

East Scandinavian Style I—A Review

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IN THE LAST decade knowledge of Salin's Style I Ornament in East Scandinavia has increased through the studies of Erä-Esko and through the remarkable finds at a workshop site at Helgö in Uppland. A characteristic feature of East Scandinavian Style I is the frequent use of small ornamental fields bordered by high ridges. In this article it is suggested that the ridges served to canalize the heat of the melted bronze during casting, and so prevent the mould from cracking. This was specially important in East Scandinavia where high-tempered bronze seems chiefly to have been used. That the fragility of the moulds was a real problem is hinted at by the relative numbers found at Helgö. The majority are for casting relief-brooches—which are comparatively rarely found cast. There are fewer moulds for the more frequently found cast bronzes, such as clasp-buttons; because the moulds for these were smaller, they were probably less prone to damage during casting.

Because of the small size of their ornamental fields and the extensive corrosion which characterizes the bronzes found in East Scandinavia the ornament has often been misunderstood and described as highly degenerate. Through the systematic work of Erä-Esko we now know that East Scandinavian Style I was highly developed and deliberate. The rich finds from Helgö when fully interpreted will probably emphasize further the international character of this style. This appears of greater importance when it is realized that the style seems to have flourished at a time immediately preceding the Vendel period, which is specially rich in East Scandinavia.

TWO BOOKS that are important for the understanding of East Scandinavian Style I have appeared in the last ten years. The first is Erä-Esko's study *Germanic Animal Art of Salin's Style I in Finland*;¹ the second is *Excavations at Helgö*, IV, *The Workshop*, by Wilhelm Holmqvist, in collaboration with Kristina Lamm, Agneta Lundström and Jutta Waller.² Some of the material from the Helgö workshop was published in earlier parts of this work, particularly in volume III.³

Erä-Esko's study was the first truly scholarly examination of East Scandinavian Style I. Several of the objects he describes had previously been subjected to style-analysis. Salin, for example, in *Die altgermanische Tierornamentik* discussed the large brooch from Kakunmäki,⁴ characterizing its ornament as completely

¹ A. Erä-Esko, *Germanic Animal Art of Salin's Style I in Finland* (Finska fornminnesföreningens tidskrift, LXIII, Helsingfors, 1965).

² W. Holmqvist et al., *Excavations at Helgö*, IV, *The Workshop* (Stockholm, 1972).

³ W. Holmqvist et al., *Excavations at Helgö*, III, *Report for 1960-64* (Stockholm, 1970).

⁴ B. Salin, *Die altgermanische Tierornamentik* (2 ed., Stockholm, 1935), 234.

degenerate and disintegrated. Later scholars have endorsed this opinion, but Erä-Esko has demonstrated, by an exemplary analysis of the ornament, that, far from representing a process of degeneration, the ornament of this brooch displays certain motifs deliberately organized to follow a logical pattern.

One of the difficulties we face in understanding this style lies in the manner in which the ornamented areas of the objects are divided by raised ridges into a number of comparatively small panels. These divisions presumably result from the casting technique, in which a multiple piece-mould of clay was used. One of the chief problems was to prevent the mould fracturing or cracking by expansion when the hot metal was poured in. An examination of brooches of the migration period shows frequent traces of fractures which were caused at the time of casting. Such fractures were most frequent when high-temperature metal alloys were used. The expansion causing such fractures was more noticeable in larger flat panels than in smaller ones. Brooches executed in East Scandinavian Style I seem chiefly to have been made of high-tempered bronze; similarly, the so-called silver buttons (like the one from Täby, pp. 37, 39) consist chiefly of copper. Fracture was prevented in different ways at different periods: for example, by alloying the bronze with zinc or another metal with a lower melting-point. On the back of some Scandinavian brooches of the late iron age the imprint of cloth may be seen, because a piece of cloth was placed on the upper mould in order to make as tight a fit as possible with the lower mould; thus considerably thinner objects could be produced with less stress on the mould.⁵ Bronze objects of the late iron age are, indeed, characterized by thin casting and large ornamental panels. The function of the many ridges bordering the panels in East Scandinavian Style I was probably to canalize and distribute the heat over a greater area. The Helgö moulds show that the ridges could be used as joints in the piece-mould, but this does not mean that every panel was cast from a separate part of the piece-mould. The division into panels was therefore, perhaps, originally introduced for technical reasons. The resultant small fields are characteristic of Salin's Style I generally, but are most dominant in the East Scandinavian Style.

Another feature of East Scandinavian Style I, the liability of the object to heavy corrosion, also has a technical explanation. We have seen that the objects are commonly made of copper alloy. This often had a gilt or white metal coating. This surface coating, however, was never very strong and corrosion often covered it with a thick shapeless crust of copper carbonate from the underlying copper. The comparatively short ridges characteristic of the chip-carved ornament of East Scandinavian Style I are easily damaged and become difficult to interpret when the crust of corrosion is removed. The coating of gold or white metal must have been an important feature, which presumably helped to clarify the ornamental details; with corrosion, however, such clarity is now lost. In any study of the ornament, one must, therefore, consider both the structure of the design and the

⁵ The function of the cloth was to reduce the space in the mould and make the resultant cast very thin. Cf. I. Zachrisson, 'De ovale spännbucklornas tillverkningsätt', *Tor*, 1960, 210 f., and B. Arrhenius, 'Gjutformar' in B. Ambrosiani, B. Arrhenius *et al.*, 'Birka, Svarta jordens hamnområde, arkeologisk undersökning 1970-71', *Riksantikvarieämbetet Rapport C* (Stockholm, 1973), 102 f. In this I have examined the differences in thicknesses of casts of the migration and Viking ages.

physical condition of the object. Salin,⁶ in discussing one Anglo-Saxon brooch decorated in Style I, pointed out that the draughtsman had made an inaccurate drawing of the ornament because he did not understand it. Similarly Egil Bakka said that he worked for three months on the brooch from Chessel Down before he understood the ornament well enough to be able to draw it.⁷

TABLE I
MODIFIED VERSION OF ERÄ-ESKO'S SYSTEM OF CLASSIFYING
FEATURES OF STYLE I ORNAMENT

a. EYE	
b. MOUTH (BEAK)	1. lips (jaws) 2. tongue & teeth
c. NOSE (SNOUT, MUZZLE)	1. nasal ridge/nose plate 2. nose-piece of helmet
d. SKULL	1. eyebrow 2. forehead 3. head crown (& ear, crest, etc.) 4. hair
e. CHEEK	1. portion under eye (cheek-bone) 2. cheek-muscle 3. nostril (& moustache, whiskers) 4. jawbone (& beard)
f. NECK	1. throat 2. nape of neck
g. BODY	1. back 2. belly 3. front (of horse) 4. chest
h. FORELEG	1. hand (paw, hoof, cloven hoof) 2. wrist 3. forearm 4. elbow 5. upper arm 6. shoulder
i. HINDLEG	1. foot (paw, hoof, cloven hoof) 2. ankle 3. shank 4. knee 5. thigh 6. hip
x. TAIL	

