

The Hunterston Brooch and its Significance

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LIKE SO MANY OTHER 'well-known' objects the Hunterston brooch has lacked the detailed description and illustration necessary for its evaluation. Besides providing basic information, this article discusses features of its technique and design as evidence of how the 'Hiberno-Saxon' amalgam of 7th and 8th-century art styles developed. It suggests that the Hunterston brooch is stylistically the earliest known of the inlaid and gilded 'Tara' type, and that its revolutionary design resulted from some Anglo-Saxon artist-craftsman working for a patron who wore 'Celtic' brooches of quite plain silver; further that a cross was important in the scheme of the prototype, which may have included a relic.

HISTORY

THE discovery was made probably in autumn 1830, on the Hunterston estate in West Kilbride parish, N. Ayrshire (approx. NS 178505): "The brooch was found [lately] on the surface of the ground by two men who had commenced to quarry stones, and was merely covered by the grass—the amber part of it has been injured by the action of the weather or by burning of the whins."¹ It would seem as if it had rolled a short distance, perhaps out of a cleft, from the perpendicular rocks that there (at about 200 feet O.D.) crown a very steep slope down to the shore 200 yards westwards. "Just above the spot are some perpendicular rocks called 'The Hawking Craigs' . . . Just below are a range of precipitous cliffs [exaggerated] . . . extending for a mile and a half parallel to the coast." The brooch was acquired by Robert Hunter of Hunterston, and was sold in 1891 to the National Museum of Antiquities.

Publications before 1884, and some later, concentrated on the secondary, 10th-century, runes scratched on the back; any descriptions of the decoration, and comparative discussions, have been very brief. Daniel Wilson in 1851 placed the ornament in its pre-Norse context, and gave illustrations of the whole, though these

¹ *MS Communic. Soc. Ant. Scot.*, vi (1827–32). An unsigned note, dated Hunterston 30th December 1830, on the cover of a letter in Latin to Robert Hunter about the runes by T. G. Repp, F.S.A. Scot.—who exhibited the brooch twice to the Society in January 1831. Robert Hunter, exhibiting it himself in Glasgow at an Andersonian soiree again used the word "lately" (see *The Glasgow Herald*, 8 April 1831, p. 2), which for a man of thirty-one would hardly mean five years ago. But in his family history, printed privately in 1865, he wrote "1826"; his son-in-law, Colonel Gould Weston, F.S.A., exhibiting the brooch in London in 1876 insisted on the earlier date (see *Proc. Soc. Ant.*, vii (1876), 48); this was followed by Joseph Anderson. However, Daniel Wilson, who had evidently seen the MS note but had also corresponded with Hunter in 1850, then wrote "autumn 1830" (*op. cit.* in next note, unchanged in 2nd ed., 1863).

were inaccurate.² Front and back were much better shown in full size engravings and in colour in 1868,³ and in good, but rather reduced engravings in 1891;⁴ photographs had to wait till 1940,⁵ in colour till 1948.⁶

DESCRIPTION

GENERAL (PLS. IX, X, C)

The brooch is a fairly massive, highly accomplished, casting of silver,⁷ richly mounted with gold, silver and amber insets; it now weighs overall 325 g. (11¼ oz. Troy). All the visible silver surfaces of the front and the broad edges have been gilded, as have the ornamented panels on the back. The form is that of a penannular brooch with 'triangular' terminals that are, however, completely joined together (pseudo-penannular). The head of the pin is keystone-shaped and moves freely along the hoop. The complex layout of the decoration requires reference numbers, shown in FIG. 1 and used hereafter in bold type where necessary.

THE BODY

The outline is not quite a circle, but comprises a series of large arcs as well as smaller projections. A central projecting panel on the hoop lies along the basic circumference of the design (FIG. 1), to which the long outer arcs of the terminals are tangential, as are the short 'beaks' between them (21 and 22). From beaks to panel gives 122 mm. (4¾ in.) as the diameter. The design is symmetrical about the axis. The side arcs of the hoop, lying just inside the circumference, are paraboloid. As the width of the hoop tapers from terminal to panel and the terminals expand, the inner space is kidney-shaped, measuring 87 × 57 mm.

On *the front*, in addition to the variations in outline, the solid-cast *surface relief*

² D. Wilson, *Prehistoric Annals of Scotland* (1851), 524-30 and frontispiece; repeated in *Cat. Roy. Archaeol. Institute's Edinburgh Museum 1856*, ed. A. Way (1863), 30-1 and gilt on cover; also J. Stuart, *Sculptured Stones of Scotland*, II (1865), 76 and pl. 19.

³ G. Stephens, *Old Northern Runic Monuments*, II (1867-8), 589-99 and plate; repeated, and colour plate in *Proc. Soc. Ant. Scot.*, VII (1866-68), pl. lvii and 462-4; engravings in J. Anderson, *Scotland in Early Christian Times*, II (1881), 1-6.

⁴ *Proc. Soc. Ant. Scot.*, xxv (1890-91), 418-21; repeated in *Cat. Nat. Mus. Ant. Scot.* (1892), FC 8; J. Romilly Allen and J. Anderson, *Early Christian Monuments of Scotland* (1903), pp. xcvi-viii; front shown in B. Salin, *Die altgermanische Thierornamentik* (Stockholm, 1904), fig. 716.

⁵ Ed. H. Shtelig, *Viking Antiquities in Great Britain and Ireland*, II (Oslo, 1940), 185-7; runes also in M. Olsen, *ibid.*, VI (1954), 169-71.

⁶ I. Finlay, *Scottish Crafts* (1948).

⁷ Analyses have given the following percentages:

TABLE I

	Ag	Cu	Sn	Pb	Zn	Au	Bi
Brooch	62	35	0.6	0.3	0.04	1.9	0.2
Pin	60	35	2.6	1.0	0.2	1.5	0.2

The comparative analyses needed before comment is possible are being undertaken.

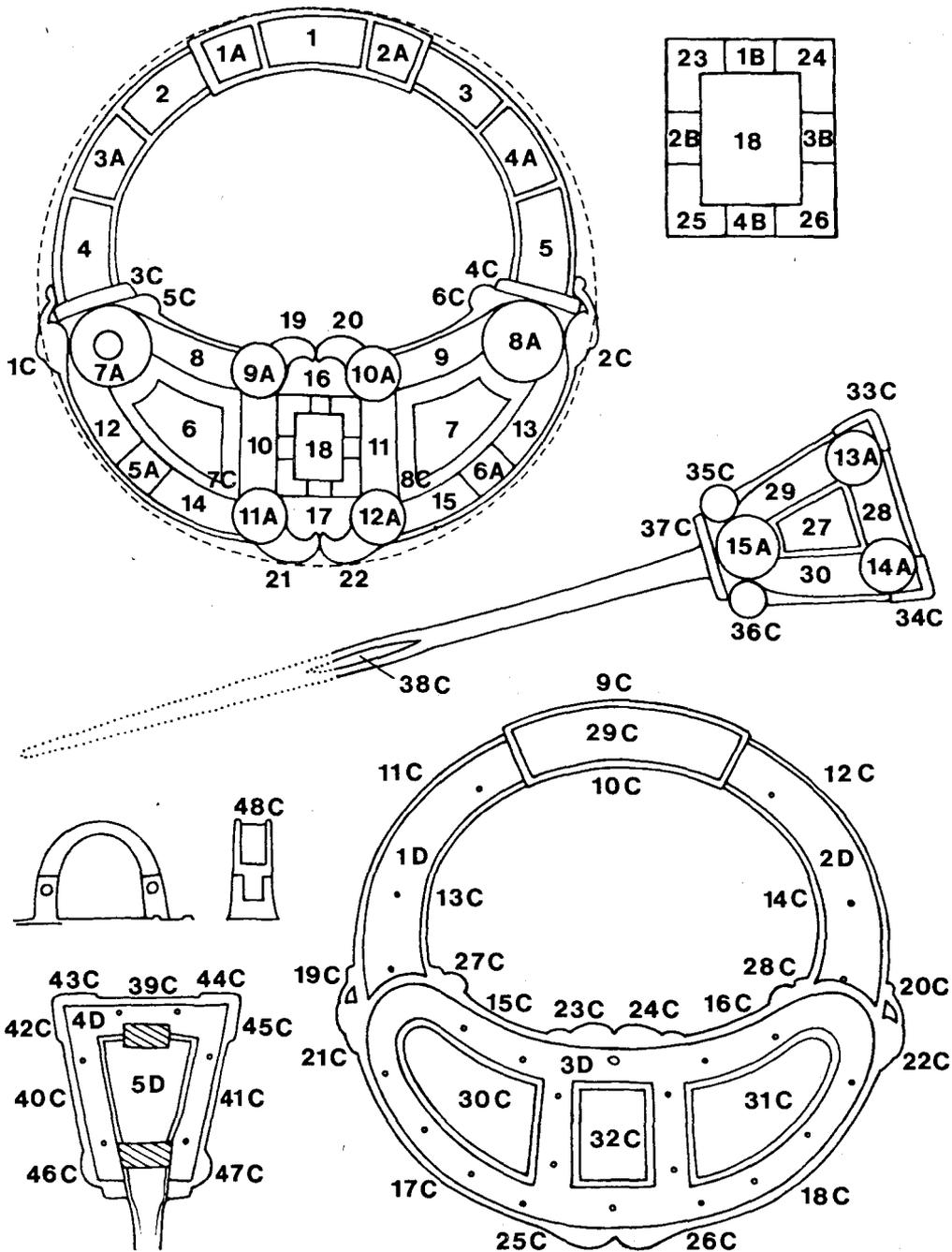


FIG. I

THE HUNTERSTON BROOCH

Diagram of compartments of decoration:
 1-27 gold; 1A-15A amber; 1B-4B garnet? (or glass?); 1C-48C cast silver; 1D-5D plain. Also shown are the circumference of the design ----, the rivets O, the construction of the loop, and a reconstruction of the pin.

is strongly varied (PL. X, A). A little very low relief is purely decorative. At the junction of hoop and terminal there projects beyond the circumference the plumed head of a bird, touching with its beak its neck and breast which are formed by incurving the rim of the brooch—the curves of the eye and cheek are emphasized, forming with the neck a broken-backed curve containing a leaf, and the upper line of the beak is corded. On the inner margin a balancing boss carries a spiral springing from a trumpet-swelling again containing a leaf. Between these is a high semi-circular projection with a row of cast pellets on its edge; this is functional and provides a buffer for the pin-head and pin: the greater wear on and near the dexter buffer suggests that the heavy pin-head was generally at that side. The high walls of thirty-eight compartments or cells are basically functional, serving as cloisons for the insets and protectors of the filigree. Their inner sides are rarely vertical but taper upwards more or less slightly. The outside of the circular cells for amber studs continues their boss-shape downwards. The quadrangular ones also slope; those on the hoop are set as if within larger compartments to form a deep double-bevelled frame, and alternate with quadrangular cloisons for filigree. The central third of the hoop projects all round and on the front has three compartments, two for amber. The wide trapezoidal frames at the centres of the terminals rise over 5 mm. in two external tiers; a row of cast pellets between two ridges decorates the step, with a leaf at the corners. The lower tier forms one edge of the elongated side-compartments of the terminal, but its curves are not concentric with their outer curves. Between the terminals is a narrow rectangular frame, of which three sides curve very slightly, enclosing eight shallow vertical-sided cells and a large inner rectangle of normal depth and slightly sloping sides. The beak-shaped cells at the corners of the terminals are vertical-sided round most of their interior.

