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ÅRBOG FOR JYSK ARKÆOLOGISK SELSKAB

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With Summaries in English

UNIVERSITETSFORLAGET I AARHUS
1955

Forside:
Fader G. Mary-Rousseliere på Alarnerk-bopladsen

Redaktion:
P. V. GLOB

Printed in Denmark
by
Aarhuus Stiftsbogtrykkerie A/S

Clicheer:
Hammerschmidt – Århus

INDHOLD

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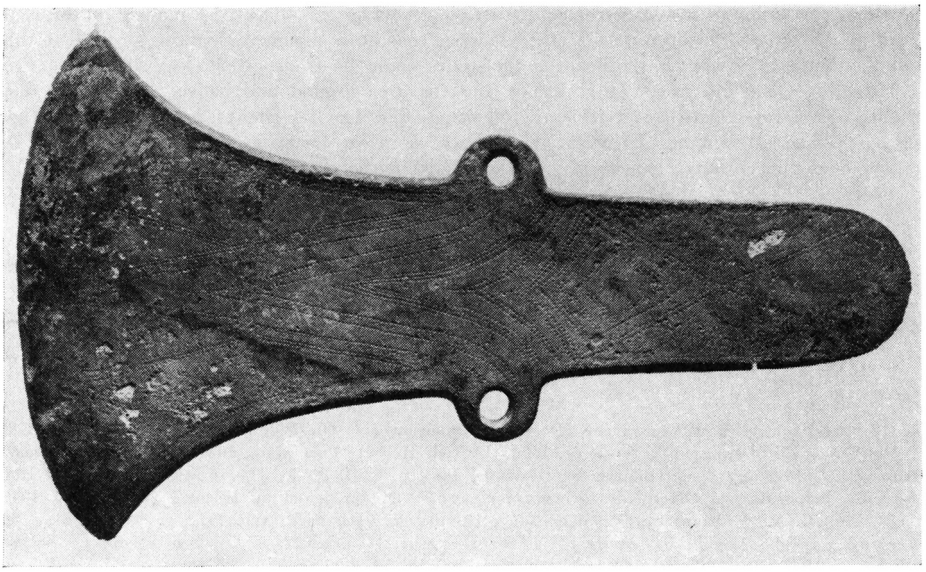

Fig. 1. Ornamenteret bronzeøkse fra Ulstrup. Ca. 2/5.
Ornamented bronze axe from Ulstrup. Approx. 2 : 5.

IRSKE BRONZEØKSER FRA ULSTRUP

Af JAY BUTLER

Yngre stenalders bønder i Danmark har udviklet en rig og selvforsynende agerbrugsøkonomi. De udnyttede med stor dygtighed de stedlige flintforekomster til både våben og redskaber. Så tidligt som i jættestuetid begyndte imidlertid en import af kobberøkser, dolke og smykker fra Centraleuropa, blanke og strålende sager, der var de hjemlige overlegne, og som de ikke selv kunne fremstille, da de hverken havde råmateriale eller kendskab til metallurgi. I dolktid var importen af metalgenstande blevet velorganiseret og regelmæssig og kom nu ikke alene fra Centraleuropa, men blev også fragtet over Nordsøen. Dolkøkser af irsk form og økser, ornamenteret i den særegne stil, som irske smede benyttede, er fundet i betydeligt antal i Danmark. Det formodes endog, at irske bronzesmede er kommet til Danmark, hvor de har fabrikeret og solgt deres varer og på den måde beredt vejen for en virkelig nordisk bronzealder. De har ikke været bange for at lære deres kunst fra sig. De to irske økser, som omtales nedenfor, er eksempler på den tidlige bronzealders oversøiske handel, der må være begyndt allerede før 1500 f. Kr.

I 1930erne og 1950 blev der fundet to meget store, ornamenterede bronzeøkser på samme mark ved Ulstrup nær Gudenåen i Nordøstjylland. Den ene er typisk for

de ornamenterede bronzeøkser, som i tidlig bronzealder fra Irland eksporteredes til England, Danmark, Sydsverige og Tyskland (fig. 2). Den anden er også af irsk form og stil; men dens ornamentik er usædvanlig fin (fig. 1). Den er utvivlsomt den fineste af sin type, der nogensinde er fundet, og har yderligere et højst usædvanligt træk, de flade øskener på hver smalside.

Findestedet, Ulstrup i Vellev s., Houlbjerg h., ligger nær sydbredden af Gudenåen, ca. 30 km fra dens udløb i Randers fjord. Gudenåen er Danmarks længste å og har i oldtiden været en hovedvej til halvøens indre, som eksempelvis de store tidlige bronzealderfund fra Gallemose og Virring viser. Det førstnævnte indeholder en ornamenteret irsk økse sammen med centraleuropæiske bronzer og hjemlige økser, der i form og ornamentik efterligner de irske. Virring-depotet omfatter en økse, der viser engelsk indflydelse gennem dens skråt riflede smalsider. Disse fund er vigtige ved bedømmelsen af Ulstrup-økserne.