For all these reasons it would seem that the interpretation of ornament on an East Scandinavian object is even more difficult than on other objects of the same style. Erä-Esko's efforts to find an acceptable solution to the problem of the style-analysis of this material is, therefore, of the greatest scientific significance. His method is based on the publication of enlarged photographs of the ornamental details of a brooch, which are collated with schematic drawings of the same details in which the parts of the body are identified by letters and the different subdivisions of these parts by numbers (TABLE I). By photographing only small areas the confusing effects of the shadows from the ridges and from the relief of the chip-carving are avoided. One might indeed wish that Erä-Esko had gone further and presented more frequently a more complete drawing of his interpretation of a

⁶ *Op. cit.* in note 4, 323.

⁷ E. Bakka, 'On the beginning of Salin's Style I in England', *Universitetet i Bergen Årbok, Historisk-antikvarisk Rekke*, III (1958), 18.

motif. His reticence, however, is understandable in that it is impossible to represent in a line-drawing the plastic quality of East Scandinavian Style I ornament. (The drawings illustrating the present paper are also subject to the reservations implicit in this remark.)

It is surprising, therefore, that Erä-Esko's important work on the technical presentation and analysis of East Scandinavian Style I has not been used in the publication of the Helgö moulds, especially as the interpretation of the ornament of the finished brooches may reasonably be presumed to be even more difficult when we are concerned with moulds, where the ornament appears in negative form. Helgö volume IV contains a *Catalogue raisonnée* of what is called the typological elements of the moulds (i.e. the typological elements of the objects produced from the moulds) while 'extensive investigations concerning raw materials and technical procedure' will appear in the next volume of the series.⁸ This is rather surprising in that it seems to me necessary to understand the technical function of the moulds in order to distinguish an element of ornament from a technical element. This is best demonstrated by a detailed discussion of two mould-fragments from Helgö. The first is the fragment (R 371) of a mould for a square-headed brooch, designated by Agneta Lundström⁹ as a type-form of her variant III which she describes as follows:

'Variant III

Arm termination (1) animal head en face and outside this a scharnier-like profiled moulding (variations in the form of the scharnier-like moulding). *Decoration of side field* (2) animal ornament principally as R 371. *Framework* (3) moulding with right angled sections. *Marginal zone* (4) animal ornament principally as R 371. *Transitional zone bow/footplate* (5) downward-biting animal head principally as R 371. *Foot* (7) animal head en face and outside this a scharnier-like profiled moulding. *Bow* (8) out-curved edge with blunted profile, *decoration of side field* animal ornament principally as R 371.'

This description is followed by a table listing all the fragments belonging to variant III together with their measurements and details, using the numbers placed in parenthesis in the description, and distinguishing it as a right-hand or left-hand piece. Lundström refers to the side of the mould without allowing for the fact that in the cast object the sides are reversed (a left-hand mould will produce the right-hand half of a brooch). This factor becomes important in the interpretation of her drawings of the moulds, where the ornament is represented as an unreversed positive pattern (i.e. a pattern which would occur after casting, save that the need to reverse it from right to left or *vice versa* has been ignored; cf. PL. VII, a-d).

The easiest method of obtaining casts from these moulds for study purposes is by using plasticine. An inherent difficulty of this technique is that it is not possible to press the plasticine evenly in to the mould, so that certain ornamental details tend to become more prominent than others. If some of the ornament is faint this may be an advantage, but a plasticine cast should, nevertheless, always

⁸ *Op. cit.* in note 2, 20, note 1.

⁹ *Op. cit.* in note 2, 193.

be used alongside a cast produced by a material which fills the mould in a more mechanical fashion. Various silica compounds can be used, but have a tendency to seep into the porous surface of the mould and stick in small cracks so that the cast is difficult to remove and removal may even damage the mould. In studying the moulds from Birka, I have used type-metal (Wood's alloy) which has a melting-point of between 60° and 70 °C. This alloy is particularly suitable as it is a material which does not adhere to the mould and which, in contrast to plasticine, will shrink on setting in the same way as the metal for which the mould was originally intended; at the same time the mould is not subjected to excessive heat. If we compare a plasticine cast with one made from type-metal, it becomes clear that ridges (which in plasticine appear flat and broad) are higher and narrower in metal and thus more like the moulding known from contemporary bronze objects. The published drawings of the Helgö material suggest that they were mainly prepared from plasticine casts. The chief drawback of the metal cast is that the very height of the ridges causes the same shadow effects in photographs which have been noted in dealing with the original objects of East Scandinavian Style I. Erä-Esko's technique of using enlarged photographs of small areas only is therefore to be recommended.¹⁰

To the far right of the cast of R 371 (PL. VII, *b*) is the swelling which served as a key when the mould was closed. To the left of this, and clearly separated from it, is the lower half of a square-headed brooch. Both the arm and the foot of the brooch clearly terminate in animal masks which, according to Lundström, end in *Scharnier*-like beaded extensions. The cast, however, reveals that no such extension occurs on the foot of the brooch, the thickened portion below the eye being clearly the prominent cheek characteristic of this kind of animal (Erä-Esko¹¹ has analysed this type of animal head in his study of the brooch from Kakunmäki, FIG. 12, A and D). The heads on the arm and the foot of the brooch are thus of the same type, although their proportions differ, but there is no evidence that they terminate similarly. The Kakunmäki brooch demonstrates that this type of head may finish either with an extension like that seen on the arm of R 371 or simply with a squared-off end. The straight line along the foot of the cast of R 371 suggests that the latter type of terminal was used. A further argument for a square termination of the foot is a tendency for the Helgö brooches to be cast in one piece with the casting-gate at the foot. A moulded terminal could easily be damaged when the jet was removed. This technique differs from that used, for instance, on some Anglo-Saxon brooches, which were cast in two or three pieces and later soldered and riveted together (a technique also used on Danish and some Norwegian brooches as well as on the Kakunmäki brooch).¹²

The fragmentary character of the material from Helgö is perhaps the result of the jewellers' efforts to cast their brooches in one piece, a technique which obviously put great stress on the mould; indeed, no complete piece-mould for a square-headed brooch is preserved. It is possible that the very large number of

¹⁰ By using indirect light and a black background distracting shadows can be eliminated.