The edges of the brooch are not vertical (PL. X, A-B); at the ends of the hoop the front is 14 mm. wide, the back 17 mm. At the middle panel of the hoop the edges are 7 mm. high, along the rest of the hoop 5 mm., and at the terminals only 3·8 mm. They all carry decorative cast patterns, sharply cut linear interlace in a panel on each of the long curves, a line of twisted rope on each beak and plume, and elongated beads or ladder pattern on the spiral bosses.⁸ The interlace along

⁸ The slope of the edges and of the cell walls, together with the very low relief of the chip-carving (0·5 mm.), would have allowed a completely decorated pattern to have been withdrawn from a clay mould. F. Henry [*Irish Art of the Early Christian Period*, I (1965), 94] writes of ornamented metalwork that in Ireland casting was the rule and was often by the *cire perdue* process, while D. M. Wilson [*The Anglo-Saxons* (1960), 144; and in *St. Ninian's Isle and its Treasure* (ed. A. Small, 1973), 97] supposes that silver blanks were cast and then carved individually. Though both processes seem to have been known in earlier centuries in Britain, the more relevant clay moulds from various sites, including those with elaborate decoration from Mote of Mark in Kirkcudbrightshire [*Proc. Soc. Ant. Scot.*, XLVIII (1913-14), 140 ff., figs. 11-12], are shown by their keyed edges to be two-piece, not one-piece for *cire perdue*; so they were evidently formed by impressing a pattern or model made of wood or soft metal. Any mould for brooch blanks, such as that illustrated by B. Hougen [*Migration Style in Norway* (1936), fig. 37], is most likely to be for lead models which could readily be carved and from which any toolmarks would be reproduced in the final object; part of such a lead brooch was found at Dinas Powys [see L. Alcock, *Dinas Powys* (1963), fig. 23]. The so-called 'brooches from the same mould' must indicate standardized industrial production of patterns followed by clay impressions. Seams indicating folding and hammering, found on the back of the St. Ninian's Isle and other brooch-pins, derive from the model, as recently proved metallurgically for no. 21. The deep and complex chip-carving of the stem of the Ardagh chalice has been proved metallurgically to be an unretouched casting [see R. M. Organ, 'Examination of the Ardagh Chalice', *Application of Science in Examination of*

the centre of the hoop **9C** is outside eight Stafford knots with pointed loops in a linked double row (Romilly Allen's no. 601),⁹ and inside a row—three and two halves—of figure-of-eight knots rounded except at the ends of the panel (RA no. 568). Along the other four edges of the hoop (**11C** to **14C**) the pattern is of alternating loops (RA no. 619), which repeat six times on the outside and five on the inside and are square at the ends. On each of the four arcs of the terminals is a plait of three lines (RA no. 502) made continuous by a join at either end.

The back has for the most part plain silver surfaces with rounded, raised margins, not more than 1 mm. high. These follow the outline in smooth curves and widen to include the projecting features of the terminals. Semicircular continuations of the terminals' margins turn them into a panel separate from the hoop. Within it three compartments are outlined by higher margins, two 'triangular' and a rectangular one between them. The central panel on the hoop, which projects all round, forms on the back a single recessed compartment.

The pin-head (PL. XVIII) is en suite with the rest of the brooch. The front corresponds with that of either terminal except that it is straight-sided and symmetrical, and is one-third shorter though equally wide (45 × 42 mm.). The semicircular stop-ridge is repeated at the apex, flanked by two spirals which are enlarged to correspond with the bird's head. The other compartments are reduced, that in the centre losing part of its beaded frame; a rectangular cell for amber is also omitted. The outer corners have slightly projecting angle ornaments with pellets on top. The edges carry angular two-line twists, forming eight and seven lozenges in the long panels (**40C** and **41C**), seven along the top (**39C**) and two at the corners (**42C** and **45C**), each concluding with a solid triangle (PL. X, B; FIG. 3, *b*). On the spiral bosses there is again a ladder-pattern.

The back of the head is plain, with a margin like the body. A concentric inner margin (irregular at one side) defines an inner 'keystone' panel that is apparently functionless. Two rectangular projections (10 × 5 mm., tapering) cast solid with the head rise 10 mm. from this panel. Dropped into a square slot in their top, and riveted through to either side, is the dowel formed at either end of the bridge that encloses the hoop (FIG. 1). The bridge was cast separately; it is quadrant-shaped (outer radius 19 mm.) with along the top a sunk and gilded panel, 6 mm. wide, of continuous plain six-line interlace (RA no. 505) enlivened by having the lines doubled.

The pin is circular in section. It is at least 5 mm. thick and broadens towards the head, where the under side becomes square and continues in relief to the bridge. Despite a fine groove where it joins the buffer (**37C**), the pin seems to be cast in one with the head. Perhaps the groove was a junction in the construction of the model from which the clay mould was made; possibly too the inner 'function-

Works of Art, ed. W. J. Young (Boston, Mass. 1973), 238–71, esp. 246]. See also now on the large scale production in the 6th century of richly ornamented piece-moulds at Helgö in Sweden, K. Lamm [*Bull. Hist. Metallurgy Group*, 1973, 1–7]; and on the use of lead and bronze patterns for provincial Roman ornaments, H. Drescher [*Early Medieval Studies*, 6 (K. V. Akademiens Antik. Archiv., LIII, Stockholm, 1973), 48–62].

⁹ Romilly-Allen, *op. cit.* in note 4, 202 ff.: hereafter cited in text as RA.

less' panel was constructional in the model. The pin is incomplete, broken off across a slight swelling, marked by a long tapered compartment filled by a cast rope (38c), and a plain compartment on the back (6D). The pin, however, is beginning to taper away from the middle of the swelling and, if on some later analogies that is taken as the central point of the shaft, the length may be restored to 150 mm. (6 in.).

THE INSETS

The gold insets consist of creatures of great clarity and vigour executed in gold filigree raised on trays of sheet gold. Their design should be considered before their technical elaboration. Each of the eight main panels contains one loosely interlaced beast up to 21 mm. across ($\frac{3}{4}$ in.) (FIG. 2). Alternating generally with amber insets, they go round the circuit of the brooch, heads outwards, and one is on the pin-head. Of three mirror-image pairs, which are not mechanically identical, one has animals (2 and 3) moving towards the rather larger beast on the central panel of the hoop but with heads turned back; the other pair on the hoop and that on the terminals move towards the panels that fill the 'gap' (18 etc.)—the top of the brooch as seen by the wearer. They are conceived as clearly articulated, very lively quadrupeds, although only the heads are realistic: the elongated bodies are

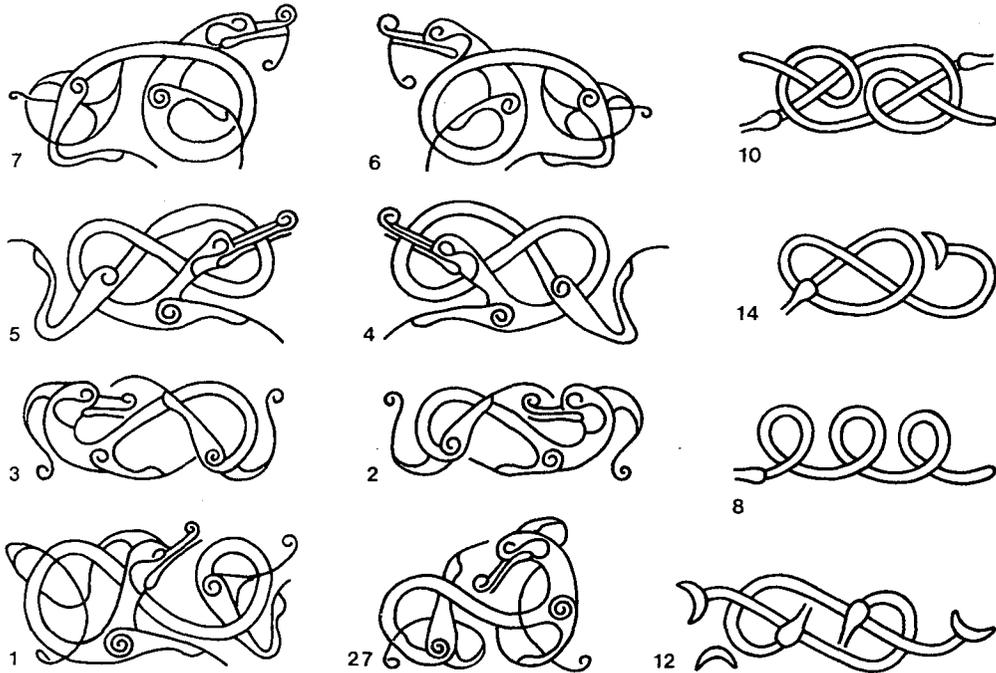


FIG. 2

THE HUNTERSTON BROOCH

Diagrams of the eight filigree animals and of four of the snake panels (p. 21 f.)

filled out with granulation and twisted or knotted more or less into figures-of-eight; the near legs only are shown; in four places the ear forms a long lappet made of a single wire; and two single-wire tails (6 and 7) and a lappet (1) have triangular excrescences halfway: 4 and 5 have no ears or tails, 6 and 7 no ears. Though so minute, the heads have the jaws and cheek delineated by separate wires, and twisted wires to corrugate the muzzle, with an extra wire above in 4 (PL. XIV, A) and 5. In contrast with the body the head and cheek are empty, but the eye, nostril and corner of the mouth are emphasized by a pellet of granulation, as are the joint-spirals, paws and tail and lappet tips; a few of these pellets are missing. The tilt of the head and expression are clearly calculated—turned in, playfully scratching (2, 3 and 27), watchful (1), grimly biting its own body (4 and 5), and stretching forward with hanging tongue (6 and 7). The paw is of 'ball and claw' type, with the claw usually exaggerated.

The flanking panels of the terminals are again mirror-pairs: (8 and 9) a snake in three coils (RA no. 549); twin snakes with fish-tails, looped round each other (12 and 13); and a similar single one in a Stafford knot (14 and 15). The bodies are of beaded wire—a thick one flanked by two thinner ones. The heads, which face the ends of the terminals, except one of each twin, are a tight horseshoe of wire with a pellet in it. The crescent tails generally contain several pellets; there is an extra crescent in the inner corner of 12 and 13. Across the ends of the terminals (10 and 11) are two snakes facing outwards, looped together like a detail of the hoop's main edge pattern. Two large extra pellets with wire collars in all these panels, and others on the hoop, hide rivets: a small extra pellet and collar above the back of the beast on the pin-head just helps to balance the design. The panels regularly have a single-wire border. A double loop like the snakes, but with no head, occupies most of the flower-shaped panels (16 and 17). Within this loop an oval grows out of the wire border; empty in 17 but for the head of a silver rivet, in 16 this surrounds what seems to be a damaged hollow gold boss from which a silver core protrudes.