Øksen fig. 1 er af betydelig størrelse, 27,5 cm lang og med en ægbredde på 16 cm. Dens tykkelse overstiger ikke 1 cm. Fra den afrundede nakkeende øges bladets bredde jævnt indtil øskenerne, hvorefter det svajer kraftigt ud til den brede, buede æg. I tværsnit er øksen ganske flad, bortset fra sidekanter, der hæver sig ca. 1 mm. Øskenerne er knap 3 cm lange og rager ca. 1,8 cm ud over randlinien. Den har intet spor af rifling eller rhombefacettering. Æggens brede bue er blevet slebet af finderen og står nu med skinnende bronzefarve mod øksens ellers mørkgrønlige patina.

Den ene side af øksen er stærkt forvitret i overfladen og skaller en smule. Den anden side derimod er meget velbevaret og viser ornamenterne i alle detailler. Ornamentikken er symmetrisk efter længdeaksen, dog med enkelte små uregel-

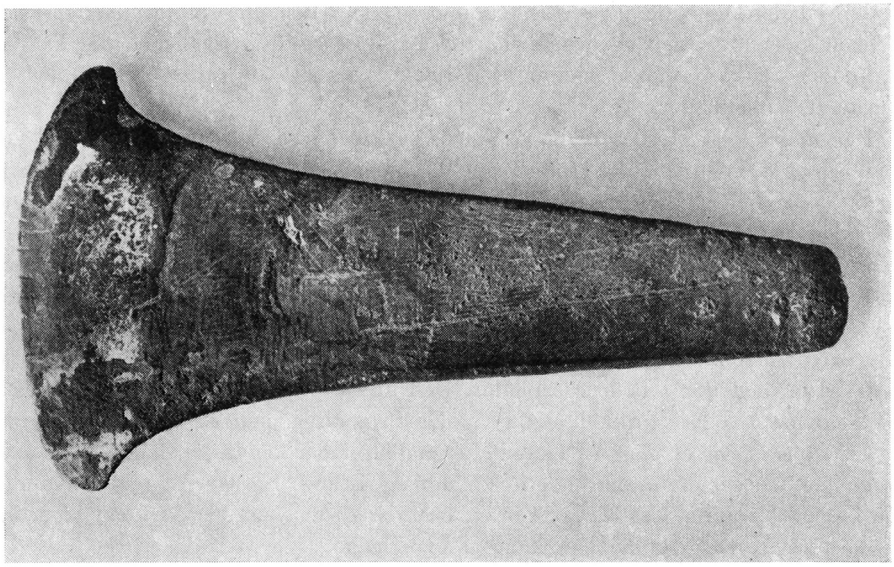

Fig. 2. Irsk bronzeøkse fra Ulstrup. Ca. 1/3.
Irish bronze axe from Ulstrup. Approx. 1 : 3.

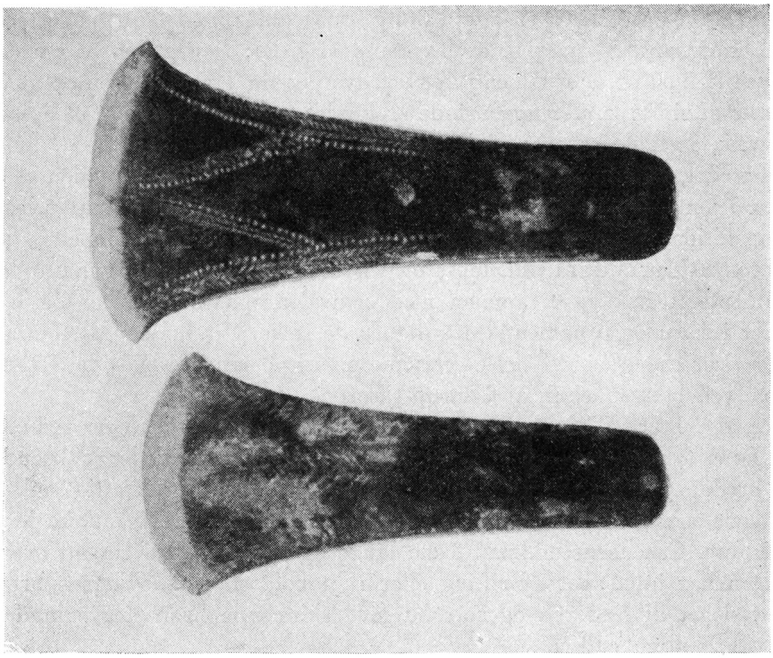

Fig. 3. Depotfund af økser fra Knockaun.
Hoard of axes from Knockaun.

mæssigheder. Den er sammensat af punkterede linier, ret grundt indpunslede. De er flere steder dobbelte, og mellemrummet mellem dem er udfyldt med punslet sildebensmønster. Stilen og ornamenteringsteknikken er ren irsk, men der kendes ikke nogen anden irsk økse med en så indviklet symmetri og sammenhæng mellem mønsterets enkeltheder.