¹¹ *Op. cit.* in note 1, 33.

¹² *Ibid.*, and Bakka, *op. cit.* in note 7, 32.

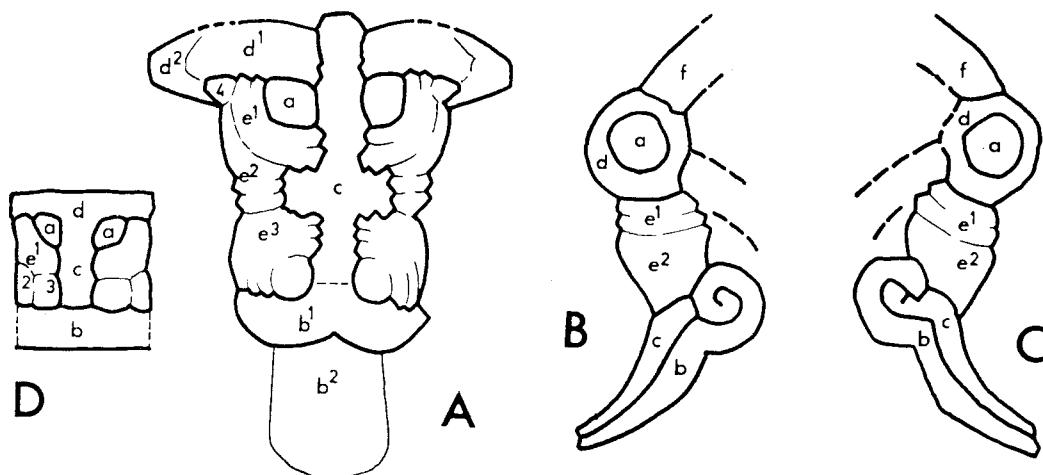


FIG. 12

ANALYSIS OF ORNAMENT ON BROOCH FROM KAKUNMÄKI, FINLAND (pp. 30, 32)

After Eriü-Esko

fragments of piece-moulds found at Helgö shows that many castings had not been completed when the mould cracked; the piece-moulds from Helgö represent at least 211 different square-headed brooches and only a quarter of this number of brooches have been found in Sweden. On the other hand, the moulds for clasp-buttons found at Helgö together represent 169 buttons. Kristina Lamm¹³ compares this number with the known finds of 200 metal buttons, e.g. a ratio between the moulds and the finds of 4:5, whereas the ratio for relief-brooches is 4:1. Furthermore, in her catalogue of dress-pins, Julia Waller^{13a} notes that moulds of group-I pins with triangular heads and protuberances, which dominate the material, being 85 per cent of all dress-pin moulds, are of a more fragile type than other dress-pin moulds. This explanation would also help to explain the large number of fragmented moulds of every variant type of brooch. While buttons are commonly duplicated, brooches of similar design rarely occur, save when they were worn in pairs. It is significant that even when brooches occur in pairs (a rare phenomenon in East Scandinavia) there are small differences like those described by Lundström within her variants. Indeed there are even differences between the right-hand and the left-hand side of the same brooch, e.g. on the brooch from Gillberga (PL. X, a), where the trunk of the right-hand crouching animal figure, described below, is somewhat broader than that of the left-hand one.

But it is important to note that these small irregularities only effect the proportions of the elements and never the design of the animal. Animals are

¹³ *Op. cit.* in note 2, 98. It is likely that the development of the median ridge on the feet of the brooches, a very common feature in Helgö as well as elsewhere in Scandinavia and in Anglo-Saxon England (*op. cit.* in note 2, 258), also came about in order to simplify the casting technique, so that large fragile fields were avoided.

^{13a} *Op. cit.* in note 2, 44 and 57 f.

apparently systematically built up on a carefully constructed pattern, as can be seen in mould R 371, where the animal head below the bow of the brooch is described by Lundström as a 'downward-biting animal head'. Her drawing shows plain sub-triangular jaws, one of which terminates in a spiral, and a roundel within a semicircular moulding (PL. VII, *c*). Lundström does not offer any analysis of this ornament. Using Erä-Esko's method let us try to analyse this head, using the cast (PL. VII, *b* and *e*) rather than Lundström's rather inaccurate drawing. From the cast it can be seen that the sub-triangular element is not in the same plane but slopes quite steeply towards the edge. Thus it seems that the two sides of the triangle enclose an area that was not necessarily completely filled or that held metal which was so thin that it could easily be pierced. I consider that the drawing of the similar mould R 382 (PL. VII, *d*) gives a truer picture of the real design. The roundel is seen to terminate the sides of the triangle and is not enclosed by the semicircle but lies below it. The cast also reveals two further details: a small extension from the right-hand side of the roundel and a small raised dot within the semicircle. This profiled head is closely related to the mask which terminates the arm and foot (PL. VII, *f* and *g*). The Kakunmäki brooch provides a parallel (FIG. 12, B and C), showing that the sides of the triangle represent gaping jaws and that the roundel with its extension is the cheek and the small raised dot within the semicircle is an eye. A similar head is found at Helgö in several of Lundström's variants. It is thus an important typological feature and should perhaps have been given its own descriptive name in place of the simple term 'downward-biting animal', which is used to describe animal heads of many different types, e.g. R 580, PL. VIII. Thus it is clear that both animal ornament and the borders must be analysed before drawings are made, for it is impossible (however competent the draughtsman) to provide a correct drawing if the meaning of the ornament is not understood.

Holmqvist in general terms characterizes the ornament of the Helgö moulds thus:¹⁴

'In the material which has so far emerged, the animal ornament shows a great range of variations, from more or less complete animal figures seen in profile, to simple ribbon loops provided with a zoomorphic detail of some kind. The majority of the moulds under consideration exhibit a very advanced dissolution of the animal figures.'

I agree with the first part of this sentence, but I feel that a more careful analysis of the ornament shows that there is no dissolution of the animal figures and that their design follows a firm pattern which forms the basis of East Scandinavian Style I. For the same reason in her grouping of the typological elements¹⁵ Lundström has, by using a one-sided characterization of the animal ornament, lost sight of one of the most important and sensitive typological elements found

¹⁴ *Op. cit.* in note 2, 261.