The central panel (18) is decorated simply with linear s-spirals, sadly damaged. Four of their ends are in position, and two though displaced retain their finial pellet showing that one spiral is shorter than the other two. So there must have been another short spiral, torn away from where there is a ragged hole in the base-plate. The proposed reconstruction (FIG. 3, a) shows two asymmetrical double spirals flanked by two symmetrical ones. The L-shaped panels round the centre give the impression of a simple textured background, for they are filled with very fine pseudo-plaits of beaded wire; the thick border wire runs round the sides but not the ends of the panels, showing that 23 to 26 form a unit. The beak-shaped panels (19 to 22) have a similar 'plaited' filling of plain wires.

On one of the largest amber studs (7A) Stephens' illustrations show a small filigree inset, 5 mm. across, which had evidently fallen off with little trace by 1891.¹⁰ It consisted of two concentric circles of plain wire, with one or one and a half circles of beaded wire between them. The plain are shown as silver and the very centre as amber and D-shaped but these may be errors, as is certainly the

¹⁰ See notes 3 and 4.

silver colouring for panels 23 to 26. (The tops of the various compartments are more correctly shown as silver, for the gilding has worn off.)

The flanking panels on the pin-head contain rows of figure-of-eight twists, five on the short one (28) drawn as a continuously looped line (RA no. 550) with a curl and pellet at either end, the others (29 and 30) as eight separate figures.

Filigree wires and granules of various diameters were used according to function. The depth of relief was also varied, and achieved by several different methods. The effectiveness of the tiny animals was sought by making them as if they were three-dimensional, even when what can be seen is all in one plane except for the curves of the pellets and the beaded wires, and the shadows and high-lights on and beside them. The 'in situ' soldering technique, which one assumes, is so good that it leaves no traces that have been recognized.¹¹

Each panel consists first of a base-plate of sheet gold cut to shape. These have not been taken out, in recent years at any rate, but the damaged panel 18 is about 0.1 mm. thick. The edge has normally been turned up and probably down again like a hem, to form a tray to fit closely into its compartment. A single beaded wire, about 0.4 mm. thick, is soldered as a border along the top of each side. The beaded wire has been formed out of plain wire, probably by being rolled between corrugated dies, for the gold in the hollows so formed between the beads has been pressed out sideways, forming a fine slit or ridge at the circumference (FIG. 3, c).¹² The Hunterston craftsman has for the largest beads often made this almost disappear at the final stage of rolling, but the spacing and shape of the thinnest beading may be very irregular, not surprisingly. Parts of the outer border of 3 are irregular (PL. XIII, B). Within the border there may be a complete carpet of wires. On the beaks 19 to 22 this is made of plain wire only about 0.15 mm. thick; up to nine pairs are twisted s and z—to take an analogy from spinning—and laid alternately to produce a herring-bone pattern of pseudo-plait. Because of the shape of these compartments the number of wires is reduced towards the tip, and the arrangement is less neat in the smaller two (21 and 22) (PL. XV, A). Plain wire was only used otherwise on the brooch for the twist on the muzzles of the eight beasts, and for the missing inset in the amber described above. The carpet in 23 to 26 consists of four, two-ply, beaded twists laid parallel in each arm of the hidden, but presumed, L-shaped trays. The wires are again less than 0.2 mm. thick. A straight length lies up the middle between the herring-bone pairs (PL. XV, B), but is not clearly visible in 24 and apparently is omitted in 23.

The wires in more open arrangements are emphasized by being raised. Immediately under each wire seen on the sides of the pin-head (28 to 30) is another similar wire, soldered to the flat tray; the diameter is about 0.3 mm. Throughout the brooch looped and interlaced wires do not actually cross but are

¹¹ H. Maryon [in C. Singer (ed.) *History of Technology*, I (1954), 658] described the copper compound plus glue technique, used to produce a thin film of low-melting copper-gold solder. From an unpublished examination of probably Irish late bronze age filigree it seems that the copper may diffuse so completely into the gold as to leave no trace of the film.

¹² This method, suggested verbally by Mrs. Niamh Whitfield, seems more likely to produce *äquatorschnitt* and the various other irregularities than do the die-stamping or swage technique illustrated by Maryon [*op. cit.* in note 11; cf. Hougen, *op. cit.* in note 8, 13] or shaped pliers [J. Williams, *Trans. Dumfries and Galloway Antiquar. Soc.*, XLVIII (1971), 111].

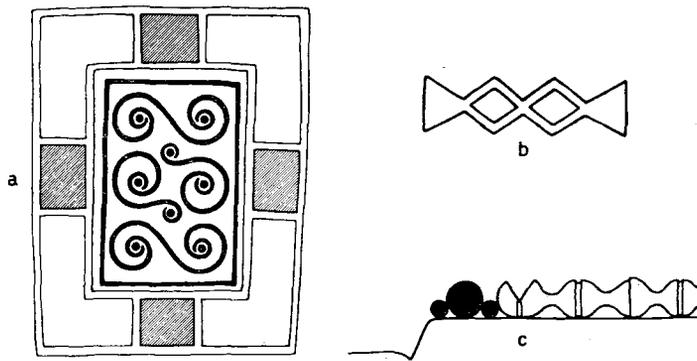


FIG. 3

THE HUNTERSTON BROOCH

- a.* Reconstruction of the central feature **18** (pp. 22, 27, 34, 39); *b.* An edge pattern on the pin-head (p. 20);
c. Diagram of three-wire filigree on repoussé, showing ridging and closing-up cut (p. 23 f.)

formed of short lengths butting together closely; slightly damaged, displaced, comma-shaped lengths in **28** show this for example, while the eights in **30** are s-shaped (PL. XVIII)—as is one end of **28**. There is a striking difference in size between the pellets in the curls of that panel, 0.4 mm. or less, and those over the adjacent rivets, around 1.3 mm., whose wire collars are also two deep. Wear on a number of the largest pellets shows them to be silver gilt.

Another way of getting depth is to solder a ribbon of sheet gold on edge. This is done, with tightly rolled ends, under the wire spirals in **18**: the ribbons are no more than 1.0 mm. high, the wire on them 0.3 mm. (PL. XV, B).

The same plate shows a corner of **10**. The trays of these snake panels (**8** to **17**) are not flat but repoussé, having the design of the filigree in relief. After being pressed out from behind to about 0.3 mm. high, this relief was sharpened up by pressure from the front along the outline, which suggests that a die had not been used. All this can be seen well on panel **13**, particularly where the neck of one of the snakes has lost its filigree (PL. XIV, B). The body of these and the other snakes consists of a stout, 0.4 mm., wire laid along the centre of the repoussé, with a fine, 0.2 mm., wire fitted close on either side and round the end of the body. A remarkable feature of the meticulous craftsmanship of these panels is that, where the thick wire butts against a fine one at an 'interlace', a minute cut, at more or less one bead back, has been made to allow the thick wire to be tilted over the fine, so as to reduce the gap between the thick wires (FIG. 3, *c*). This is also done where the body meets the tight horseshoe head, made of a single 0.3 mm. wire, or 'interlaces' with it.

The crescent tails of these creatures are not made of three wires but of two crescentic lengths of a single one which has been flattened and set on one of the beaded edges. Two to four small pellets may fill the crescents if these are not too narrow. The collars round the rivet holes with large pellets are also made of flattened beaded wire (0.25 mm. wide).

The principal panels (1 to 7 and 27) are even more complex. To raise the beasts the jeweller has not been content with repoussé, but for contrast and clarity has sought a sharper relief against a flatter background. This was accomplished by embossing the design on a separate sheet, then cutting away its background leaving links to the border, thus shaping narrow vertical-sided hollow ridges to carry single wires, as well as broader spaces for the bodies. The edges of this 0.5 mm. high cut-out, the beast and the border all in one, were then soldered onto its tray—occasionally leaving gaps which help to distinguish the tray carrying such a hollow platform from one that is just repoussé.¹³ Then, except for the border wires, each of the single wires of the lappets, tails and claws, and each of those that outline the bodies, heads, legs, ears, and also those round the rivets, are made of one wire above another, like the eights on the pin-head. The oblique of 1 illustrates these points (PL. XII, B). The wires are about 0.3 mm. thick, and the total height of the three tiers of the relief is about 1.0 mm. There is one barely perceptible variation (for no apparent reason, though there may be a slight increase in sharpness): though they rise to a similar height, the wires of beasts 3 and 27—but not of their triplet 2 (PL. XIII, A)—are not two-deep but are single flattened wires, about 0.25 × 0.5 mm. (PL. XIII, B). In 1 the eye-wire is flattened wire unlike the rest.

The filling of the bodies of the beasts is made of separate gold pellets which are generally about 0.4 mm. in diameter but of which a few are considerably smaller. There is a single row where the body is most ribbon-like, with irregular arrangements in the neck, legs, ear, lappet and tail swellings; and a single filler in or on the paws and the corner of the mouth. The wire outlining the front of each leg is curved in to form a flat joint spiral on top of which a single pellet is added, slightly larger than most of the fillers. The joint spirals in 1 (PL. XII, A) have two-and-a-half turns compared with one-and-a-half in the others. Similar curls or spirals at the nostril, tongue, tail and lappet tips also have these pellets, which are liable to be knocked off. The eye pellets are also on top of curls but are larger, 0.7 mm., and so perhaps more firmly fixed, for none are missing. The statistics of the beasts may be concisely tabulated:

TABLE II

Panel no. of beasts	1	2	3	4	5	6	7	27
Length in mm.	19	17	17	20	21	19	20	13
Height in mm.	8.5	6	6	8.5	8	11	11.5	10.5
No. of filling pellets	99	63	65	114	110	72	81	60
No. of added pellets (originally)	6	6	6	4	4	5	5	7

The attachment of the trays of filigree to the body of the brooch and pin-head takes several forms. Thirty silver rivets can be seen on the back as discs about

¹³ These techniques were noted but not distinguished or understood by the writer until demonstrated by the British Museum Research Laboratory during work on the Ardagh chalice and Tara brooch: see Organ, *op. cit.* in note 8, figs. 39–40. Verification that all the Hunterston beasts were made in this way is not possible short of dismantling.

0.6 mm. across (FIG. 1), flush with the surface except one. Most of them correspond to the larger gilded pellets with collars already mentioned, under which a circular hole in the repoussé, 1.0 mm. across, is revealed where the pellets are lost in **13** and **15** (PL. XVI). But only where the broad end of **13** is also torn can the rivet be seen (PL. XIV, B), standing as a tapered hook: it has been inserted from the back and bent over by pressure through the hole in the repoussé to grip what must be assumed to be a small plate soldered onto the back of the tray. The trays with cut-out platforms presumably catch the rivets directly. Two rivets did not underlie pellets. The head of that in **17** is clearly visible now (PL. IX), and is well flattened because it could be hammered directly instead of being pressed down through a small hole, while in the corresponding **16** the silver that protrudes from the covering gold boss which remains there, as noted earlier, is much too large to be the rivet-head itself (PL. XV, A). It is assumed to be a core but may be attached to the rivet-head, because the damage to the front has caused the rivet to be pushed out slightly at the back.