Den anden økse, fig. 2, er noget større og kraftigere, 29 cm lang med 14 cm bred æg og 1,5 cm tyk. Den har svagt ophøjede kanter, en stærkt svungen æg, skarp nakke og flade bredsider. Dens sider er mere rette, nakken smallere, og den buede æg fladere. Øksen har et svagt rhombemønster på smalsiderne. Hen over midten af bladet findes et bueformet zigzagbånd, hvorunder ses to indpunslede horisontale linier, der opdeler fladen i to zoner. To lange, dybe linier løber parallelt ind over fladen, der er fuldkommen dækket med diagonale punselslag, der danner et »regnmønster«. De to økser har samme patina. Deres ene side er dybgrøn med nogle få brune pletter. Den anden side er på dem begge stærkt medtaget, næsten helt brun, blot med nogle få rødlige pletter.

Ulstrup-økserne er blandt de største eksemplarer der kendes af denne type, men lignende størrelser er fundet både i Skotland og Irland. En økse, der blev »fundet i ruinerne af Kilcrea Castle, Co. Cork«, beskrives som værende 31,7 cm lang, og en økse fra Nairn i Skotland er knapt 27 cm lang.

Ulstrup-øksens, fig. 2.s dekoration er typisk irsk. Øksen fig. 1 har fint komponeret mønster og er uden nøjagtige paralleller, men både teknikken og orna-

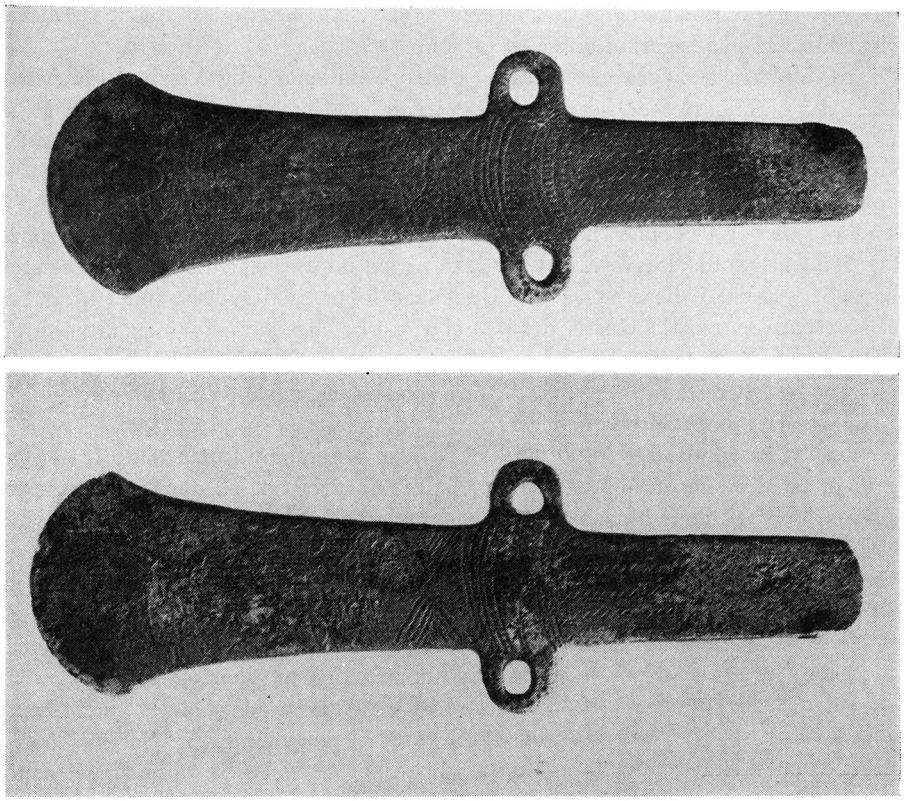

Fig. 4. Irsk bronzeøkse. Ukendt findested. Ca. 1/1.
Irish bronze axe. Provenance unknown. Approx. 1 : 1.

mentdetaillerne genfindes på andre irske økser. Således findes et bredt centralt V i sildebensmønster og prikmønster på en fladøkse fra Knockaun, Co. Waterford (fig. 3). På denne økse findes kun eet stort V, og sildebensmønstret afgrænses kun af en enkelt punkteret linie, men ideen i mønstrets anbringelse, samt æggens og øksens form i almindelighed minder slående om Ulstrup-øksen. En økse med tilsvarende øskener kendes kun i eet eksemplar, et 11,8 cm langt stykke, hvis nøjagtige fundsted ikke kendes, men det er næsten sikkert, at den stammer fra Nordøstirland (fig. 4). Dens ornamentik er ikke i alle enkeltheder typisk for irske økser, men dens irske oprindelse er udenfor tvivl.