¹⁵ *Op. cit.* in note 2, 155 ff. From this it follows that Lundström's criticism of Malmer's method in the construction of typological series is irrelevant. She has not distinguished typological elements capable of being objectively described, nor has she investigated whether the elements she presents are mutually independent; cf. M. P. Malmer, *Metodproblem inom järnålderns konsthistoria* (Lund, 1963), 170 ff.

on these brooches, an element which is of prime importance in the grouping of other decorative motifs and which also has some influence on the form of the object. I will try to demonstrate this by means of another Helgö mould of Lundström's variant XVI,¹⁶ which is described as follows:

'Variant XVI

Arm termination (1) transversely-striated triangular field with the base diverted outwards (framework except of one base side). *Framework* (3) moulding with right angled section. *Transitional zone bow/footplate* (5) downward-biting animal head principally as R 579.'

As an example of this variant I have made a cast of R 580 (PL. VIII, *b*). On this cast what was recognized by Lundström as the arm of a brooch is a swelling at the top right which in the mould is a cavity (PL. VIII, *a*) and which presumably had a counterpart in the form of a tenon in the lower mould. On the drawing in the Helgö publication (PL. VIII, *c*) the striated triangular field has no border at one edge; the mould is broken here, but the beginning of the border can be seen. A similar border also occurs on two other mould-fragments of this variant (*cf.* R 581: PL. VIII, *d*). Next to the swelling and separated from it by a depression (a ridge in the mould) is the impression of what Lundström calls 'a downward-biting animal head'. If we measure the head represented on the drawing (PL. VIII, *c*), it is so broad that its arched contour would seem to include the depression which separates the swelling from the impression (PL. VIII, *b*). A thin raised contour line runs inside this indentation from the innermost part of the curve to terminate as a thick extension at a point where the arm curves outwards. It is further noticeable that the internal triangular field of the arm is plain—a surprising feature, since Style-I objects are usually ornamented on every surface. This plain area is, therefore, presumably part of a larger motif. The striated triangular field has a border on its outer edge and is much larger than anything that occurs in the comparative material referred to.

I doubt, therefore, whether this is in fact the arm of a brooch. The protruding tenon of the mould is placed in a position which hints that this is either the foot of a brooch or part of an equal-armed brooch. Holmqvist considered this mould to be almost identical with that used for a brooch from Bjällsta, Indal, Medelpad.¹⁷ PL. IX, *a*, is a montage of a photograph of the Bjällsta brooch with a photograph of this mould, showing that both the size and angle of the arm are different. Neither the Bjällsta object nor other brooches of this type have arms with a border to the triangular field. Such borders do, however, occur on the triangular feet of these brooches. Even more noticeably there is no trace of the bow of a brooch on the mould. If this were the mould of an arm there should be traces of the bow at the outer ridge of the so-called animal head. Instead of having a depression for the bow the mould is seen to be convex at this point. Mould R 525 from Helgö¹⁸ shows clearly such a transitional zone between foot and bow. Triangular fields used

¹⁶ *Op. cit.* in note 2, 218.

¹⁷ *Ibid.*, 233.

¹⁸ *Ibid.*, pl. 12.

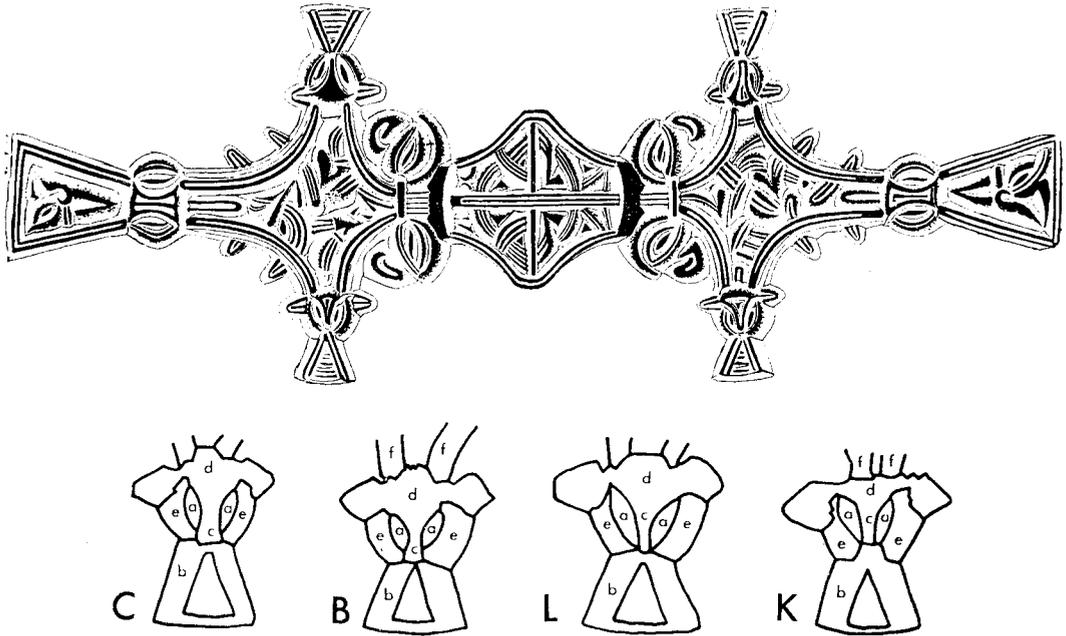


FIG. 13

EQUAL-ARMED BROOCH FROM GULLDYNT, FINLAND
with detailed analyses of some of its ornament (p. 34). Sc. $\frac{1}{2}$

After Erä-Esko

as terminals are common in Style I. Erä-Esko has described this feature and demonstrated that it terminates an animal mask. He explains the triangular field as a representation of the 'tongue of fire'.¹⁹ Accepting this to be so on this mould it is clear that the plain triangular field could very well be the forehead of the creature. The thick triangular extension thus forms a part of the cheek and has plenty of parallels, particularly in Anglo-Saxon Style I. Assuming that this detail and the raised contour bordering the eye originally had a counterpart on the other side (as on mould R 578 from Helgö),²⁰ the motif is seen as the full-faced mask of an animal head (best seen turned through 90° as in PL. VIII, e). The equal-armed brooch from Gullydynt (FIG. 13, with heads, C, B, L and K) has similar animal heads. The lower portion of the Bjällsta brooch (PL. IX, a) consists of a similar head, the extensions at the bow forming the eyes, the arms forming the protruding cheeks and the foot with the triangular terminal forming the mouth.

The long equal-armed brooches are well-represented at Helgö and have a particularly interesting distribution, occurring in Lombardic Italy, occasionally in Hungary (often assigned to Scandinavian workshops) and in central Sweden,

¹⁹ *Op. cit.* in note 1, 45; cf. also H. Vierck, 'Ein Relieffibelpaar aus Nordendorf'. *Bayerische Vorgeschichtsblätter*, xxxii (1967), 112, and K. Hauck, *Goldbrakleaten aus Sievern* (München, 1970), 340.