The 'plaited' panels (**19** to **26**) in vertical-sided compartments are not riveted. They were instead secured by tiny curls of silver scraped down from the wall of the cloison: jewellers' 'stitches'.¹⁴ These have all broken off, but the triangular incisions or less effectual scratches left in forming them can be seen clearly (PL. XV, A-B). There are in all some twenty-seven stitches round the beaks and the same round the L-shaped panels. The deep central panel (**18**) is similarly steep-sided but has no signs of rivets or stitches. Through the tear in the tray the space (1.6 mm.) between it and the compartment's base can be seen to contain wax, identified as beeswax with traces of chalk, which is presumed to be ancient and used as a fixative. The central panels on the terminals (**6** and **7**) also lack visible means of attachment (PLS. XVI-XVII).

The amber insets have mostly decayed on the surface, and three on the terminals and two on the pin-head have been lost, one each (**9A** and **14A**) between 1868 and 1891. Most are golden brown in colour but, of the rectangular two on the terminals, **6A** is blackened and has a rather 'fused' surface (cf. p. 16 above), while **5A** is a replacement made of a soft waxy orange-red substance, possibly ancient. The three that emphasize the triangle of the terminals and of the pin-head have been circular bosses of varying size, up to 14 mm. across. One of the largest (**7A**) is shown in the 1868 illustrations as having a circular filigree inset in the centre, as already described on p. 22. Part of the small silver pin for fixing it can be recognized deeply embedded; as also can others in **8A** and **10A**. A hole in **15A** is probably evidence of the loss of a pin and inset there. Two, at first sight empty, compartments (**9A**—amber in Stephens—and **12A**) have tightly fitted lead discs, smoother than the base of the adjacent empty cell (**11A**) and apparently about 1 mm. thick. They cannot have been added, since the edge of the setting was 'rubbed' over to hold these and the other amber insets, and so perhaps are to be

¹⁴ Noted first by the B.M. Laboratory on the Tara brooch, and confirmed as ancient by the newly found Westness brooch; these occur also on the Dunbeath and later brooches, e.g. Breadalbane and Perth 1 (see TABLE III, Appendix, p. 41).

explained as padding to save scarce material.¹⁵ That the amber was scarce may be deduced from the two narrow flat insets of the hoop (3A and 4A), for they are each made up of three separate squares without dividing cloisons.

It is suggested that *garnets*, or red glass imitations, may have been set round 18 in the small empty rectangles (1B to 4B). They might of course have contained amber but the cloisons are very shallow, 1.5 mm., and their lips have been rubbed over so slightly as to provide scarcely any catch for the insets. Beeswax adhesive is suggested, for which there is good analogy.¹⁶

The cast silver gilt panels (29C to 31C) on the back have been made separately and inserted after gilding. That on the hoop measures at most 50 × 12 mm. It hides the single rivet into 1, and itself seems to have been fastened in by a silver frame, 1 mm. thick, soldered onto the top of the compartment's 2 mm. high wall and rubbed over the lip of the panel, which however projects on either side of the left top corner. The decoration, executed in chip-carving technique, is so deep that two oval holes near the centre go through to a hollow underneath. This contains beeswax, which if ancient may have been a bedding or temporary adhesive. The pair of interlaced beasts, with heads facing outwards along the hoop, are like those in filigree (PL. XI, A). Necks and bodies are, however, completely ribbon-like, filled with hatching in imitation of twisted wire. They are quadrupeds, undulating like snakes, and biting each other's body close to the hindquarters, which are twisted back. Only the near legs are shown, and these have knee and elbow joints, marked by a dimple, small ill-defined paws (triangles rather than balls) and long claws—the positioning of these features at the lower edge of the panel is very awkward and one foreleg is bent in an arch over its hindleg. The joint and nostril spirals have comma ends, while the angle of the jaw and the tip of the two-strand lappet and tail are only slightly clubbed; the tail forms a pointed loop.

The other panels are technically similar. Again it is uncertain if the bezel setting is solely rubbed over or has also a 2.5 mm. wide frame separately soldered onto the body without there being a cast cell wall; but perhaps as on the pin-head the fine groove that suggests separate structure may be misleading. Each curved triangle, 42 mm. long, contains a pattern of trumpet spirals consisting of coiled roundels of diminishing size. In 30C, the smallest, at the apex (PL. XI, B), is a whorl in which clubbed ends meet. Next lie two zoomorphic heads with Lindisfarne-bird beaks, but no eyes, parallel to one another and facing opposite ways. The largest is filled by three big-eyed heads whose interlocking, gaping, jaws are formed of differing trumpet scrolls and curves. In the top corner of the design one of the coils from this roundel ends in a head denoted by a very large eye and a small dimple at the snout; in the lower corner is a trifold leaf. The details of 31C differ considerably (PL. X, C). At the apex are two spirals set pelta-wise. The large roundel has heads as

¹⁵ Similar lead discs were used to fasten enamel bosses on the Ardagh chalice into their backless settings on the neck-band [Organ, *op. cit.* in note 8, 258].

¹⁶ On the Westness brooch small rectangles of red glass in continuous frames had been embedded in beeswax admixed with chalk, which retains their impressions though only one survives. For the same adhesive mixture see A. Lucas, *Ancient Egyptian Materials* (1934), 2-3, 336-7.

before, but the smaller has three eyeless heads, with a central dot and triangles between them, flanked by trefoils. The upper escaping coils end in a gaping head and round eye, and a closed beak whose eye is a triple whorl.

The rectangle between the terminals is shaped as on the front. Its square-ended two-strand interlace (RA no. 591) has pointed loops and a well-defined chip-carved background of triangular planes (PL. XI, B). The strands going 'under' are actually lowered slightly; not merely, interrupted, as is normal.

THE RUNES (PL. X, C)

The runes need be mentioned only briefly in the present context. Magnus Olsen's publication reads,¹⁷ in **RD**: *MALBRIPAASTILK*—"Melbrigda owns (this) brooch." In the Celtic name, Malbride, he differs little from his predecessors; but reads a new word for brooch, previously *A TALK*, and then gives up completely; *OLFRITI* goes. "The five stems which follow on the left-hand side of the brooch are not cut distinctly in relation to one another. It may be surmised that here have been incised figures arbitrarily chosen, of no verbal significance, added merely to fill a vacant spot of the panel. That might seem to be confirmed by the fact that the characters inscribed on the right-hand panel cannot be read in a natural manner as a real runic inscription either. There we repeatedly find characters which might be intended for runes gliding over into carelessly carved signs resembling runes. Moreover, on the curving panel below are cut rather similar runelike strokes, and these pass over imperceptibly into the loosely incised zigzag ornament of the panel"—ornament contemporary with the runes one might add.

DISCUSSION

ANGLO-SAXON TRADITION AND INFLUENCE

Joseph Anderson in 1881 said: "There is no feature of design in the decoration of this brooch which is not also found in the decoration of the Celtic manuscripts of the Gospels. Its art is therefore the Celtic art of the Christian period."¹⁸ And so it has remained in general usage. Most movables in that style have at some time been claimed to be Irish, and the site of Hunterston is well placed for an Irish connexion. However the brooch has been only cursorily mentioned by writers on Irish art, and it has barely figured in the English reaction centred on the study of the Lindisfarne Gospels.¹⁹

It is now generally agreed that perhaps around A.D. 700 a great change of fashion took place in Irish metalwork, through the introduction of cast interlace and chip-carving, gilding, cloisons and other technical features, and at least the commoner use of gold and filigree. Dr. Françoise Henry writes: "The omnipresent influence of Saxon objects so manifest in these works can easily be explained by contacts which existed in the 7th century . . . [visiting] princes and retinues must

¹⁷ See note 5.

¹⁸ See note 3.

¹⁹ R. L. S. Bruce-Mitford in T. D. Kendrick *et al.*, *Codex Lindisfarnensis*, II (1960), 251-4; cf. E. Bakka, 'Some English Decorated Metal Objects', Bergen University, *Arbok*, 1963, 1 ff.

have worn belt-buckles and brooches which drew the attention of native craftsmen . . . There is obvious imitation but never a copy . . . The Irish artist . . . infinitely superior to the Saxon artist in craftsmanship."²⁰ Because of the end of the rich pagan and semi-pagan cemeteries there is a scarcity of Anglo-Saxon metalwork as it developed in the later 7th century which makes comparisons very hard. However it may be helpful to pick out features of the Hunterston brooch which are in the earlier Anglo-Saxon tradition of brooches and buckles as Dr. Henry suggests, and see how these interact with 'Celtic' elements.

The elaborate system of variously shaped compartments was a characteristic of much Germanic jewellery, and in particular is found on the Kentish polychrome disc brooches set with gold filigree, cloisonné garnets et cetera, such as the large (80 mm.) Kingston brooch.²¹ Two of its concentric zones have alternating coloured stones and filigree, and could have provided the scheme of the Hunterston hoop. Its animals are similarly disposed though much more stylized, and are in the three-wire convention of the Hunterston snakes.

An eagle with a strong beak and an exaggerated eye that may occupy the whole head is a very widespread form of Germanic brooch from the 5th century onwards,²² and is frequent on other ornaments. This study began long ago with the sudden recognition that Hunterston's round amber studs at the ends of the terminals and the curved panels beside them (9A and 19 etc.) are such eagle heads, no less characteristic than the Lindisfarne bird-head at the ends of the hoop (1C and 2C). The way all these heads are set, standing out at the junction of curves that have different radii, is significant. For undulating, elaborately profiled, outlines are a general feature of Germanic ornaments, for example the early 7th-century great gold buckle from Sutton Hoo (PL. XIX, A). This has along the side eagle heads (with small eyes) at one end and those of beasts in the middle and other end; the centre carries snakes.

These are all dotted in imitation of filigree, but real filigree was also found at Sutton Hoo. Minute beasts in three-wire technique, having bead-and-circle eyes and pear-shaped legs filled with pellets of granulation, are included alongside pseudo-plaits in the background of the garnet boars on the shoulder-clasps.²³

These techniques and conventions, with S-shaped ribbon and semi-naturalistic animals, human figures and spirals, are to be seen much earlier still in incredible profusion on a number of 5th and 6th-century Swedish gold collars.²⁴ Holmqvist comments that though Anglo-Saxon work, such as the Taplow buckle [and clasps],²⁵ raises the filigree creatures on a repoussé gold background, neither it nor any other known to him is like the collars and somewhat later Scandinavian scabbard mounts, in raising them on embossed cut-outs over flat sheets. One

²⁰ *Op. cit.* in note 8, 96-7.

²¹ Enlarged in D. M. Wilson, *Anglo-Saxons, cit.* in note 8, pl. 35; cf. Salin, *op. cit.* in note 4, fig. 708. In colour in R. F. Jessup, *Anglo-Saxon Jewellery* (1950), frontispiece.

²² W. Holmqvist, *Germanic Art* (K. V. Akademiens Handlingar, xc, Stockholm, 1955), pl. xv.