Økser af irsk oprindelse blev forhandlet i Danmark, Sydsverige, Nordfrankrig og Centraltyskland i den tidlige bronzealder, og de første bronzesmede i Sydskandinavien efterlignede formen og ornamentikken på disse økser. Så at sige alle danske fund af irske økser er af samme type, der er meget almindelig i Irland, særlig på den nordøstlige del af øen, hvorfra de er spredt til Skotland og England. Kun i Nordøstirland og det østlige Skotland er der fundet støbeforme af sten, der svarer til deres form. Skønt de forekommer i Sydengland, er de sjældne der. Der findes ingen helt afgørende holdepunkter for en meget tidlig datering af

dem, men de ornamenterede økser af denne type må sikkert anses for at være samtidige med klokkebægerkulturen.

Tre fund fra et begrænset område, Ulstrup, Gallemose og Virring, indeholder sager, der er importerede langvejs fra. Virring og Gallemose ligger kun nogle få km fra hinanden på hver sin side af Gudenåen, nær dens udmunding i Randers fjord, og Ulstrup ligger mindre end 30 km op ad Gudenåen. I denne egn af Jylland er der således en koncentration af importsager. Dette kunde tyde på, at Randers fjord og Gudenåen har været en vigtig indfaldsport for den tidlige bronzealderhandel. Udbredelseskortene viser ikke nogen udpræget tæthed i den sene stenalders bebyggelse i disse egne, men Gudenåen løber mod sydvest ind i hjertet af det frugtbare morænelandskab, der var et af kerneområderne for megalitkulturen. Her må der have været et godt marked for metalredskaber blandt agerbrugsbefolkningen, der stadig benyttede flintredskaber og våben, men var rige nok til at købe de nye importerede bronzer.

Men hvilke veje fulgte importen? Hvis irske økser blev ført direkte fra Irland og ikke, således som det er antaget, også blev forarbejdet på dansk grund af en koloni af omvandrende irske smede, ville den mest direkte rute være over Skotland. Der findes et område med irske økser, der faktisk viser, at de fremmede smede har arbejdet her. Fra Skotland går handelsvejen over Nordsøen til Limfjordens munding. Der kan kun have været ringe efterspørgsel efter metalredskaber på det golde hedesand langs Jyllands vestkyst, så handelsfolkene har stået sig ved at bruge Limfjorden som smutvej gennem halvøen til østkysten og øerne, hvor de med større held kunne afsætte deres varer. De er måske også blevet tiltrukket af mulighederne for at sikre sig gode byttevarer i egnen omkring Randers fjord. Irland er mærkeligt blottet for vidnesbyrd om kontakt med Skandinavien i denne periode. Dette forhold har på den ene side givet anledning til den hypotese, at irske smede drog til Danmark og bosatte sig der. Fra anden side er den antagelse fremsat, at rigdom i Wessexområdet i England på denne tid skyldtes, at høvdingene der tjente som mellemmænd i den irsk-skandinaviske handel. Den sidstnævnte antagelse har det fortrin, at den forklarer gravenes rige inventar i Wessexkulturen, og også tilstedeværelsen af flintøkser og dolke fra denne tid i East Anglia kan forklares ud fra hypotesen om indirekte handel. Nylig er et flintværksted ved Sangstrup nær Fornæs blevet publiceret. Det ligger på spidsen af Djursland. Herfra er der sandsynligvis blevet eksporteret flintredskaber til Norge og Sverige netop i den periode, hvor ovenomtalte import foregik. Hvorvidt flintredskaberne fra East Anglia kan sættes i forbindelse med sådanne fundsteder som Fornæs er på nuværende tidspunkt kun ren spekulation. Men – hvis det er rigtigt, at købmændene, som handlede med flint fra Sangstrup klint, bragte andre varer med sig tilbage til re-eksport, så må vi forestille os, at der har været et eller andet handelscentrum i Østjylland, hvor der kunde tuskes om alle disse varer. En sådan markedsplads har næppe ligget på en vindomsust kyst som Fornæs, men langt snarere inde i en lun havn, der var tilgængelig både fra det åbne hav og fra landets indre. Randers fjord opfylder disse krav, så her har måske ligget et af Danmarks tidligste centrer for international handel.

Irish Axes from Ulstrup.