²⁰ *Op. cit.* in note 2, pl 12.

Norrland and Finland.²¹ The East Scandinavian examples reflect the lively international contacts which were the basis of the artistic activity expressed in East Scandinavian Style I. I cannot, however, agree with Holmqvist's²² assumption that several of the brooches (e.g. those from Gillberga in Närke and Szentes Nagyhegy in Hungary) were manufactured at Helgö. Let us examine the mould R 644 (PL. x, *b*) from Helgö which, according to Holmqvist, is identical with that of the Gillberga brooch (PL. x, *a* and *g*: cf. also the drawing PL. x, *d*, from the Helgö publication and the cast taken from the mould, PL. x, *c*, *e* and *f*). The similarities between the mould and the brooch are indeed close, but there are differences. The chip-carving has a more rounded profile in the mould, a feature which could be explained if it were worn, but the clarity and rich detail of the mould does not suggest this. The softer impression of the chip-carving is partly due to the ribbed portion at the rear of the animal being narrower in the mould than on the brooch, thus reducing the grooved effect. This trait is even clearer on the front quarters of the animal on the mould, where the grooved part is divided longitudinally and extra contour lines have been added. The front part of the body is reminiscent of the longitudinally-striped animals in a similar position at the outer end of the Gillberga brooch (PL. x, *a*). The double contour is represented in the drawing in the Helgö publication, but there is in my opinion a discrepancy between the drawing and the mould in that the line below the animal is straight and not (as the artist suggests) gently curved; the curve is clearly a break. The straight contour is very different from the similar feature on the Gillberga brooch, the curved contours of which are particularly characteristic of its style. I regard as quite fundamental the difference between the blunt and lifeless execution of the Helgö mould and the taut yet lively curvature of the Gillberga brooch. The stiffness of the Helgö brooch is similar to that on the Finnish brooch from Tytärsaari.²³ It seems probable that these differences result from the Helgö artist copying from metal prototypes. The large variety of brooches from different parts of Europe found at this site demonstrates that at Helgö the artists would have had an opportunity to copy many types. (Werner has pointed out that one mould from Helgö²⁴ represents a brooch of an east Prussian type.) The Gillberga brooch is not typical of East Scandinavian Style I. This atypicality is emphasized by such features as the sharp-angled chip-carving, the mixture of geometric and animal ornament, and the cruciform design centred on the glass inlay.²⁵

Another group of square-headed brooches represented by moulds from Helgö

²¹ N. Åberg, *Den historiska Relationen mellan Folkvandringstid och Vendeltid* (Stockholm, 1953), 61.

²² *Op. cit.* in note 2, 254.

²³ *Op. cit.* in note 1, 61, no. 35, pl. x. The differences mentioned here might well be studied with the aid of curves as demonstrated by Almgren, provided that chip-carving, as well as the surface pattern, is taken into account; cf. B. Almgren, *Bronsnicklar och Djuvornamentik* (Uppsala, 1955). This thesis was demonstrated by Almgren at the Helgö symposium at Hesselby in 1972.

²⁴ J. Werner, 'Zur Verbreitung frühgeschichtlicher Metallarbeiten (Werkstatt—Wanderhandwerk—Handel—Familienverbindung)', *Early Medieval Studies*, 1 (Stockholm, 1970), 78.

²⁵ It is true to say that the East Scandinavian material of large, equal-armed brooches with animal ornament dominates the available finds, but both the large, plain Lombardic brooches of this form and an interesting occurrence of small equal-armed brooches from east Germany (cf. B. Schmidt, *Die späte Völkerwanderungszeit in Mittel-deutschland* (Halle, 1961), pl. 41) suggest that large equal-armed brooches also occur in central Europe, where they became prototypes for simpler forms.

(PL. XI, *a*; Lundström's group L)³⁶ also shows the close contact with other cultural areas. Of this group I illustrate a cast (PL. XII, *a*), drawings from the Helgö publication (PL. XI, *b-d*), and a drawing of one of the ornaments on the right-hand side of the cast (PL. XII, *c*). The ornament across the long side is complicated and, while I do not yet fully understand it, I am nevertheless doubtful about the interpretation presented in the drawing in the Helgö publication. The quadruped on the short side (PL. XII, *b*), particularly, does not continue with a hanging curved beak round the corner to the long side. On the contrary, it seems as though the square finish of the animal's head is a characteristic feature. The animal is drawn in considerable detail with a sub-triangular, striated body. Below it is a characteristic figure with a Taplow-type helmet, arched body, bent leg and well marked foot; under the chin is a feature which presumably represents a hand and thumb. This is a well-known motif of Style I and has its closest parallel on the brooch from Gummersmark (FIG. 14).²⁷ The motif, which has been discussed by Haseloff,²⁸ consists of a man represented in a dancing and twisted posture. He is often seen



FIG. 14
DETAIL OF ORNAMENT ON
BROOCH FROM GUMMERSMARK,
DENMARK (pp. 36 f., 39)

together with an animal. On the B-bracteate from Söderby in Uppland (PL. XIII, *a*) the twisted movement of the man is further emphasized by the hand holding the feet. This latter detail is encountered several times in the ornament described by Erä-Esko, as, for instance, on the button from Gullydnt (where the motif occurs together with a head of Söderby type).²⁹ Lamm correctly recognizes on the variant-III button-mould a leg with a 'bent-up foot sole'³⁰ together with a head of Söderby type. This motif, which, in its complete form, can be seen on the

²⁶ Lundström in *op. cit.* in note 2, 178, describes the dancing figure as 'animal ornament'.

²⁷ G. Haseloff, 'Goldbrakteaten—Goldblattkreuze', *Neue Ausgrabungen und Forschungen in Niedersachsen*, v (Hildesheim, 1970).

²⁸ *Ibid.*

²⁹ *Op. cit.* in note 1; the button from Gullydnt; see pl. xxiii, E 40. Erä Esko has not, however, interpreted the hand which grasps the leg correctly. The same motif is seen on the equal-armed brooch from Tytärsaari, pl. xxv, B, and in a reduced form on the buttons from Nukuttalahti and Kiiliä, pl. xi, 41-42.

³⁰ *Op. cit.* in note 2, 127.