²³ R. L. S. Bruce-Mitford, *Sutton Hoo Ship Burial* (British Museum Handbook, 2nd ed., 1972): buckle, pl. E; clasps, pl. F. On Anglo-Saxon granulation, *idem*, 'Snape Boat-grave', *Proc. Suffolk Inst. Archaeol.*, xxvi (1953), 17-19.

²⁴ Holmqvist, *op. cit.* in note 22, 22-3 and 45, pls. viii-ix; *idem*, 'Die schwedische Goldhalskragen', *Studia Gotica* (K. V. Akademiens Handl. Ant., Ser. 25, 1972), 234-53.

²⁵ Wilson, *op. cit.* in note 21, pl. 44.

example can be cited that is intermediate in time and place between Hunterston and the Scandinavian cut-outs, a tiny buckle from Faversham in Kent (PL. XX, A-B).²⁶ Four eagles are set round two snakes whose horseshoe heads bite each other's tails; the snakes and beaks and the border between them are in repoussé, cut out and covered on the back with a flat rectangular plate, through which further triangles were cut to accentuate the beaks.

The eagles have a convention that arose for the most stylized 'Style I' creatures in order to allow them to be recognized in the tangle of lines, a right angle or inverted L-shape behind the eye to mark the head.²⁷ This and the other convention for the same purpose, the pear-shaped haunch, are prominent on the Sutton Hoo buckle (PL. XIX, A), and like the rest of the bodies there they carry a line of imitation beaded-wire. The corner-pieces beside the pair of bosses on the Hunterston pin-head are so similar that it may be suggested that the artist still thought of the combination 33C/13A as a conventional animal head. The hatching on the cast animals on the back of Hunterston is another form of imitation filigree used already in this way at Sutton Hoo, on the mounts of a wooden vessel.²⁸

The origin of another Hunterston convention is a long-standing puzzle—the common joint-spiral found earlier in the Book of Durrow and the Lullingstone bowl. It may perhaps be seen emerging on the Sutton Hoo buckle (PL. XIX, A), for there some of the pear-shaped wire loops, even though imitation, have been allowed to bend into incipient spirals.²⁹ The pear convention, it seems, was becoming less necessary as creatures became more natural (though it remained on the semi-naturalistic eagles on the Sutton Hoo purse); it did not need to be drawn so strictly, but could be changed readily into another decorative mannerism. At least this is a closer source than much earlier Scythian and pre-Roman Celtic prototypes. Joint-spirals are already found on the ribbon animals of the Taplow drinking-horn's terminal mounts.³⁰

One of the buckles from Faversham (PL. XIX, B), more markedly triangular than the little one just quoted, has animal-headed ribbon creatures in the central panel and, like the Sutton Hoo buckle and many others, has two bosses at one end balanced by a larger one at the other—in short, the design used for the Hunterston pin-head (PL. XVIII), and modified for the terminals.

So far then, techniques used by the Hunterston craftsman can be seen to be part of a long Anglo-Saxon tradition and to include some that could hardly have been copied, some hardly perceptible, by anyone not apprenticed and trained in a first-class goldsmith's workshop; and the details of the design are such that the designer, if not the same as the craftsman, could only have been someone so familiar with the conventions and spirit of Germanic metalwork that he applied them to a new situation. If not an Anglo-Saxon at birth, he had become one.

He had also, however, experience of the art that had developed particularly

²⁶ *British Museum Guide to Anglo-Saxon Antiquities* [R. A. Smith] (1923), pl. 1, 3; Salin, *op. cit.* in note 4, fig. 706.

²⁷ For the 'helmet' convention see T. D. Kendrick, *Anglo-Saxon Art* (1938), figs. 14 and 16; Salin, *op. cit.* in note 4, fig. 542.

²⁸ Sutton Hoo Handbook, *cit.* in note 23, figs. 11–12 and 28 f.

²⁹ *Ibid.*, enlarged on the cover.

³⁰ Kendrick, *op. cit.* in note 27, pl. xxxv detail drawing.

in Anglo-Saxon Northumbria during the second half of the 7th century as a result of the Christian missions from the Celtic church and from Rome. The cast bird heads at the side of the brooch are the most obvious link with the style of the illuminated 'Hiberno-Saxon' manuscripts, and specifically with the Lindisfarne Gospels on which similar heads, never common, appear for the first time. The coiled trumpet-spirals on the back with their fantasies of griffin heads and what look like eyeless horse heads, are however no less close, to judge from the details illustrated by Bruce-Mitford.³¹ Some zoomorphism is however already a part of Celtic curvilinear decoration in pre-Roman times and is found early in the hanging-bowl art that is reflected in the manuscripts, notably on the exquisite bowl from Sutton Hoo, probably Irish.³² The small leaf-like inserts in the trumpet-spirals are a motif at home in the 'broken-backed' curves of the brooch's long bird necks and of the isolated spirals (1C, 5C, 27C etc.), but come unexpectedly in the corners of the central beaded frames (7C and 8C). As the spirals are tight and non-returning they come perhaps from filigree rather than from trumpet-spirals. The heads of the Hunterston filigree animals are at the same general stage of naturalistic development as those of the Lindisfarne Gospels, where the ear-lappets and ball-and-claw foot are introduced too. The snouts are longer, however, more in the line represented by Durham MS. A II 17 and later manuscripts.³³ The fine linear interlaces in the narrow edge panels of the brooch have squared ends and sometimes pointed loops like some of the Lindisfarne interlaces, but are probably related rather than descended from them, though the history of this type of ornament is controversial.³⁴

ORIGIN AND DEVELOPMENT

Reginald Smith traced the development of Irish brooches, mostly penannular, 'of five centuries'. He associated the introduction of richer decoration with the richer fashions of the illuminated manuscripts, and the enlargement of the hoop and terminals with the wish for elaboration.³⁵ In effect the time was ripe for a change; and he dated the time by the echoes of Lindisfarne in the Tara type with which he began the new series. Neither he nor later writers have found evidence of the changes being by stages. Kilbride-Jones, classifying in more detail the earlier, zoomorphic, penannular series of the British Isles, and trying to give dates, might have pointed to several that have hatching of pseudo-filigree type and diaper panels imitating chip-carving; but while recognizing them as relatively late he did not claim that they influenced the Tara type's design. Indeed he perspicaciously wrote that the new type had been devised complete, "worked out on paper".³⁶

³¹ *Codex Lindisfarne*, cit. in note 19: for birds see fig. 38; for trumpet-spirals, fig. 46.

³² *Ibid.*, pl. 17; and Sutton Hoo Handbook, *op. cit.* in note 23, pl. c.

³³ *Codex Lindisfarne*, cit. in note 19, pl. 6.

³⁴ *Ibid.*, fig. 48; G. Haseloff, 'Fragments of a Hanging-bowl from Bekebourne, Kent, and Some Ornamental Problems', *Med. Archaeol.*, II (1958), 80 ff., esp. 94-97; see also note 37 below.

³⁵ R. A. Smith, *Archaeologia*, LXV (1914), 223-50.

³⁶ H. E. Kilbride-Jones, *Proc. Roy. Irish Acad.*, XLIII C (1935-37), 379-455, esp. 394: the rest of the argument and the chronology is less acceptable now. See also A. Mahr and J. Raftery, *Christian Art in Ancient Ireland*, I (1932), II (1941), 61-74 discussion, and 126 ff. catalogue.

This phrase would meet exactly the situation we have just considered, supposing the Anglo-Saxon artist-craftsman (either at home or travelling abroad) got from a rich patron who was wearing a penannular brooch, the commission to make one like it—but decorated like his samples in the style he had grown up with. This would be a later development than any metalwork we have been able to consider, and so might have included the major elements for which we have not seen parallels: in particular the cast silver cells derived from soldered cloisonné, well-developed fine-line interlace,³⁷ the extensive use of amber for insets and its enrichment with gold filigree.³⁸ Apart from the Celticizing elements found associated with Anglo-Saxon and Mediterranean styles in the Lindisfarne Gospels (where spirals and linear and animal interlace are kept separate, as on Hunterston, though not so strictly as in the Book of Durrow) the only part of the brooch foreign to say Northumbria is the basic shape and pin-mechanism itself; and that is modified by being made pseudo-penannular.

Two problems then arise: why are there no reminiscences of the decoration of earlier terminal:?? and why was the gap between them closed, even though this made fixing the pin to the cloth much more difficult? A possible solution to the first question is that the patron's brooch had spiral decoration in a good Irish style³⁹ (not so far found in Scotland), which was retained, indeed elaborated; but having to be segregated, as was customary, it was relegated to the back where it formed panels **30c** and **31c**. The Anglo-Saxon polychrome brooches had indeed decorated areas on the plain back, round the hinge and catch-plate of the pin, which on Kingston are fine filigree including eagle heads.

The plain style. A preferable solution to the absence of reminiscences of earlier decoration is, perhaps, that the hypothetical patron's brooch was undecorated. Two large silver brooches, up to 150 mm. across, with plain triangular terminals are included in the Norrie's Law hoard from Fife. They have lost their pins and their hoops are twisted ornamentally,⁴⁰ but otherwise they resemble three smaller brooches, with simple pin-heads and terminals decorated at most by an inconspicuous pounced border, from Tummel Bridge (Perthshire),⁴¹ a similar one from Lagore crannog in Ireland, and some others.⁴² It can be argued that there was a

³⁷ As suggested by M. Ørnes-Christensen, *Acta Archaeologica*, xxvi (1955), 126. The comparable narrow panels in Swedish metalwork of Vendel style C are thought to derive from the British Isles but to be too similar in date to, if not earlier than, the Lindisfarne Gospels and so not derivable from its group of MSS. The *Bügelscheiben* brooches of Vendel style D in the second half of the 8th century curiously continue edge patterns [see P. Olsen, *Saxe von Valsgårde* (1945), 114; and Salin, *op. cit.* in note 4, figs. 574, 576], which are very similar to Hunterston. These are exceptional here apart from the Tara brooch. The interlace on the front of our later cast brooches becomes more complex.

³⁸ Amber beads were common in some Anglo-Saxon cemeteries, and amber was sometimes set in the centre of gilt 'applied' brooches [see Jessup, *op. cit.* in note 21, 62]. Dr. J. Close-Brooks has suggested that the gold sequin found in the citadel of Dalmahoy fort, Midlothian, might have been similarly used as an enrichment; it is 5 mm. across, 'hemmed' and decorated with eight impressed dots [see *Proc. Soc. Ant. Scot.*, lxxxiii (1948-49), 196].

³⁹ E.g. Henry, *op. cit.* in note 8, pl. 13.

⁴⁰ Anderson, *op. cit.* in note 3, fig. 24; and *idem*, *Proc. Soc. Ant. Scot.*, vi (1864-66), pl. ii (N.M.A.S. nos. FC 36, 37). Wilson [*St. Ninian's Isle*, *cit.* in note 8, 102 n.] suggests these are necklets, but the largest only equals a 14½ inch collar and the corners of the gap would nip the throat.

⁴¹ *Proc. Soc. Ant. Scot.*, xxii (1887-88), 268-9; E. T. Leeds, *Celtic Ornament* (1933), fig. 37. (N.M.A.S. nos. FC 162-4.)