The Neolithic farmers of Denmark had developed a prosperous but self-sufficient peasant economy, making highly skillful use of their native resources of flint to provide themselves with tools and weapons. As early as Middle Neolithic times, however, they had begun occasionally to import copper axes, daggers and ornaments from Central Europe; shiny and superior objects which they could not make for themselves for lack of the necessary raw materials and the knowledge of how to make them. By Late Neolithic times imports of metal implements had become well organized and regular; coming not only from Central Europe but also from across the North Sea. Halberds of Irish form and axe blades decorated in the peculiar style employed by Irish smiths have been found in considerable numbers in Denmark. It has even been suggested that Irish bronzesmiths actually came to Denmark to make and sell their wares on Danish soil, and by teaching Danish apprentices the secrets of metallurgy paved the way for the beginning of the true Northern Bronze Age.

The two Irish axes described below are fresh examples of this Early Bronze Age overseas trade, which must have begun before 1500 BC.

Two very large decorated bronze axes were found in a field at Ulstrup in Northeast Jutland. One of them is a quite typical product of the Irish Early Bronze Age smiths who exported decorated bronze axes to Britain, Denmark, South Sweden and Germany. The second axe is also Irish in form and in the style of its decoration; but its pattern is unusually fine and elaborate – it may well be claimed as the finest example of its type ever found – and it also has the highly unusual feature of two flat sideloops. The looped axe has recently been acquired by the Forhistorisk Museum at Aarhus.

The site of the discovery, Ulstrup (Vellev parish, Hovlberg Herred) is close to the north bank of the Gudenaa River, some 30 km. from its mouth in Randers Fjord. The Gudenaa is the longest river in Jutland, and provides a convenient highway to the heart of the peninsula. The district close to the mouth of the Gudenaa has previously provided two of Jutland's most important finds containing imported Early Bronze Age bronze implements, the Virring and Gallemose hoards. The latter contained a decorated Irish axe together with Central European bronzes and native axes imitating the form and decoration of Irish axes; the Virring hoard included an axe which shows British inspiration in its cable-decorated sides. These finds will have to be taken into consideration in estimating the significance of the Ulstrup hoard.

Description of the Ulstrup axes.

Ulstrup Axe 1, with the side-loops, is illustrated in Fig. 1. It is a very large axe – 27.5 cm. long, 16 cm. in width at the cutting edge — but only slightly more than 1 cm. thick. It is very broad, tapering out from the butt end to a generously splayed cutting edge, and has very slight side flanges. The butt is rounded in plan, and in section tapers to a quite sharp upper edge. The flanges, which rise scarcely more than a millimeter from a surface that is quite flat in cross-section, are interrupted about 11 cm. down from the butt end to make way for the loops, the flat surfaces of which are an unbroken prolongation of the surface of the blade, though thinning down slightly. The loops are slightly less than 3 cm. in length, projecting out some 1.8 cm. from the line of the flanges, and are 0.8 cm. thick. The holes are 0.9 cm. wide at their centre. The axe's longitudinal section resembles two intersecting greatly flattened arcs; there is no central ridge. The sides have a faint ridge down their long axis; there is no trace of cabling or lozenges. The broad arc of the cutting edge has been sharpened recently, showing a strip of bright bronze colour against the dark green patina.

One of the faces of the axe is considerably marred by corrosion blisters and peeling of the surface, but on the better-preserved face the entire pattern is plainly distinguishable. The design is bisymmetrical, though with minor irregularities; and is composed of lines of shallow punched dots, often doubled and the space between filled in with punched chevrons ("herringbone"). The details are best appreciated from the illustration. The style and technique of the decoration are purely Irish, but no other Irish axe known shows such elaborate symmetry and interlocking of the various elements of the design.

Ulstrup Axe 2 (Fig. 2) is slightly larger and thicker than Axe 1 (29 cm. long, 14 cm. across the blade, 1.5 cm. thick). Like Axe 1 it has very slight side flanges, a widely splayed blade, a sharp butt, and a flat face without medial ridge. But its sides are straighter and the butt narrower; the upper edge is a more flattened arc. It has no loops; but it does have a very faint lozenge pattern on its sides, more easily felt with the finger than seen.

The decoration of the better-preserved face of Axe 2 (the other face is almost completely obscured by corrosion) is a more conventional Irish one. Across the centre is an arc-shaped zigzag band, with two lines of horizontal punch strokes just below it, dividing the face into two zones. Two long deeply scored lines run parallel diagonally across the face, which is entirely covered with diagonal punch strokes forming a "rain" pattern.

The two axes are similarly patinated. One side is a deep green with a few brownish patches; the other side is more heavily weathered, predominantly brown in colour with reddish-stained corrosion blisters.

The form of both the Ulstrup axes is evidently that of Megaw and Hardy's Type I. They are among the larger examples of this type; their length (27.5 and 29 cm. respectively) is unusual but by no means unknown in Ireland and Scotland. The axe "found in the ruins of Kilcrea Castle, Co. Cork" is described by Wilde[1]) as 12¼ inches (31.7 cm.) long, 8½ inches wide, and ⅜ inches thick. In Scotland the often-illustrated Nairn axe[2]) is just under 27 cm. in length.