Söderby bracteate, is a common motif in East Scandinavian Style I (e.g. PL. IX, *b*).³¹

As this figure has not been considered in earlier works on East Scandinavian Style I and as it seems to be an important anthropomorphic element of this style, I wish to discuss two finds of buttons with this motif, one from Västra Ovanby, Ekeby, Uppland (an old find in the Uppsala Museum),^{32a} the other consisting of the charred fragments of two buttons found, together with a rectangular pendant decorated with perforations set in a cruciform design, in a cremation-grave from Täby, Uppland.^{32b}

The button from Ekeby (PL. XIII, *c* and *d*; FIG. 15, *a-f*) is of bronze with traces of gilding. It is 4.3 cm. in diameter and the slightly conical side is divided into four panels; the top surface has an inlaid triangular garnet. In each of the four panels is a twisted human figure (PL. XIII, *d*; FIG. 15, *a* and *b*) related to that on the Helgö mould, R 196 (PL. XII, *b*), and the Gummersmark brooch (FIG. 14). Below the figure is a dragon-like animal, the outer contour of which is fragmented. The panels are divided by ribs formed of quadrupeds seen from above which have an almost human head towards the top surface (PL. XIII, *d*; FIG. 15, *c*). The ornament of the top (FIG. 15, *d*) represents a human figure rather like that on the Söderby bracteate, and consists mostly of a leg with a rounded calf and a tendril-shaped foot, clasped by the hand of an angled arm. The other arm bends to the cheek, and the mouth and the hand appear to be formed from the same motif. The extra hand at the foot of the dragon-like animal which snaps at the man's foot perhaps belongs to the man. On the Söderby bracteate, which may be the model for this pattern, the man holds the dragon with one hand. Issuing from the heads of the animals which form the ribs of the object is the 'tongue-of-fire'.

The two buttons from Täby (PL. XIV, *a-c*; FIGS. 16-17) have been damaged by fire and are much fragmented; they seem originally to have been made from silver with a large copper content.³³ They were presumably at one time identical but only one of the four side panels can now be reconstructed, although the side panels were presumably paired off. The panel has sloping sides and is surrounded by ribs in the form of animals as on the Ekeby button, but the heads are even more anthropomorphic with a broad nose, moustaches and a rounded chin (FIG. 16, *b*; FIG. 17) and the forelegs have a ring at the ankle. The side panel (FIG. 16, *a-b*) contains ribbon-like ornament carried out in a flat chip-carved technique, the ribbons having a double contour on one side. The motif represents the somer-

³¹ Cf. the above-mentioned Finnish examples, the brooch from Bjällsta (PL. IX, *b*) and its counterparts from Attmar, Medelpad, and Hade, Gästrikland, and the equal-armed brooch from Sissebo, Dalarna; cf. also *op. cit.* in note 21, figs. 27, 29 and 91.

^{32a} Västra Ovanby, Ekeby, Uppland (Uppsala Museum, no. 3174). It was handed in together with a Viking-age arm-ring, cf. *op. cit.* in note 21, 51, note 54. I am grateful to Mr. Bo Gräslund, who allowed me to study this button in Stockholm.

^{32b} The buttons (Statens Historiska Museum, Stockholm, inv. no. 215915:27) were found in grave 27 in cemetery 131 at Täby, excavated by Dr. Alf Nordström. The small pendant is paralleled in finds from Uppland, Gotland and Anglo-Saxon England and belongs to the late migration or early Vendel period; cf. B. Arrhenius, 'En vendeltida smyckeuppsättning', *Fornvännen*, 1960, 78.

³³ Analysis by means of an atomic absorption spectrograph, carried out by Mr. Leif Tapper, showed that one of the Täby buttons contained 77 per cent. copper, 11 per cent. silver and 4.5 per cent. zinc, the last serving as an alloying constituent. (The Ekeby button contained 95 per cent. copper together with 2 per cent. silver and 1 per cent. lead as alloys.)

