INTRODUCTION

This study is an approach toward a history of the trade and industrial connections of the British Isles with Northern Europe during the Bronze Age.

The work is divided into three parts. In Part I the types of tools, weapons and ornaments involved in exchanges between the British Isles and Northern Europe are discussed individually. In Part II a period-by-period trade history is attempted. Comparative chronology is discussed in Part III.

The term 'Northern Europe' as here employed includes all the territory from the mouths of the Scheldte and the Rhine to the Vistula; and from the foot of the Central German highlands (bounded approximately by the 600-foot contour, which is shown on our distribution maps) to Denmark and South Sweden. The archaeological boundary of Northern Europe does not, of course, really include the Western and Southern provinces of the Netherlands (it would be interesting to know why the cultures of the North European plain so often fade out between the Hunze and the IJssel). Norway and Central and Northern Sweden were included within the intended scope of this study, but search of the museums failed to reveal any evidence of British or Irish connections with those areas, until at the very end of the Bronze Age a few links appear with Central Sweden and Gotland. Our North European area has thus a certain geographical unity; it comprehends the low-lying lands facing the North and Baltic Seas, with belts of peat bog alternating with heaths and moraines.

The entire area is completely barren of natural metal resources, except on its southern fringe in Saxo-Thuringia. Only the fine flint from the chalk of Denmark and Scania and the amber washed up on the Baltic and North Sea shores constituted mineral resources of recognizable trade significance. East-west trade cuts across the main natural lines of transport in Northern Europe. The principal rivers flow from south to north. Only the Lower Rhine and its tributaries, the Lower Elbe, and the seas provide east-west water routes. The base of the Jutland peninsula can be crossed with only short portages between the heads of rivers; farther north, the Limfjord provides a way of avoiding the terrors of the Skagerrak. East-west trade and migration routes certainly crossed North Germany, but it is well to remember how much easier it is to float down the Rhine, Ems, Weser, Elbe or Vistula than to strike out cross-country.

No single definite date defines the beginning of the Bronze Age throughout our

entire area. The exact dates at which copper and, later, bronze technology were introduced to Saxo-Thuringia and to Ireland are still really unknown; our study begins some centuries before 1500 B.C. Certain regions and cultures remained firmly Neolithic, or knew metal goods only through importations of finished products, for centuries after the most favoured areas had developed exporting metal industries. We discuss 'Neolithic' trade in amber, flint, gold and copper products, as well as that of the Bronze Age proper. Our study ends at c. 700 B.C.; it covers more than a millenium of Northern Europe's earliest industrial history.

The study is based in the first instance upon material examined in the museums (a list of those visited on the Continent is given), except for the territory east of the border of the Federal German Republic, which passport restrictions made it impossible to visit. In Britain, extensive use has been made of the British Association Card-Catalogue of Bronze Implements, formerly housed in the British Museum; but wherever possible the original objects have been examined. Inevitably, some types, periods and areas have been studied more intensively than others; depending partly on the existing state of research and publication, partly on the volume and accessibility of the material concerned. It is regretted that circumstances did not allow the study to be extended to include full examination of the Belgian and especially the Northwest French material, which must contain the keys to many of the problems discussed in the following pages.

Prehistoric relations between Scandinavia and Western Europe, including those of the Bronze Age, were first surveyed by Oscar Montelius (1891, 1910), who advanced many ideas subsequently developed by others. The Irish connections with Scandinavia long occupied the centre of the stage, Britain, the Netherlands and North Germany remaining obscurely in the background except in connection with Beaker and Deverel invasions. Irish relations with the North were reviewed from time to time, as by Bremer (1927) and Mahr (1937); Hencken (1951) summarized Ireland's contacts with the North with special reference to the problems of comparative chronology raised by pollen zonation and *Grenzhorizont* correlations (cf. Mitchell, 1944–5, 1951, 1956). Studies of individual types of particular importance for Ireland's relations with Northern Europe included those by Coffey (1909) and Hardy (1937) on lunulae, O Riordain (1937) on halberds, Megaw and Hardy (1938) on decorated axes, Jacob-Friesen (1931) on sun discs, Sprockhoff (1934a) on looped spearheads and (1930) on shields, and MacWhite (1944a) on Late Bronze Age amber and (1945) trumpets.