The decoration of the Ulstrup Axe 2 is so typically Irish as to require no special comment. The finely organized pattern of Axe 1 is without exact parallel, but both its technique and the component elements of the pattern are matched on Irish Type I axes. Thus a simpler but essentially similar pattern, featuring a broad central V in herring-bone and pointillé, occurs on a flat axe (one of two found together) from Knockaun, Co. Waterford[3]) (Fig. 3). There is only one large V on Knockaun Axe 1, and the herring-bone is outlined by only a single pointillé line instead of two, but the similarity in the conception, the placing of the V, the outlining of the edge of the axe in the same technique, and the general form of the axe are strikingly reminiscent of Ulstrup Axe 1.

Different patterns executed in the same style of compound herringbone and pointillé lines occur on a large Class I axe, found with two others decorated somewhat differently, near Connor, County Antrim[4]). All three Connor axes are similar in form (except for the side-loops) to Ulstrup Axe 1. It is therefore particularly noteworthy that another of the Connor axes has "a striking similarity in size, form, pattern and technique" to another axe found in Denmark, at Selchausdal. The resemblance is so close that Megaw and Hardy could declare that "it is quite likely that these axes, though found some 700 miles apart, were made in the same workshop in Northern Ireland"[5]). The decoration of the Selchausdal axe has one element, hatched triangles, which does not occur on either of the Ulstrup axes; but its herringbone, pointillé outlining, and "rain" pattern all appear on one or the other of them. In view of these similarities in form and decoration it is perhaps not too dangerous to suggest that all of these axes – Ulstrup, Selchausdal, Connor and Knockaun – derive, if not from one workshop, at least from a single group of craftsmen trained in the same methods and technique. They should therefore be quite close together in actual date of manufacture.

Thus only the side-loops on Ulstrup Axe 1 remain as a rare and unusual feature. Their character is different from the side-loops which are a familiar feature of spearheads and palstaves in Middle Bronze Age Britain and Ireland, and on socketed axes in the British Isles and on the Continent; the Ulstrup loops are broader, thicker and flat on their faces. There appears to be only one recorded example of precisely such flattened sideloops on a decorated flat axe. It is a very small baby brother to the Ulstrup axe, measuring only 4½ inches (11.8 cm.) in length. (Fig. 4). Its decoration includes pointillé and the "rain" pattern which connect it with the series we have been describing, though there are also motifs which are somewhat atypical for Irish axes, though not so extraordinary as to cast doubt on its Irish origin. Its exact find-spot is unrecorded, but is almost certain to have been Northeast Ireland[6]).

Double loops also appear on an atypical small undecorated bronze axe with high cast flanges and a broad but shallow stopridge, typologically more advanced than our Class I Irish axes. It was found at Bryn Crûg, Caernarvonshire, Wales, in a grave with urns, a bronze

knife, and a trilobate bronze pin[7]). Somewhat similar loops also occur on a chisel said to have been found in a barrow near Pettycur, Fifeshire, Scotland[8]). Finally, mention should perhaps be made of the extraordinary flanged axe, large (29.4 cm.) and decorated, from Frankenthal(?), Germany[9]), which has at its sides two long projections which have been curled to form loops. The form of this axe is quite unlike the Irish ones, and the herring-bone decoration, though perhaps inspired ultimately from Ireland, appears to be of the type which is also found in Central Europe on ingots of double-axe form. Of these, only the small Irish decorated axe is likely to be closely related to the Ulstrup looped axe, and we need hardly hesitate in attributing the latter to Irish workmanship.

The Date and Significance of The Ulstrup Hoard.

The origins, distribution and chronology of decorated bronze axes were discussed by Megaw and Hardy in their classic study published in 1938. They demonstrated that axes of actual Irish origin were traded to Denmark, South Sweden, Northern France and Central Germany in the Early Bronze Age, and that the earliest bronze-smiths in South Scandinavia imitated the form and decoration of these axes in their earliest metal industry. Virtually all of the Danish finds of actual Irish axes are of their Class I (which have no side-flanges or slight flanges made by hammering, as opposed to their Class III axes, with higher flanges made by casting, and Class II which is intermediate and has low flanges which are probably cast). Type I axes are very common in Ireland, especially in the northeastern part of the island, with a sprinkling of them in Scotland and England. Stone moulds for their manufacture are common only in Northeast Ireland and Eastern Scotland. Although they do occur in South England, they are rare in the principal area of the Wessex Culture. Although the evidence for their very early dating can hardly be said to be conclusive, Type I decorated axes may have begun as early as Beaker times; how long their manufacture and use persisted is better demonstrated from their Continental finds than by evidence from Ireland or Britain.