⁴² E. Fowler, 'Celtic Metalwork of the 5th and 6th Centuries', *Archaeol. Jnl.*, cxx (1963), 142 and fig. 5.

phase when ornaments with plain surfaces were favoured.⁴³ These would also include some Irish zoomorphic brooches such as one found in Mull, ten massive silver chains—two of which have Pictish symbols engraved on them and originally enamelled—,⁴⁴ a heavy wire chain and beaten silver bracelet from Gaulcross (Banffshire),⁴⁵ what may be bracelet fragments from Norrie's Law, and some of the open-work escutcheons for hanging-bowls.⁴⁶ One of the escutcheons, pierced by four pelta-shaped voids, was found with bowl fragments and the brooches at Tummel Bridge. Another, having two peltae, on a bowl from Castle Tioram (N. Argyll) is like those on a bowl from Eastwell (Leicestershire), while a clay mould for casting one has been excavated at Craig Phadrig near Inverness.⁴⁷

Though the date of these escutcheons is usually thought to be the 5th century, it seems perverse to separate them from the 7th-century enamelled examples; further the analogies with late or sub-Roman metalwork (which generally have animal and other patterns on the surface besides open-work) are not entirely satisfactory. The typological series (including the Scottish rim-forms) can be reversed, to place the plain escutcheons late in the 7th century. The same date for some, or indeed much of the Norrie's Law hoard, and in particular the brooches, rather than around 600,⁴⁸ is deduced from what may be the latest objects in it. These are the pair of oval silver plaques on each of which are engraved (or cast) two Pictish symbols, originally enamelled red, placed as on an incised 'symbol stone'. The 'spectacles' symbol is decorated with linear spirals in what could be a 7th-century hanging-bowl manner; the other is a dog's head that has so much in common with the Lindisfarne animal heads that either they are inspired by Pictish art or the Pictish animals derive from Northumbrian manuscripts.⁴⁹ Either way they cannot differ greatly in date, but several lines of argument combine to indicate that the Pictish animals originated from the Evangelists' symbols in the manuscripts later than the Book of Durrow, and that the other symbols as we have them also began close to the Lindisfarne phase.⁵⁰

The closed terminals are a problem for which there is less tangible evidence available. Reginald Smith suggested that the link-up was needed because of the strain of increased size and weight. Certainly the extra thickness in the middle of Hunterston's hoop is another innovation which might be a response of this kind. An alternative is that the designer, being accustomed to disc brooches and, more relevantly, to simple ring brooches of a not uncommon Anglo-Saxon form,⁵¹

⁴³ R. B. K. Stevenson, 'The Earlier Metalwork of Pictland', in J. V. S. Megaw (ed.), *To Illustrate the Monuments* (forthcoming).

⁴⁴ Mull 1, see Anderson, *op. cit.* in note 3, fig. 10 (N.M.A.S. no. 106); Kilbride-Jones, *op. cit.* in note 36, part of group A. Chains, see Anderson, *ibid.*, figs. 30-2; *Proc. Soc. Ant. Scot.*, LXXIII (1938-39), 326-7.

⁴⁵ R. B. K. Stevenson, *Proc. Soc. Ant. Scot.*, xcvi (1963-64), 206-9.

⁴⁶ E. Fowler, 'Hanging Bowls', in J. M. Coles (ed.), *Studies in Ancient Europe* (1968), 287-310, lists with refs.

⁴⁷ R. B. K. Stevenson in A. Small, *Craig Phadrig* (Dundee University Geography Dept., 1972), 49-51 *idem*, *op. cit.* in note 43. For Eastwell see *Med. Archaeol.*, VIII (1964), pl. xix.

⁴⁸ As Fowler, *op. cit.* in note 42, 128.

⁴⁹ I. Henderson, *The Picts* (1967), 126-7.

⁵⁰ R. B. K. Stevenson, 'Sculpture in Scotland in the 6th-9th Centuries', *Heidelberg Kolloquium über frühmittelalterliche Skulptur*, 1970 (Mainz, 1971), 67-70.

⁵¹ *BM Guide*, *cit.* in note 26, fig. 49.

demonstrated that the gap was not essential and spoiled the sweep of his design. Although the balance of the brooches, and the representations of later brooches in 8th to 9th-century sculpture,⁵² suggest that they were worn with terminals downward or slightly obliquely, the heads of the animals on the Tara type show that they were designed from the wearer's viewpoint, as if the terminals were upward. It might therefore have seemed objectionable to have a gap in the centre, or more positively desirable to fill it with a significant feature. If the central motif on Hunterston is a Christian cross (see below, p. 39 f.), this might have been a sufficient reason.

It is, at any rate, remarkable how not only the new way of decorating Celtic brooches but the new awkward shape caught on. If a significant number of the Irish zoomorphic penannulars are to be assigned to the 8th century,⁵³ it did not supersede the old form at once, but its decoration was the source of the main developments for the next century or two in Ireland and in Scotland; and in Ireland the penannular form was long in reasserting itself, perhaps because of the assimilation of brooches to ring-pins. Strictly speaking the Tara brooch itself is a large loose-ring pin,⁵⁴ for its actual pin, over four times as long as the inner diameter (compared with Hunterston's twice a considerably larger opening) cannot have lain as on a true brooch, across the top of the hoop when fastened, but was wholly under it. Hence its need for the chain attached to the ring, to tie round the point of the pin to secure the ornament when it was stuck through a cloak, and not held firm to the cloth within the ring as a brooch: such a string-fastening was the essence of ring-headed or looped pins from the earliest iron age to Viking times.⁵⁵ More detailed study is required to make clear the relation between the Tara type and Irish ring-pins with broad but simple heads, but it may be suspected that Tara came first. It seems more likely that a closed brooch was miniaturized and so started a new series of pins, than that a full-sized penannular brooch had its mechanism changed by closing the gap in order to conform to the shape of smallish pins.

Early influence. The proposition in the preceding paragraph is one reason for thinking that Hunterston is nearer to the prototype than the now eponymous Tara. It has indeed a number of 'early' features which subsequently are dropped more or less completely, while some reappear in later stages and the broad principles remain. The primary comparisons are with the three other brooches or large pins that have animals in filigree (Tara, Dunbeath and Westness) and with a number that have cast animals (e.g. Mull 2, and a small ring-pin from Duni-

⁵² E.g. Hilton of Cadboll, see *Proc. Soc. Ant. Scot.*, xcii (1958-59), 41 and pl. v; Wilson, *St. Ninian's Isle*, *cit.* in note 8, 103.

⁵³ Although the date Kilbride-Jones gave [*op. cit.* in note 36, 441] for the large Ballinderry brooch is shown to be 150 years too late by its relationship to the main Sutton Hoo hanging-bowl [Henry, *op. cit.* in note 8, pls. 24-25], there could be quite a long degeneration series within his groups C and D after the start of imitation chip-carving diamond-pattern panels. This may be supposed to be about the same time as the comparable pattern on the Faversham buckle (PL. XIX, B), if not later still.

⁵⁴ Found at Betaghstown but the romantic name is usually used (diam. 87 mm., with projections). See also p. 31. For enlarged details see Henry, *op. cit.* in note 8, pls. 28-29, 40-42.

⁵⁵ R. B. K. Stevenson, *Fifth Viking Congress* (ed. B. Niclasen, Torshavn, 1968), 29; and *idem*, *Proc. Prehist. Soc.*, XXI (1955), 282-92; cf. late neolithic Skara Brae [S. Piggott, *Neolithic Cultures of the British Isles* (1954), fig. 55]; Wilson, *St. Ninian's Isle*, *cit.* in note 8, 87. A figure at White Island, Fermanagh, wears a heavy ring-pin brooch with cord [D. Lowry-Corry, *Ulster Jnl. Archaeol.*, xxxiii (1959), pl. vi, 4].

pace).⁵⁶ Heads project from the circumference of some of these, but are atrophied except on Tara; and in all cases the complex Germanic outline has been lost in favour of a plain circle, with at most a step where hoop and terminals meet. The very Germanic eagle heads do not recur.⁵⁷ The regular procession of beasts on the hoop was soon dropped and any evidence for it is defective; the Dunbeath fragment may have had it though its second beast is fish-like (PL. XX, c), and Tara has an interlace panel but has lost several others—some animals shown in a 19th-century engraving look imaginary. Mull 2 has cast animal panels on the hoop, but arranged differently; Westness bird-headed interlace; Dunipace only interlace like various brooches without any animals. Hunterston's kind of 'buffers' does not recur, but on Mull 2 and others there is a ridge comparably at right angles to the hoop. Later fashion favoured Tara's fingernail-shaped projection (functionless on a ring-pin), for which the influence of the snout of some zoomorphic brooches has been suggested, but the curved margin on the back of Hunterston (which recurs on the later Snåsa) may also be relevant.

In many details Hunterston and Tara are remarkably similar to each other, despite the baroque elaboration of the latter and the extreme development of its back which allows it to be fully reversible. Some similarities are obvious: the construction and general layout, the predominant use of filigree on the front but cast decoration on the back, including animals, the restriction of complex spiral patterns to the back. Others are minor and so, perhaps, are more remarkable as evidence of common inspiration: the small cast spirals on the front, the position and character of the interlace and rope-patterns on the edges, the zoomorphism of the cast trumpet-spirals on the back—quite different from Tara's other trumpet-spirals of enamelled hanging-bowl type. Tara's use of amber resembles that of Hunterston but in some respects it goes further, adding pointed-oval and D-shaped cells, and frames filled with amber. Some of these are used to replace the simple three-stud arrangement of the pin-head and terminals, which remained more popular. Another change on the Tara pin-head is the addition of a large cast animal head to the apex, apparently harking quite far back to that on the foot of some Anglo-Saxon and continental fibular brooches.⁵⁸

Comparisons of the *filigree* of these various brooches show close links in technique and design but differences too. Dunbeath's terminal animal (PL. XX, c) is on a hollow platform, its hoop's fish on simpler repoussé, and both are filled with granulation, more irregular than Hunterston's; the beast, which unfortunately is damaged, also differs in style, particularly its feet. Tara has repoussé only, perhaps because its designer aimed at an elaborate effect rather than clarity; he fills the seven-wire body of the terminal beast with two-ply wire and beehive spirals, he is sparing in the use of filler pellets, and on the pin-head he draws in outline only.

⁵⁶ For Westness see Stevenson (1968), *op. cit.* in note 55, 24-31; Nat. Mus. Ant. Scot., *Brooches in Scotland* (1966), pl. 9; diam. 55 mm. For other references see Appendix, p. 41. For Dunbeath (Achavrole) see *Proc. Soc. Ant. Scot.*, xiv (1879-80), 445-9.

⁵⁷ There is an unconnected reappearance as modified disc terminals on a 9th-century brooch from Antrim [*BM Guide, cit.* in note 26, fig. 174].

⁵⁸ E. T. Leeds, *Early Anglo-Saxon Art and Archaeology* (1936), pls. xvii a, xix b, cf. xx a, c; *BM Guide, cit.* in note 26, pl. xiv; Salin, *op. cit.* in note 4, figs. 636-42 etc.