In Britain, Stuart Piggott (1938) set forth the richness of the Wessex Early Bronze Age amber trade, listed and mapped finds of Scandinavian flints in Britain, and called attention to the Wessex connections with Saxo-Thuringia. De Navarro (1951) drew together the evidence for relations between the British Isles and Northern Europe during the Early Bronze Age. Hawkes (1942) had meanwhile

drawn attention to certain Northern influences in Britain in connection with 'The Deverel Urn and the Picardy Pin', and C. M. Piggott (1949) studied the North European connections of the Blackrock hoard and related finds. Cowen (1952) discussed British sword-exports to Northern Europe (simultaneously withdrawing some dubious Northern sword-exports to Britain from the record).

Undoubtedly the greatest contribution, however, has been made by Ernst Sprockhoff, who in a series of monumental works has put the North German Bronze Age on the archaeological map. His three works on the North German Late Bronze Age hoards (1932a, 1937, 1956), his study of shields and other hammered bronze work (1930) and of swords (1931, 1934b), and a flood of greater and lesser papers, provided the background for, among other things, his volume (1941) devoted to the relations between *Niedersachsen* and Western Europe. This transformed the entire problem, and made it possible to see for the first time the continuity of many Bronze Age phenomena across the entire North European plain. This study owes much to Sprockhoff's publications, and much of it is inevitably a commentary on his material and his views.

One further work must be mentioned: the typescript dissertation on the Bronze Age of the Netherlands by P. Felix (1945), which, despite its dubious orientation and its many inadequacies, provided useful lists and illustrations to work with.

How much we owe to the numerous works, published and unpublished, of V. G. Childe and C. F. C. Hawkes, will be obvious to all who have been concerned with the problems discussed in the following pages.

This study was originally suggested by, and was carried out under the supervision of, the late Professor V. Gordon Childe. About two-thirds of the text was read by Professor Childe before his last departure from England and his subsequent tragic death. Responsibility for the opinions expressed, for mistakes, omissions and inadequacies, is of course the writer's own.

The work was submitted to the University of London as my Ph. D. dissertation in 1958. Subsequently, my continued employment with the Biologisch-Archaeologisch Instituut in Groningen, and with the Netherlands Organisation for the Advancement of Pure Research (Z.W.O.), has made possible a detailed study of the Bronze Age material in Dutch museums. This incidentally brought to light some additional material relevant to the present study, which has accordingly been incorporated. Newly published material which became available in books or major archaeological journals up to the end of 1961 has, as far as possible, been integrated into the text. In the meantime, also, the article of M. A. Smith (1959) appeared. This confirmed independently, and indeed made official doctrine, the re-dating of the Taunton-Barton Bendish phase in Britain (Miss Smith's 'ornament horizon') which was one of the chronological conclusions of the present work. Further, the Hilversum Culture migration from southern England to the Netherlands at the

end of the Early or the beginning of the Middle Bronze Age, originally identified by Glasbergen (1954), has been given greater precision, and is shown to have originated from the Wessex area by Dr. I. F. Smith (1961). Lastly, the major work by Junghans, Sangmeister and Schröder (1960), with its definition of Aeneolithic and Early Bronze Age metal groups on the basis of spectro-analysis, has made its appearance. Although it appeared as yet premature, at the time these lines were written, to accept the distribution of metal of a particular JSS group as representing *ipso facto* a pattern of trade, we have taken the opportunity to include references to their metallurgical classification of objects which figure in the present study.

Discussion of the possible implications of the JSS study for the problem of trade between the British Isles and the Central German area, North Germany and Scandinavia (the areas with which the present study is concerned) had, however, to be reserved for another context (Butler and Van der Waals, in *Helinium* 1964).

References to a number of new and relevant works that came to our attention in the course of 1962–3 have been inserted where ever this could be done without necessitating major alterations.