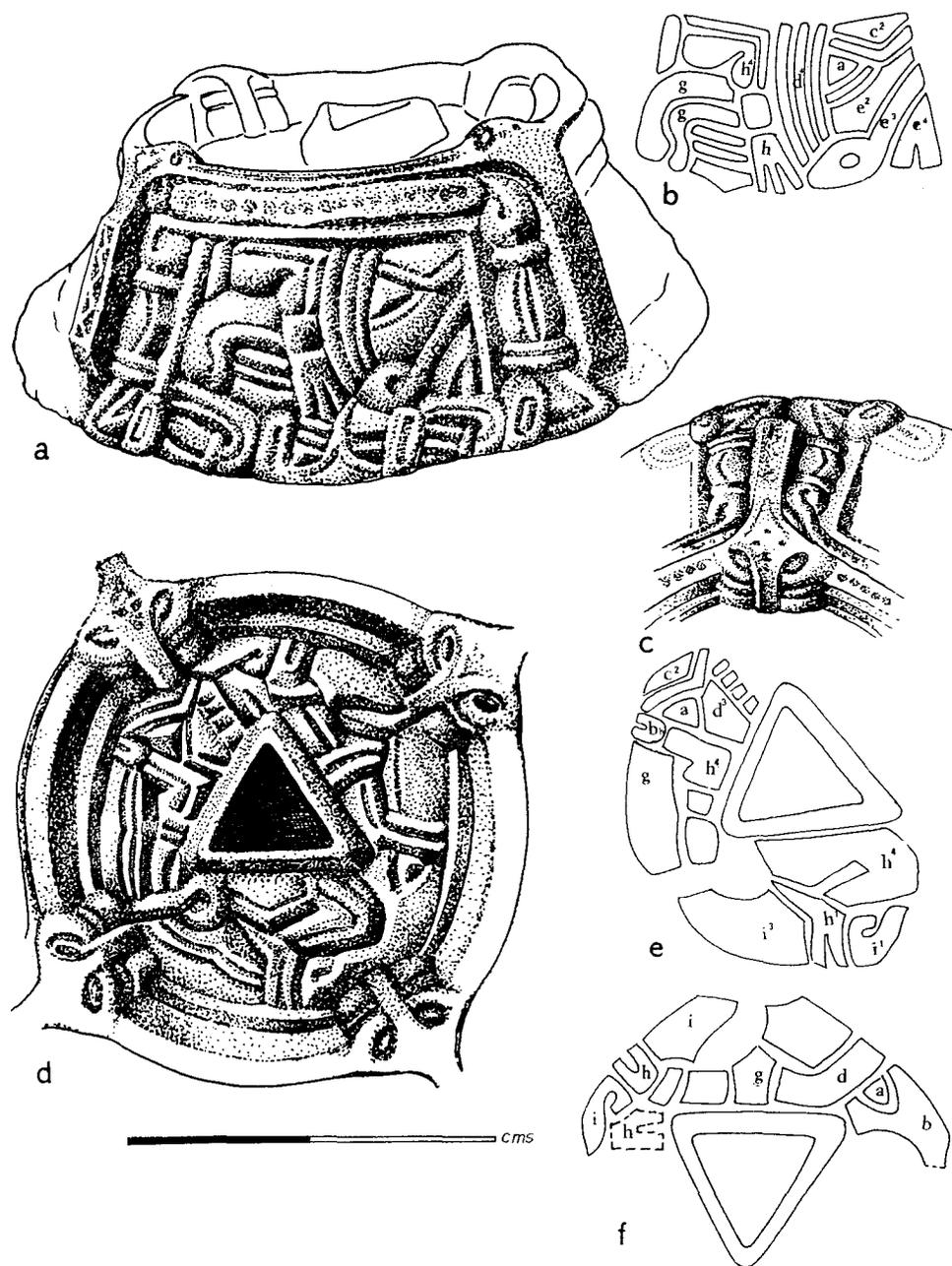


FIG. 15
 ORNAMENT ON BUTTON FROM EKEBY, UPPLAND, SWEDEN
 and detailed interpretations of it, after Erä-Esko's system (pp. 37, 39). Sc. 5:2

saulting man, his hand holding a spiral foot. The face is, however, more reminiscent of the gold cross from Cividale published by Haseloff (FIG. 18),³⁴ than of the helmeted Söderby man. The shape of the nose may indicate that he wears a helmet. The hair is long and merges with the beard, interrupted only by the transverse moustache. It is possible that the configuration at the bottom of the panel is reminiscent of the dragon on the Ekeby button, but this is not clear. The top panel of the button (PL. XIV, *c*; FIG. 17) is much damaged, but originally carried an inlaid circular garnet surrounded by an ornament which was presumably similar to that at Ekeby, although only one bird-like animal head is preserved.

Buttons of this shape and large size are not found outside East Scandinavia. The absence of any trace of a pin indicates that they were, despite their size, used as clasps. Several mould-fragments from Helgö were used for making such buttons, some with animal-shaped ribs; they are not, however, as large as those from Ekeby and Täby. It is important for chronological purposes to note that the reconstructed Täby button is decorated with realistic animal figures as well as with animal ornament, which, as Holmqvist aptly puts it, has been transformed into an animal interlace.³⁵ It is also important to notice the presence on the Ekeby button of the dancer grasping his foot as well as of the more twisted man of the type on FIG. 14.³⁶ Obviously both these figures belong to the same group (as, we may assume, does the animal-man which forms the ribs of the buttons).

On the Helgö brooch (PL. XII, *a*) it is possible that the animal with the square head at the border of the short sides represents this animal-man. I would tentatively suggest, despite the obvious damage, that on the upper border of this brooch the dragon is represented with its open beak towards the animal-man. Some of these figures are represented on a button of bronze found in the workshop site at Helgö.³⁷ On this button (PL. XIV, *d*), which is closely paralleled by an example from Nicktuna, not far from Västerås (PL. XIV, *e-f*),³⁸ is the helmeted man with his rounded calf and clearly drawn foot as well as the hand with the thumb. The man is similar to the man on the Helgö brooch (PL. XII, *a*), but on the button he meets the dragon face to face. It is possible that the curved ribbon-like chain on the Nicktuna button, which links both figures together, is the 'tongue-of-fire'.

Perhaps the buttons from Ekeby and Täby were manufactured at Helgö. The Täby buttons bear a number of minor features also seen in the material from Helgö. The character of the chip-carving, for example, which is fairly flat and without a sharp ridge and has a thin contour along the under side, brings the two groups into relation, whilst there is also a triangular panel with a swastika-pattern in niello on the animal rib of this button, which is one of the features which Holmqvist considers typical of the Helgö workshop.³⁹ Täby is not more than 10 km. from Stockholm and it is therefore not improbable that it belonged to the area where products from Helgö were sold, especially as a brooch from another ceme-

³⁴ *Op. cit.* in note 27.

³⁵ W. Holmqvist, 'Eine Studie zur kontinentalen Tierornamentik', *Wallraf-Richartz-Jahrbuch*, xv (1953), 16.

³⁶ Both types of figure never occur together on the same bracteate.

³⁷ Lamm in *op. cit.* in note 2, 101.

³⁸ *Ibid.*

³⁹ *Op. cit.* in note 2, 261.

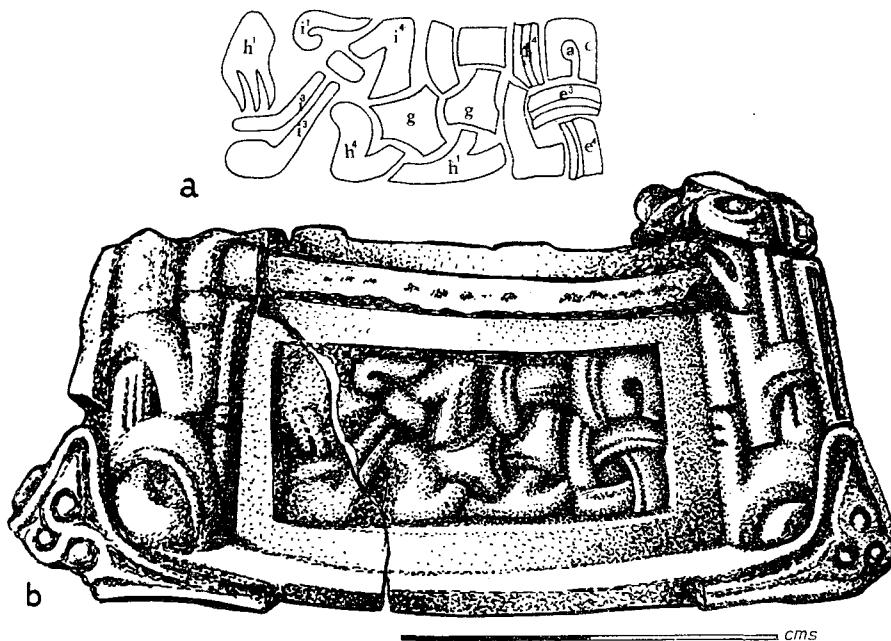


FIG. 16

FRAGMENTARY BUTTON FROM TÄBY, UPPLAND, SWEDEN

and detailed interpretation of its ornament, after Erä-Esko's system (pp. 37, 39). Sc. 5:2

tery in the same parish is also closely related to the products of the Helgö workshop.⁴⁰ It may, therefore, be possible to distinguish a local area of distribution of products linked by a number of stylistic and technical elements which are only represented, as far as we know, in moulds found at Helgö. But it is to be noted that Helgö is so far the only settlement-site in Sweden which has been excavated over an area sufficiently large to reveal the workshops, which lie some distance from the dwelling-houses. Moulds of buttons from Västerås and of relief brooches from Öland⁴¹ have been found accidentally on settlement-sites.