His beasts are more contorted and have two instead of one-ball claws. The Westness beasts are different again in design; they have more granulation but also twisted wires, and several times have wires carelessly misplaced on their repoussé. Of the spiral and interlace panels Tara's are particularly fine.⁵⁹ All have flat backgrounds. It is curious that although the linear patterns on the panel between the terminals are different on Hunterston, Tara and Westness, their technique is the same; they have beaded wire on the edge of upright ribbons, which is also used for Tara's outline beast. On the other hand, Hunterston's old-style three-wire snakes are not to be found on the other animal brooches, but reappear, with different heads, on several of the brooches that keep the filigree tradition over the next centuries.⁶⁰

Later influence. The long succession of developments of and from the Tara type was convincingly indicated by Reginald Smith. Brooches and unequivocal ring-pins (one distinction between which might be when the pin overall exceeds twice the diameter) both continued the triangular terminals. They were generally entirely cast, and so much cheaper, and most had a bar or bars instead of a solid junction of the terminals. Some retained animal decoration, others were simplified to mere interlace. While this happened the animals on *the terminals* of the most elaborate ones were replaced by rosettes which, when the triangular background was dropped, became lobed (ultimately disc-ended) terminals, as in the truly penannular Pictish series, fully described and illustrated recently by David Wilson.⁶¹ This also included square and outward-flaring triangular terminals. Another, perhaps solely Irish, series kept the closed triangular terminals but with a central rhomboid panel, sometimes decorated in filigree and in time edged with animals in openwork or solid.

It is quite outside the scope of this paper to discuss these ramifications, but examples of them have been brought together in TABLE III (Appendix, p. 41) to show how features found on Hunterston and Tara recur through the 8th and 9th centuries. Overall comments are however needed on the development of the hoop, the pin-head, and the gap.

The hoops of triangular terminals mostly remained rectangular in section and decorated with interlace patterns, while those of the Pictish lobed terminals were generally plano-convex and divided into lengthwise zones either decorated or plain. Perhaps early in the 9th century hoops that are quite plain except for the central cartouche became fashionable in both series, the first becoming narrow,

⁵⁹ The finer wires in the Anglo-Saxon three-wire pattern adversely compared by Henry [*op. cit.* in note 8, pl. ii] are however only about 20 per cent thicker than Tara's. Bruce-Mitford illustrates as the finest Anglo-Saxon filigree the Dover polychrome brooch [*Codex Lindisfarn.*, *cit.* in note 19, pl. 16 b].

⁶⁰ See TABLE III, Appendix, p. 41. The Ardagh chalice or ciborium [Henry, *op. cit.* in note 8, pl. 37 and colour pls. c-d; Organ, *op. cit.* in note 8] uses the three-wire technique for linear interlace panels, snakes and parts of animal interlace, and mounts them all on hollow platforms cut out to a remarkable degree. The two-wire relief, one above the other, is also used. A later date than Hunterston or Tara may be suggested because of the rather crude drawing of the interlaced animals, particularly that of the gaping heads on the base. Their spidery character and sometimes very long tongues seem on the way to one of the St. Ninian's Isle bowls [Wilson, *St. Ninian's Isle*, *cit.* in note 8, no. 3, fig. 22] (decorated in *pointillé*).

⁶¹ *Ibid.*, 67-105, figs. 14-16, 19, pls. xxxi-1.

reminiscent of the round bars of the old zoomorphic hoops, and soon omitting the cartouche.

The *pin-head* sequence is harder to follow because many brooches are now without a pin or have a replacement, ancient or modern. The keystone or triangular head lasted long; together with Tara's single circular stud and two leaf-shaped corner studs it recurs on the (probably) late 8th-century large Ardagh brooch. An early variant is square and has four studs in a cruciform arrangement with a rhomboid panel between them. This central shape is apparently only later echoed on terminals. The rosettes on triangular terminals are matched from the start by their pin-heads. L-shaped angle-pieces are not uncommon on pin-heads or terminals, as Reginald Smith noted, and his comparison with the angles of composite metalwork (such as the Monymusk reliquary) is obviously correct in the case of Mull 2's square pin-head, but does not invalidate the suggestion made above (p. 30) on the origin of those on Hunterston.⁶² The Pictish series of the later 8th century breaks with current tradition and has, whatever the shape of the terminal, a pin bent back into a hook, its curve widened into a more or less pointed oval and decorated. When the heads of ring-pins do not run free along the hoop but are hinged, as Westness and Dunipace, they have individual forms built out of the stock of motifs. Since relatively few brooches of any kind survive, it is hard to distinguish between continuity and revival; but a definite instance of revival seems to be provided by the barrel-shaped pin-heads of the Hiberno-Norse late 9th-century penannular brooches with triangular terminals; these must be inspired by those of the 6th to 8th-century zoomorphic series, though readily distinguishable from them.⁶³

Lastly we come to *the gap*, which has often been considered to distinguish Scottish from Irish brooches, but which, unfortunately, does not. First, it may be stressed that Hunterston is alone among the true brooches in having a solid junction of the terminals. Further, it is mainly the smaller ring-pins that follow Tara in this respect. Most of the pseudo-penannulars have an opening, crossed by one, two or three bars of various widths. No very satisfactory explanation can be given for having bars, but the cord needed to hold on a ring-pin would more easily have been attached to a bar than to the widest part of a solid brooch;⁶⁴ alternative attachments are to a ring held by a central animal-head as on Westness, or to a loop on the back of some late ornaments. Although the distribution makes it evident that the Picts, and the Scots of Dalriada, preferred true brooches to ring-pins by the time the lobed terminals were developed, this distinction cannot be carried back to an earlier date. For a closer examination shows that the four 'true-penannular' brooches with triangular terminals that have been found in Scotland, which are earlier than the flared variety, have all had a bar removed: on Mull 2 the gilt ends of a central panel remain in the edge, and also on Pierowall

⁶² Rather different angle-pieces again are to be seen on a 6th-century square-headed brooch from Ragleigh [Wilson, *Anglo-Saxons*, *cit.* in note 8, fig. 31]. It has also precursors to Tara's leaf-shaped corner fillers, as has the large Sutton Hoo hanging-bowl's square escutcheon.

⁶³ Smith, *op. cit.* in note 35, 246; compare Kilbride-Jones, *op. cit.* in note 36, fig. 23, with the co. Tipperary brooch (Appendix, p. 41); also O. S. Johansen, 'Bossered penannular brooches', *Acta Archaeologica*, XLIV (Copenhagen, 1973), 63-124.

⁶⁴ See also note 76 below.

which originally would have resembled the Eidfjord brooch; Dunbeath too, with its fine filigree, has the remains of a recess, not gilt and so perhaps cut away during manufacture even; Breadalbane, with its terminal rosettes, has lost inset filigree from the terminals (after it was 'stitched' in) because the cut removed cell walls. The crude brooch from near Abergeldie (Aberdeenshire) has stumps of a bar. One found outside Scotland had a bar originally: that from Bergøy, Norway.⁶⁵

The main *conclusions* that can be drawn from all these considerations are, that the new decorative style of Celtic brooch and its new pseudo-penannular shape were simultaneously devised and had a revolutionary effect on fashion; that there was in fact a prototype whose main features and minor details continued to influence the dominant lines of development despite continuing changes in fashion; that it was Anglo-Saxon both in design and execution; and that the Hunterston brooch is closest typologically to the prototype, and chronologically to the Lindisfarne Gospels (*c.* A.D. 700), with the Tara brooch perhaps the work of a superlative pupil. Other craftsmen quickly copied and developed the style. There is no adequate evidence to localize the earliest stage. Silver at that time may have been commoner in Pictland than Ireland, and with it the plain style involved in the hypothesis of origin; but Ireland was the richer country. The fashion for penannulars reasserted itself more quickly and completely in Pictland and among the Scots of Argyll, but there is no apparent predisposition anywhere in these countries for their original displacement, and it remains the hardest problem to solve, one more likely to be psychological than functional.

ICONOGRAPHY

In the 'objective' mental climate of post-antiquarian archaeology it has been usual to treat most of the designs of 'dark age' art, including brooches, as purely decorative, and to ignore the human characteristic of wearing charms of all kinds. Some apotropaic features have been evident indeed, on Frankish belt-buckles, from the *AΩ* on an early example in the Traprain Law treasure to later representations of the Magi and of Daniel and the Lions.⁶⁶ The significance of a clear cross like those on the Norrie's Law hand-pins has been doubted, and more justifiably that of the varied cruciform patterns on the polychrome brooches. Yet, in the later middle ages, brooches were favourite vehicles of religious representations and of inscriptions, such as the names of the Magi as well as of Jesus, which no doubt retained some significance even when the lettering was debased to mere patterning.⁶⁷

The recurrent animal, eagle and human motifs of Germanic art have, how-

⁶⁵ Appendix, p. 41; and for Abergeldie (N.M.A.S. no. FC 297) see Wilson, *St. Ninian's Isle*, *cit.* in note 8, pl. xlv. The remarkable engraving on the back of Bergøy, less certainly secondary than that on Dunipace, has distracted attention from its more orthodox front.

⁶⁶ A. O. Curle, *Treasure of Traprain* (1923), no. 147, pl. xxxiii; E. Salin, *Civilisation mérovingienne*, iv (Paris, 1959), chaps. 35-36.

⁶⁷ J. G. Callander, 'Fourteenth-century Brooches', *Proc. Soc. Ant. Scot.*, LVIII (1923-24), 163-84. For 15th and 16th-century brooches see Wilson (1851), *op. cit.* in note 2, 560-1, pls. ii-iii (the Brooch of Lorne's central box screws off and may have held a relic, as also the similar Lochbuy brooch in the British Museum [*Brooches*, *cit.* in note 56, pl. 20]).

ever, been reconsidered by a number of recent writers, and it seems most likely that they always had meanings—analogueous to their natures, characteristic of gods with whom they were associated, connected with beliefs about the next world, protective or aggressive. The symbolism seems to have taken many forms, indeed apparently contradictory as well as syncretistic, and to have changed from time to time, in part under the influence of Christianity.⁶⁸ Thus the boar on the crest of the Benty Grange helmet, as well as the cross on its nose-piece,⁶⁹ would have been protective whether the owner was himself a Christian or not. One could speculate as to whether there was some more complex significance in the animals that flank the cross on a Merovingian buckle, like that of the dolphins beside the cross of the Faversham hanging-bowl which are more orthodoxly Christian.⁷⁰

In his study of the Frankish reliquary box at Werden and other objects, Victor Elbern has identified beasts, birds and snakes surrounding the crucified Christ, as being the Creatures of Genesis, chapter I, forming a parallel to the New Creation or Redemption. He cites St. Ambrose's commentary on Genesis, where the three orders of living creatures of land, air and sea, assimilate snakes and fish.⁷¹ The presence on the Hunterston brooch, as he has pointed out in conversation, of beasts, bird heads, and snakes with fish-tails, should have the same significance.