The two relevant and important articles in *Culture and Environment: Essays in honour of Sir Cyril Fox* (1963) – S. Piggott, 'Abercromby and After: the Beaker cultures of Britain reexamined', and C. F. C. Hawkes and the late R. R. Clarke, 'Gahlstorf and Caister-on-Sea' – arrived too late to influence our presentation. Several chapters of our original text dealing with much-discussed connections between Northern Europe und certain types of Irish gold work – pennanular rings, gorgets, vessels, 'fibulae' – have been excised. Though they 'belong' for the sake of completeness, the connections are vague and difficult to date, and we had little new to say about them. What new is to be said, Professor Hawkes has said eloquently in his new study.

ACKNOWLEDGEMENTS

In 1953–4 the writer held a Pre-Doctoral Fellowship of the Wenner-Gren Foundation for Anthropological Research, Inc., of New York. A grant was also received from the American-Scandinavian Foundation (New York). The generosity of these foundations permitted a year's study in Scandinavia, centred mainly in Copenhagen, where the rich collections and library of the National Museum, and the gracious and friendly assistance of the staff of its First Department, were at my disposal. My deep gratitude is hereby expressed to Dr. Therkel Matthiassen, then head of the First Department, and to the entire staff.

For the hospitality of their excavations and their genial guidance to their native field monuments and antiquities I am grateful to Prof. Dr. O. Klindt-Jensen, then of the National Museum, Copenhagen, Mag. Poul Kjaerum of the Aarhus Forhistorisk Museum, and the late Dr. Erik Hinsch of the Bergen Museum. To Professor Klindt-Jensen and Professor P. V. Glob I am grateful for tours of museums and field monuments in the delightful Danish countryside.

In the Netherlands, the writer, together with other students of the University of London, was for five weeks in 1951 the guest of the Rijksdienst voor Oudheidkundig Bodemonderzoek, Amersfoort, where its Director, Dr. P. Glazema, placed the facilities of the Service at our disposal, and conducted us on an extended tour of museums in the Netherlands. We also participated in the excavations of Dr. Glazema and of Dr. (now Professor) P. J. R. Modderman.

To Professor H. T. Waterbolk, Director of the Biologisch-Archaeologisch Instituut of the State University at Groningen, the writer is deeply indebted for the hospitality of his Institute since 1957. I am also grateful to the former Director, Professor A. E. van Giffen; to Professor W. Glasbergen, Director of the Instituut voor Prae- en Protohistorie of the University of Amsterdam; to Professor Brunsting of the Rijksmuseum at Leiden; to my Groningen colleague J. D. van der Waals; and to many other Dutch colleagues for their assistance on many occasions.

Individually to thank all those who have contributed in one way or another to this study is unfortunately impossible here. I must however mention Dr. Joseph Raftery and Miss Ellen Prendergast of the National Museum of Ireland, Dublin; Mrs. Maire de Paor of the Department of Archaeology, University College, Dublin; Dr. Eoin MacWhite, Dublin, who generously permitted me to consult his unpublished dissertation on the Irish Bronze Age; Mr. H. W. M. Hodges, then of Queen's University, Belfast, now of the Institute of Archaeology in London; Professor Stuart Piggott of the University of Edinburgh and Mr. R. B. K. Stevenson of the

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Many photographic prints were made for me by the Department of Archaeology of the Queen's University, Belfast, for which I am deeply indebted to Dr. E. M. Jope and Mr. H. W. M. Hodges. Other prints were provided by the Biologisch-Archaeologisch Instituut, Groningen. Mrs. Eva Wilson of London generously executed a number of drawings. Others were made by B. Kuitert, B. Kracht and H. Roelink in the B.A.I., Groningen.

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Then I wish to thank my teachers, colleagues and friends of the University of London Institute of Archaeology; of whom I will here specify by name only the Librarian, Miss Joan Taylor, and Miss Geraldine Talbot, also of the Library; without whose help this study could never have been written.

But above all there is the late Professor V. Gordon Childe. To his teaching and inspiration, to his many personal acts of kindness and generosity, I owe much more than I can ever adequately acknowledge. For him this study was intended; to him it is dedicated, in fond memory of his limitless devotion to his students and to the science which he so uniquely made his own.