Of the Danish finds of Irish Type I axes, the majority are from the islands. Megaw and Hardy list finds from Fyn (Flenstofte), Zealand (Selchausdal, two separate finds) and Store Hedinge (two finds, one of which is a hoard of three axes); to which may be added a decorated axe from Lumby Taarup, Fyn, found with two small axes of non-Irish form[10]). Aside from the Ulstrup hoard, the only Type I axe previously found in Jutland is the one in the Gallemose hoard[11]). This axe is also a large one, and it possesses herring-bone ornament on the upper portion of its blade in the same punched stroke technique that is found on both Ulstrup axes. It has lozenge-shaped facets on its sides, like (but more distinct than) Ulstrup Axe 2. It differs from them in possessing subdued shallow grooves parallel with the cutting edge on the lower portion of the blade. It was associated in the hoard with six axes of Forssander's Pile type, axes made in Scandinavia imitating the form and the groove decoration of the imported Irish axes; a larger and narrower flat axe, also presumably of Northern origin; and six penannular bronze rings of forms common in Bohemian and Saxo–Thuringian hoards from a late stage of the Early Bronze Age (Reinecke's A1). There are also three peculiar objects of uncertain use, which have no parallels elsewhere; curved bars with hooks at the ends and rectangular perforations, with cast herring-bone ornament.

This hoard has long been recognized as being of great importance in fixing the date of the Irish axes imported to Denmark and South Sweden as contemporary with a late phase of the Unětice bronze industry of Central Europe (but not quite as late as Reinecke A2) and with the earliest Northern bronze industry. This comparative dating is confirmed by the occurrence of Irish decorated axes in the Pile hoard in South Sweden and in the Dieskau hoard in the Saale valley in Central Germany[12]).

This remains as close as we can come to the dating of the Ulstrup hoard. We may, however, suspect that the side-loops and the advanced character of the decoration of Ulstrup Axe 1 are indications that it is a late example of its type. Whether the flat side-loops are an early foreshadowing of the Middle and Late Bronze Age side-loop habit, or whether they imply that the Middle Bronze Age had already come into existence by the time the Ulstrup axes were made, cannot be certainly decided on the present evidence. A minor point to be noticed in this connection is that the small Irish side-looped axe cited above as the best parallel for this feature has small arcs as part of its decorative scheme; a feature which is quite rare in

the Irish repertoire (but occurs also on a Type III axe from Ireland, Evans, *Ancient Bronze Implements* (Fig. 35), but which is normal in Scandinavian decoration of Broholm's Period I.

Type III decorated axes, with high cast flanges, differ in their distribution from those of Type I. In Ireland they are distinctly less common than Type I axes; and in Scotland they are very rare. But there is a marked concentration of Type III axes in Eastern and Southern England, especially in Yorkshire, East Anglia, the Thames Valley, and the South Coast. Many of these are of Irish type but others are of a type less common in Ireland and better represented on both sides of the English Channel. Unlike Type I axes, they occur in hoards of the Wessex culture in the later part of the British Early Bronze Age. It is with the South British-Continental variety of Type III axe that the often-cited "Western" flanged axe with cabled side decoration from the Virring hoard must be connected. British authorities do not accept the Virring axe as an actual import from the West, but regard it as a local imitation of a Western flanged axe. The Virring hoard must belong to a chronological phase which parallels Reinecke A2 in Central Europe and the later part of the Wessex Culture in South England, and is assigned to a later period in Denmark (Broholm's »Vor tidligste Metalkultur«) than the Pile-Gallemose stage. Nevertheless, since the Ulstrup hoard is likely to be late in its period and the Virring stage cannot be a long one, the actual gap in time between them can hardly be very great.

Thus we have three hoards – Ulstrup, Gallemose and Virring – each containing objects imported from distant places, probably not far separated in time, and occurring within a quite limited area. Virring and Gallemose are only a few kilometres apart, on opposite sides of the Gudenaa near its mouth in Randers Fjord; while Ulstrup is less than 30 km. up the Gudenaa. We have, then, something of a concentration of foreign imports to Jutland. It may be, then, that the Randers Fjord and the Gudenaa were an important point of entry for Early Bronze Age metal-work. There does not appear from the distribution maps to be any special concentration of Danish Late Neolithic settlement at this point of entry, but the Gudenaa leads southwestward into the heart of the fertile moraine belt which was one of the principal areas of settlement of the Megalithic culture. Here would be a market for metal implements, an agricultural population still largely making use of flint tools and weapons but prosperous enough to be able to afford the new imported bronzes.

