Royal Commission on the Ancient and Historical Monuments of Wales
RIB	rigid inflatable boat
XRF	x-ray fluorescence

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