LIST OF CONTINENTAL MUSEUMS VISITED

Field work for this study was carried out mainly in the years 1951–4. Passport restrictions rendered it impossible for the writer to visit collections in East Germany and Poland, and the literature has been relied upon exclusively for material east of the border of the Federal German Republic. The museum collections in Denmark, Northwest Germany and the Netherlands have been studied intensively; in Sweden the three main collections were examined, and Dr. Andreas Oldeberg (Stockholm) kindly allowed the writer to examine drawings of bronzes contained in the smaller museums not visited. Norwegian collections were studied carefully, but with only negative results as far as this work is concerned. A study-tour in 1954 permitted the writer to see various collections in South and West Germany and Switzerland; some material was examined also at St. Germain-en-Laye and in Spanish museums.

I take this opportunity of expressing my gratitude to the directors and staff of the museums named below.

Denmark
Copenhagen (National Museum), Odense, Rudkøbing, Haderslev, Esbjerg, Aarhus, Viborg, Holstebro, Ringkøbing, Hjørring, Thisted, Randers, Rønne.

Norway
Oslo (Universitetets Oldsaksamling), Bergen, Trondheim, Stavanger.

Sweden
Stockholm (Statens Historiska Museum), Lund (Universitets Historiska Museum), Göteborg.

Germany
Schleswig (Schloss Gottorp), Hamburg (Museum für Hamburgische Geschichte; Museum für Völkerkunde), Harburg (Helmsmuseum), Stade, Oldenburg, Hannover, Cloppenburg, Münster, Bonn, Heidelberg, Speyer, Stuttgart, Munich, Regensburg, Landshut, Singen.

Netherlands
Leiden (Rijksmuseum van Oudheden), Nijmegen (Rijksmuseum G.M. Kam), Amersfoort (Museum Flehite), Assen, Groningen (also Biologisch-Archaeologisch Instituut), 's-Hertogenbosch, Maastricht, Leeuwarden, Utrecht, Arnhem, Zwolle, and others.

Belgium
Brussels (Cinquantenaire).

Switzerland
Basel, Zürich, Bern, Arbon.

France
St. Germain-en-Laye, Haguenau, Strasbourg.

PART ONE

THE TYPES

Bronze tools, weapons, and other useful objects (Chapters I to X).
Bronze ornaments (Chapters XI to XV).
Gold ornaments (Chapters XVI to XVIII).

CHAPTER I

HALBERDS

(List, p. 25–6; Pl. I; fig. 1–3; Map I)

The halberd, a clumsy and inefficient weapon, enjoyed a surprising popularity over a wide area during an early phase of the European Metal Age; perhaps more as a parade object than as an implement with which one really tried to smite one's enemies. Copper and bronze halberds have been found in a territory extending from Ireland and Portugal in the West to Poland and Italy in the East, with occasional examples occurring even beyond these limits. Main centres of manufacture, producing readily distinguishable varieties, included the British Isles (where close to 200 examples have been found, the overwhelming majority in Ireland), the Iberian peninsula (especially in the El Argar culture), the Central European area dominated in the Early Bronze Age by the Unětice culture, and an East German-Polish centre. The two last-mentioned areas are included in the halberd list and maps recently published for the broadly 'Central European' area by Von Brunn (1959, 25 ff., with *Karte* 1 and 2 list p. 73–5). He lists 87 finds, containing over 100 specimens (*cf.* our fig. 3).

The origin of this European halberd fashion has been attributed by various authorities to Italy, the Iberian peninsula, Central Germany and Ireland. The question was dealt with most extensively in a well-known monograph by O Riordain (1936). He demonstrated that typologically the Argaric halberds could *not* be taken as the prototypes for the rest, but that there was a close and evident relationship between the halberds of Ireland and those of Central and Northern Europe. If Central and North Germany had the most advanced and elaborately made halberds, the splendid series of parade implements with hollow-cast metal hilts, Ireland could boast not only the largest number but also the most primitive, and therefore the most original of the European halberds. Improving on a typological scheme of Coffey, O Riordain distinguished six types of Irish halberds. His Types 1, 2 and 3 were primitive and early, and occurred in Ireland only. His Type 4 was, however, represented not only in Ireland but in Britain, Denmark and South Sweden, and Continental Europe. O Riordain saw this halberd type as an Irish invention, an improvement of his Type 3, which was spread first to Northern and then to Central Europe by actual trade and imitation. His Types 5 and 6 were later,