Holmqvist's map showing the different stylistic elements found in the Helgö workshops⁴² covers the entire north Germanic area. It does not, in my opinion, show a vast market for Helgö products. It demonstrates, rather, a characteristic quality of this workshop, namely the ability to receive, copy and develop influences from many different areas. But this quality is not only characteristic of the jewellers at Helgö: it is particularly characteristic of East Scandinavian Style I. Erä-Esko⁴³ has, indeed, considered the possibility that the craftsmen who created

⁴⁰ *Ibid.*, 236, note 11.

⁴¹ For the moulds of buttons from Västerås see *ibid.*, 25. The moulds from Öland, which are characterized by animal and spiral ornament of unusually high quality, were found in the foundations of a house at Bo, Bredsåtra; cf. U. E. Hagberg, *The Archaeology of Skedemosse*, II (Uppsala, 1967), 99.

⁴² *Op. cit.* in note 2, 234, 240 and 246.

⁴³ *Op. cit.* in note 1, 112.

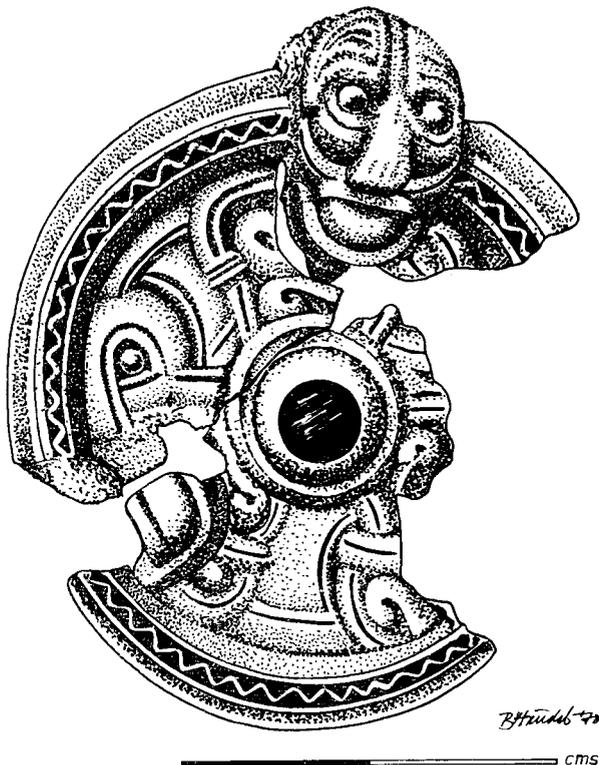


FIG. 17

FRAGMENTARY BUTTON FROM TÄBY, UPPLAND, SWEDEN (pp. 37, 39). Sc. 5:2

this art were immigrant Anglo-Saxon monks. To illustrate the international side of the East Scandinavian Style I, I have chosen among many examples the well-known find of bracteates from Söderby.⁴⁴ The B-bracteates (PL. XIII, *a*) are paralleled in the Norwegian find from Sletner,⁴⁵ and Haseloff⁴⁶ relates the motif to that from Cividale (FIG. 18). Together with the B-bracteates, the Söderby find also included several bracteates with a *crux gemmata* motif directly attributable to Byzantine art, with the difference that at Söderby the cross is surrounded by animal masks.⁴⁷ The stamp used for the four B-bracteates of the Söderby find was presumably the model for a bracteate from Gotland and also for the biggest bracteate found in the Mälars valley, the Ulvsunda, Bromma, bracteate (PL. XIII, *b*), on which the stamp is combined with a broad border with a stamped design characteristic of the Vendel period.⁴⁸ Åberg ascribes the Ulvsunda bracteate to the Vendel period and it is therefore likely that the Söderby find belongs to a tran-

⁴⁴ M. Mackeprang, *De Nordiska Guldbrakteater* (1952), no. 299.

⁴⁵ *Ibid.*, no. 125.

⁴⁶ *Op. cit.* in note 27.

⁴⁷ Åberg, *op. cit.* in note 21, 121, believes that these bracteates copy Kentish pendants.

⁴⁸ For Ulvsunda see *ibid.* For the bracteate found at Laubackar in Gotland see Hauck, *op. cit.* in note 19, 221. Hauck interprets this design as an East Scandinavian version of the *Urvater*.

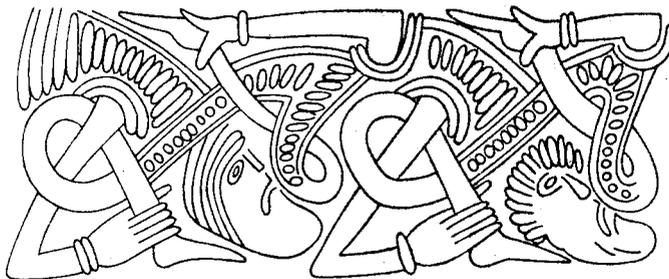


FIG. 18

ORNAMENT ON GOLD CROSS FROM S. STEFANO IN PERTICA,
CIVIDALE, UDINE, ITALY (pp. 39, 41). Sc. $\frac{2}{3}$

After Haseloff, op. cit. in note 27

sitional stage between the migration and Vendel periods. This dating suggests that the East Scandinavian Style I belongs to the time immediately preceding the rich boat-graves from Vendel and Valsgårde. The finds from these sites demonstrate that in this period in Uppland wealthy chieftains' farms lay close to each other where rich imports, as well as flourishing local crafts, were available. Many have suggested⁴⁹ that the finds from Vendel and Valsgårde can be interpreted as the material from trading-stations and in my opinion it is likely that the same may be true of objects in the East Scandinavian Style I. Such objects could also be the local products of chieftains' houses with their close international contacts, in other words exactly the same sort of trading-station as that recognized at Helgö.

The extensive finds from Helgö, which are yearly increased by the untiring labour of Professor Holmqvist and his staff, can, with the help of material (still regrettably little-studied) from cremations in this region of Sweden, help us to build up a picture of a period which may represent the initial stages of the cultural peak reached by central Sweden in the Vendel period. By his penetrating study Erä-Esko has developed a method which makes it possible for us to gain a more complete understanding of this material.

ACKNOWLEDGEMENTS

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NOTE

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⁴⁹ Cf. S. Lindqvist, 'Åker och Tuna', *Fornvännen*, 1918, 1-30, and M. Stenberger, 'Tuna i Badelunda. A grave in central Sweden with Roman vessels', *Acta Archaeologica*, xxxvii (1956), 18 f.