Corroboration was later provided by the recognition of a cross as the central feature of the brooch, generally hidden in illustrations by the pin, and defaced both by damage to its filigree and the loss of its coloured stones. The form of the cross has also obscured its identity, because the central rectangle is so relatively large. A large square or circular panel filled with a geometric pattern was, however, a normal part of the design of a cross when there was no crucified figure, for example on the set of Byzantine bowls from Sutton Hoo or on a 'carpet' page in the Lindisfarne Gospels.⁷² Presumably it represented the risen glory, in contrast to death on the cross.⁷³ If, as seems likely, the four small squares of the arms of the Hunterston cross had inset garnets, they were the only red colour in the brooch and would have stood out clearly.

The programme of the design then appears to be a central Cross flanked by the Creatures: a procession of beasts all of which look towards it, two birds at the sides, and various fish-snakes most of which do the same; surrounded too by the four eagle heads, arranged perhaps to protect it, but also pecking in pairs at the two golden bosses now missing or damaged; creatures eating the fruit of life

⁶⁸ H. Vierck, 'Ikonographie des germanischen Tierstils I', *Bayerische Vorgeschichtsblätter*, xxxii (1967), 104-40; G. Müller, 'Germanische Tiersymbolik und Namengebung', *Frühmittelalterliche Studien*, II (Berlin, 1968), 201-7; A. Becker, *Franks Casket* (Regensburg, 1973).

⁶⁹ Wilson, *Anglo-Saxons*, *cit.* in note 8, pls. 28-29; Sheffield City Museum, *Report*, 1955-6.

⁷⁰ E. Salin, *op. cit.* in note 66, figs. 156-8; for Faversham escutcheon see *BM Guide*, *cit.* in note 26, fig. 51; for dolphins see F. Cabrol and H. Leclercq, *Dict. archéol. chrétienne*, s.v. Dauphin.

⁷¹ V. H. Elbern, *Madridrer Mitteilungen*, II (1961), 183 ff. [*"scimus reptilia dici genera serpentum . . . sed multo magis omne quod natat reptandi habet vel speciem vel naturam"*]; also in *Das Erste Jahrtausend* (ed. Elbern et al. Düsseldorf, 1963), I, 436-70; cf. *idem*, 'Zierseiten in Handschriften des frühen Mittelalters als Zeichen sakraler Abgrenzung', *Misc. Medievalia*, VIII (Universität Köln, 1971); on the Lullingstone bowl see *idem*, *Aachener Kunstblätter*, XLIII (1972), 151-3.

⁷² Sutton Hoo Handbook, *cit.* in note 23, pl. 31, fig. 25; *Codex Lindisfarne*, *cit.* in note 19, fig. 60, taking particularly the centre of folio 2v.

⁷³ The 'halo' of Celtic stone crosses, and the jewelled corners of crosses, e.g. stamped on late Roman pottery, are cognate.

as in the inhabited vine-scrolls with which we are familiar. The constant programme of much Pictish relief sculpture, a cross surrounded by animals, may reflect the same ideas.⁷⁴ The pecking bird heads on the large Rogart brooch, and the related bird or animal heads on some of the St. Ninian's Isle brooches, may also have had a significance within this cycle.⁷⁵

It may be an accident that the rectangle carrying the cross resembles a miniature book-cover,⁷⁶ but that its surface is raised above that of the other panels of the brooch must be deliberate design. A recently published circular polychrome brooch, from Rosmeer in Belgium, has in the centre an equal-armed cross raised on a tiny hollow box in which there was a non-utilitarian mixture of white clay, reddish colouring matter and beeswax.⁷⁷ No explanation was hazarded, but the tremendous development of relics and reliquaries in the 7th and 8th centuries, as later, might provide one. Charles Thomas has discussed the cult of relics in Britain at that time, for example the various relics of St. Oswald referred to by Bede which included dust from the pavement on which his bones had been laid.⁷⁸

Although the Hunterston brooch is not a reliquary, for the central panel is not a hollow box but is sunk with no significant space below it, this is not to be expected unless it were itself the prototype we have postulated. A cross-covered box for a relic mounted on a brooch commissioned by a royal patron for some notable person or occasion would, however, have provided reasons both for closing the gap between the terminals, and for the imitation of the design as well as of the decoration. A relic could not otherwise be placed as the central feature of a penannular brooch, and the striking novelty and beauty of the ornament would be reinforced both by the occasion of the gift or presentation, and by the sanctity of the association. Its fame was assured, though now lost to us.

There is as it were a postscript that helps to confirm the presence of a cross on the prototype but shows that as such alone it did not need to be centrally placed: the square pin-heads of Mull 2 and Bonsall, each with a rhomboid-centred cross. The prototype might indeed have had a rhomb rather than Hunterston's rectangle, and this may be the significance of the Tara brooch's central rhomb in its less clearly cruciform arrangement of amber insets.⁷⁹

APPENDIX

TABLE III

TABLE III compares recurring features of selected brooches through the 8th and 9th centuries; the arrangement involves guesses at relative sequence, but the groups shown must overlap chronologically as they ramify, e.g. 4, 14 and 24 may have been contemporaneous.

⁷⁴ Henderson, *op. cit.* in note 49, pls. 47-9.

⁷⁵ Wilson, *St. Ninian's Isle, cit.* in note 8, pls. xxxvi and xxxii (N.M.A.S. nos. FC 1, 286-7).

⁷⁶ *Codex Lindisfarn., cit.* in note 19, 259. The bar that fills the 'gap' in the later brooches may be reminiscent of this rectangular feature.

⁷⁷ H. Roosens and D. Thomas-Goorieckx, 'Die merowingische Goldscheibenfibel von Rosmeer', *Archaeologica Belgica*, cxxxiii (1970), 5-18.

⁷⁸ [A.] C. Thomas, *Early Christian Archaeology of North Britain* (1971), 132 ff.; cf. E. Salin, *op. cit.* in note 66, 86-7.

⁷⁹ Leclercq, *op. cit.* in note 70, draws attention to *Losange* as a still enigmatic symbol.

References for the brooches listed in the table (cf. Smith 247-50):

2. M & R 1 pls. 13-15; Henry 1 pls. 28-9, 38, 40-2; cf. note 54.
3. Anderson fig. 16; *op. cit.* in note 56, and PL. xx, c; (N.M.A.S. no. FC 9).
4. *Op. cit.* in note 56; *Brooches* pl. 9; (N.M.A.S. no. IL 728).
5. Anderson fig. 8; Wilson pl. xlvi; (N.M.A.S. no. FC 5).
6. Smith fig. 5; *BM Guide* pl. xi, 2; *Med. Archaeol.*, VI (1962-3), pl. iii.
7. *Vik. Ant.* v 42-4; *Wilson* pl. xxxix back only.
8. Anderson fig. 22; Smith fig. 8; *Vik. Ant.* II 93; (N.M.A.S. no. II 198).
9. M & R pl. 23, 1.
10. Anderson fig. 9; *Kilkenny Archaeol. Jnl.*, 1854-5, 339.
11. Smith pl. xxvi, 8.
12. *BM Guide* pl. xi, 1; M & R pl. 23, 2.
13. *BM Guide* pl. xii; M & R pl. 13, 4; Wilson pl. xlvi.
14. Smith pl. xxvii, 2; M & R pl. 22, 1; Henry 1 pl. 44.
15. (Lagore) Smith fig. 7; M & R pl. 20, 3.
16. Anderson fig. 23; M & R pl. 23, 6; *Vik. Ant.* v 66-7.
17. M & R pl. 37, 1; *Vik. Ant.* v 64-5.
18. M & R pl. 62, 2.
19. Anderson fig. 20; (N.M.A.S. no. FC 10).
20. *Brooches* pl. 10; Wilson pl. xxxi; (N.M.A.S. no. FC 284).
21. Wilson pl. xxxiii; (N.M.A.S. no. FC 285).
22. Smith fig. 10, c; Wilson pl. xxxviii, b; (N.M.A.S. no. FC 13).
23. Anderson fig. 15; Wilson pl. xliii; (N.M.A.S. no. FC 176).
24. M & R pl. 22, 2; Wilson pl. xlvi.
25. Wilson pl. xxxii; (N.M.A.S. no. FC 287).
26. Anderson fig. 14; Wilson pl. xlii; (N.M.A.S. no. FC 177).
27. M & R pl. 62, 3.
28. Smith fig. 10, b; Wilson pl. xxxviii, c (scale wrong); (N.M.A.S. no. FC 14).
29. Anderson fig. 16; Smith fig. 10, a; Wilson pl. xxxviii, a (scale wrong, d. 82 mm.); (N.M.A.S. no. FC 12).
30. Smith pl. xxvii, 1; M & R pl. 54.
31. Smith pl. xxvi, 7; M & R pl. 23, 4.
32. M & R pl. 20, 1; Henry 1 pl. 45, a.
33. Smith pl. xxvii, 3; M & R pl. 40, 3; Henry 1 pls. 45, b, and 36.
34. M & R pl. 38, 1; cf. Smith pl. xxviii, 1.
35. M & R pl. 21, 2; Henry II pl. 60.

Note:

As the Westmeath brooch (*BM Guide* fig. 181) has not been included in the table, but was once suggested as an intermediate stage between the zoomorphic penannulars and the Tara type (Henry, *Jnl. Roy. Soc. Ant. Ireland*, LXVI (1936), 236), it may be noted that various features suggest a late 8th to 9th-century date for it, e.g. the rectangular junction of the hoop and terminals, the zones on the hoop, and the T-shaped cloisons for enamel.

Bibliographical notes for works cited in the list of references:

Anderson	<i>op. cit.</i> in note 3	M. & R.	Mahr & Raftery, <i>op. cit.</i> in note 36
<i>BM Guide</i>	<i>op. cit.</i> in note 26	Smith	<i>op. cit.</i> in note 35
<i>Brooches</i>	<i>op. cit.</i> in note 56	<i>Vik. Ant.</i>	<i>op. cit.</i> in note 5
Henry	<i>op. cit.</i> in note 8	Wilson	<i>St. N. Isle, cit.</i> in note 8

ACKNOWLEDGMENTS

The fine photographs of detail taken specially in 1966 by Mr. Alexander Cain, Aberdeen University, have been essential to this study as well as to its publication. For the silver analyses, investigation of gold solder and metallurgy of a brooch pin, thanks are due to Dr. Hugh McKerrell, for the identification of amber and of wax compounds to Mr. J. C. McCawley, both of the research laboratory of the National Museum of Antiquities; and for the diagrams to Miss Helen Jackson also of the Museum. I am also indebted to Dr. Joseph Raftery and to Dr. A. E. A. Werner for opportunities to examine in detail the Tara brooch and the Ardagh chalice in the National Museum of Ireland and the British Museum, and for information about them; to Dr. R. L. S. Bruce-Mitford for allowing me access to important Anglo-Saxon and Celtic metalwork

at the British Museum, and to the Trustees of the Museum for permission to reproduce photographs; to Dr. O. Møllerop, Stavanger, for checking facts; and finally to Prof. V. H. Elbern for a key idea and for offprints.

NOTE

The Society is much indebted to the National Museum of Antiquities of Scotland for a grant towards the cost of publishing this paper.