lasting into the Middle and even perhaps the Late Bronze Age, and almost exclusively confined to the British Isles. Types 1–3 are, therefore, the critical types for the question of origins (we must reconsider whether O Riordain's Eirocentric view may be still adopted as valid), and Type 4 the key type for the problem of trade. In considering the trade pattern we must review the finds in three regions within the broadly North European area where halberds have been found: first, Denmark and South Sweden; second, a small group in the Netherlands and Westphalia; and third, the halberds of Central and Northeast Germany.

The reader will recall that halberd blades of O Riordain's Type 4, the only type involved in the trade between the British Isles and Northern Europe, is characterised by three stout rivets, a midrib, and a straight or very slightly ogival outline. Some 34 examples of this type had been found in Ireland itself (some further examples have since become known), 8 in Scotland, 3 or 4 in England, and 5 in Wales. In South Scandinavia (*i.e.*, Denmark and southern Sweden) there were 15 examples (9 in Denmark, 6 in Sweden) which were 'remarkably Irish in character'. In the other two regions mentioned there were no halberds so remarkably Irish that O Riordain wished to claim them as being of actual Irish manufacture, yet he could cite two examples in the Netherlands, one in Northwestern Germany, and one in Central Germany which stood very close to the Irish series. In addition, there were seven others in Central Germany and the Rhineland, 3 in Denmark and South Sweden, one in Switzerland, and a few elsewhere which O Riordain classified as 'Type 4', but with the explicit qualification that they diverged distinctly from the Irish type.

In the following we accept unreservedly O Riordain's judgment as to the degree of resemblance of individual specimens to the Irish halberds of Type 4; but in the light of experience in the quarter-century since he wrote, certain interpretations seem inevitably to call for revision. After discussing the three geographical groups already mentioned, we consider whether the halberd is to be regarded as an Irish influence in Northern Europe, or a Central or North European influence on the British Isles.

1. *The Northern Group*

In Denmark and South Sweden, a total of 26 halberds have been found. Of these, 15 are, in O Riordain's words, 'so homogeneous in type and so similar to the Irish ones (of Type 4) in character that one is constrained to think of them as undoubtedly the work of Irish craftsmen, whether made in this country (*i.e.*, Ireland) or made – and the suggestion does not seem too far-fetched for the facts – by a group of metallurgists from Ireland who had settled in Scandinavia' (O Riordain, 1936, p. 299).

In considering the trans-British route by which halberds may have reached Denmark and Sweden from Ireland, it seems evident that the distribution only of Type 4 halberds ought to be taken into account, and we have plotted these on Map I. Finds of Type 4 halberds in Britain occur near the Aberdeenshire coast, the Firth of Forth, the Yorkshire coast, and the Thames estuary; any of these could conceivably make a jumping off point for the voyage to Denmark. Use of the Great Glen and Clyde-Forth routes across Scotland and a route from Wales to the Thames valley is suggested by the map. Scottish routes have been stressed by O'Riordain, Megaw and Hardy, Scott and de Navarro; the latter also suggests the more southerly route, proceeding up the English Channel to Denmark, but here, as de Navarro points out, the absence of halberd finds in the Wessex area creates a difficulty. The Scottish route, then, is the most likely on the existing evidence.

The often repeated suggestion that a number of Scottish halberd hoards are relics of the transit trade to Scandinavia is attractive. But the Anchingoul hoard (Banffs.: *PSAS* LXXV, 208 ff, Pl. XLIX) consists of four halberds of Type 6; none of the Scandinavian halberds are of this type. The hoards from Kingorth (Bute; O Riordain Scot 10–12) and New Machar (Aberdeens; O Riordain Scot 7-a) consist of Type 4 halberds; but five of the six halberds in these two hoards are heavily damaged. Both these hoards were found in peat and may represent votive deposits or scrap; but it is hard to see them as merchants' hoards!