By what route did these imports come? If the Irish axes were brought directly from Ireland (and not, as has been suggested by Megaw and Hardy and De Navarro, actually made on Danish soil by a colony of itinerant Irish smiths, perhaps in the Danish islands) the most direct route would cross Scotland (where a trail of Irish axes shows they actually did penetrate) and then across the North Sea to the mouth of the Limfjord. There would be little demand for metal-work on the barren heath-lands along the west coast of Jutland; the traders would have utilized the Limfjord as a passage through the peninsula and sought their more profitable outlets along the east coast and in the islands. Perhaps, too, they were attracted to the region of the Randers Fjord by the possibiliy of securing goods for exchange. Ireland is curiously barren of evidence of Scandinavian contacts at this period; a fact which has led on the one hand to the hypothesis that Irish smiths came to Denmark and settled there, and on the other to the suggestion that the Wessex chiefs gained their wealth by acting as middle-men in the Irish-Scandinavian trade. This suggestion has the merit of explaining the wealth of amber in the Wessex culture; and the occurrence of flint axes and daggers of this period in East Anglia (but not in Wessex) might also be explained by such a hypothesis of indirect trade. Professor Glob has told us recently[14]) of the flint work-shop at Sangstrup Klint, near Fornaes, situated at the end of the peninsula jutting out south and east of the Randers Fjord, which probably exported flint implements to Norway and Sweden in precisely the period we are considering. Whether the East Anglian flint implements could also be connected with sites such as Fornaes could at present only be speculation; but if Professor Glob's suggestion that the merchants who dealt in the Sangstrup Klint flints brought other goods back with them for re-export is valid, then we would have to visualize some sort of market centre in East Jutland where all these wares could have been exchanged. Such a market would hardly be on an exposed foreshore such as Fornaes, but more likely would be well inside a sheltered harbour accessible to both the major sea routes and the interior of the peninsula. The Randers Fjord fits these conditions; and here, perhaps, lay the site of one of Denmark's earliest centres of international trade.

Acknowledgements.

I wish to express my gratitude to Professor Stuart Piggot, Professor E. E. Evans, Professor P. V. Glob, Professor C. J. Becker, Professor V. Gordon Childe, Dr. Ole Klindt-Jensen, Mr. B. R. S. Megaw, Mr. Poul Kjærum, and Mr. Henry Hodges for assistance in the preparation of this paper. Professor V. Gordon Childe has very kindly read the manuscript. For photographs I am indebted to the National Museum of Antiquities of Scotland, the National Museum of Ireland, and the Forhistorisk Museum of Aarhus.

This paper was prepared in the course of a broader study of Bronze Age trade for which financial assistance has been generously provided by the Wenner-Gren Foundation for Anthropological Research of New York, the American-Scandinavian Foundation, and Professor V. Gordon Childe. I also wish to express my deep gratitude to all the many Danes whose generous hospitality and unfailing helpfulness has facilitated my studies and made them so pleasant; I am sorry that it is impossible to mention all of them by name.

Jay Butler.

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NOTES

[1]) Wilde, Sir William R., A descriptive Catalogue of the Antiquities ... in the Museum of the Royal Irish Academy. Annual materials, metallic materials (1861), p. 364, fig. 247. [2]) Evans, Sir John, Ancient Bronze Implements of Great Britain and Ireland (1881), fig. 21. [3]) Department of Education, Report on the National Museum of Ireland, 1933–34, p. 13; pl. 3: 1 and 2. [4]) Megaw, B. R. S., and Hardy, E. M., »British Decorated Axes and their Diffusion«. Proceedings of the Prehistoric Society, IV (1938), fig. 1: O, e, f; pl. LII. a; p. 291. [5]) Ibid. Fig. 13: a; pl. LI: 2; p. 291. [6]) Evans, op. cit., p. 105, fig. 107. National Museum of Antiquities of Scotland, Edinburgh; Bell Collection, DB 45. I am indebted to Professor Stuart Piggott and Professor E. E. Evans for information concerning the probable provenance of this axe. The Bell Collection comprises finds of local origin, mainly from County Antrim, and it's attribution to Northeast Ireland is likely to be safe. [7]) Wheeler, Sir Mortimer, Prehistoric and Roman Wales, pp. 145–46, 178; fig 48. [8]) Evans, op. cit. p. 99, fig. 92. [9]) Behrens, G., Bronzezeit Süddeutschlands (1916), Taf. IV: 7. [10]) Odense Museum, 2730–2. Aarbøger 1938, p. 68, figs. 4–6; Broholm, H. C., Danmarks Bronzealder I, 201. [11]) Neergaard, C., »Nogle Depotfund fra Bronzealderen«. Nordiske Fortidsminder I, p. 75 ff.; pl. XVI. National Museum, Copenhagen, B 3885–3891. [12]) Forssander, J. E., Der Ostskandinavische Norden während der ältesten Metallzeit Europas (1936). Megaw and Hardy, op. cit.; De Noram, J. M., »The British Isles and the Beginning of the Northern Early Bronze Age« in The Early Cultures of North-West Europe (Chadwick Memorial Studies 1950), p. 77 ff. [13]) Megaw and Hardy, op. cit., fig. 7, 8; cf. Fox, Sir Cyril, The Personality of Britain (4th Edition, 1947), pl. VII. [14]) KUML 1951, p. 23 ff.