Various British writers – Megaw and Hardy, de Navarro, Sir Lindsay Scott – have endorsed the idea of a settlement of Irish (or, as Sir Lindsay Scott alternatively suggested, 1951, p. 33, Scottish) smiths in the Danish islands. Four of the Irish-type halberds have been found in the Danish islands, four in Scania, one in Vestergotland (in the area in which porthole-stone cists of Skogsbo type are concentrated: map Montelius, 1910, 259 *Abb.* 6) and two in East Jutland; there are also a number of specimens without exact provenance. In general, the area in which the halberds occur is that occupied by the Funnel-beaker (TRB) culture; there are no finds on the western coast of Jutland to suggest a landfall there, and the halberds are absent from the territory of the Single Grave culture. But whether these two Danish Middle Neolithic cultures still actually existed as entities at the time of the halberd importation is not entirely clear.

The question of whether the Danish and Swedish halberds of Irish form were actually made in Scotland, Ireland or Northern Europe is one that may eventually be answered satisfactorily by metallurgical analysis; but to date (1963) no analyses of Northern halberd finds of Irish type have yet been published.

Thus far we have considered only the halberds of purely Irish type found in Denmark and South Sweden; but what of the remainder of the Northern halberd finds (O Riordain's Scandinavia No. 16–26)? Two of these from Scania (Nos. 25–6) are metal-shafted halberds of Kossinna's Type II, and clearly imports from the Brandenburg-Mecklenburg area. O Riordain regarded most of the remainder as

local derivatives of the Irish halberds; but another view is possible, and I think more probable. Two (Nos. 21 and 23) have blades which in form are strongly reminiscent of the blades of metal-hilted daggers of Uenze's Oder-Elbe type; the incised decoration of No. 21 from Denmark (without exact provenance) recalls that of the halberds from Hitzdorf (Uenze, 1938, *Taf.* 48: 122) as well as the dagger blades; No. 23 from Kogtved Mose with its grooved edges, six rivets in a shallow arc, and narrow midrib expanding at the hilt end, evidently belongs to the same class. These also are likely to be imports to Denmark from North Germany. No. 21 has on its otherwise flat blade two narrow curved converging ribs, a highly uncommon feature; it is, however, paralleled closely on a Central German halberd from Gross Schwechten, Kr. Stendal (Von Brunn, 1959, 58, *Taf.* 36: 6) and on the blade from Ford, Northumberland (which is probably itself an import into Britain from the Northern Unětice area; see below, p. 20).

Several other Northern halberds (O'Riordain's Scandinavia No. 3, 18, 20, 22) have what O'Riordain terms an 'outsplaying midrib', with markedly concave sides. This type of midrib occurs on many wooden-shafted halberds from Germany (i.e., O'Riordain's Germany No. 2, 3, 15, 16, 18, 24, 25, 72, 75) and is employed extensively on metal-shafted halberds as well. Most of these are in Central Germany, but exported examples may be noted in Schleswig-Holstein (Bossee, Germany 24); on the Rhine (near Homburg, Germany 16) and in North Hanover (Suderburg, Kr. Uelzen: Zettler, 1941, 116 ff., *Taf.* IX). One example with a midrib of this type was found in Etruria (Italy 3). This form of midrib does not occur at all in Ireland, but is found on two specimens from Wales (Wales 2, 4). These appear to have been locally made; one has a slender rib down the centre of the wide midrib, a feature occurring only in the British Isles (similar narrow ribs occur on many looped spear-heads). It seems most likely that the 'outsplaying midrib' is of Central German origin, and that the halberds bearing it in Denmark, Italy and Wales are derived from that quarter, by importation and imitation.

On the whole it is probable that most or all of the Danish and South Swedish halberds of O'Riordain's 16–26 group are imports from Central and North Germany.

All the halberds found in Denmark and South Sweden are stray finds, and therefore not directly datable. They are conventionally assigned to the Passage Grave period (Northern Middle Neolithic), but without substantial grounds.

Flint halberds occur in Denmark in the Middle Neolithic period, and Broholm regards these as imitations of the imported metal ones (DB II, p. 19); but Glob has since shown that the flint halberds were already in existence in the Danish Early Neolithic, occurring in the early settlement sites such as Barkaer (DO II, Nos. 118–21; references cited p. 23). Thus we must admit with Glob the possibility that the ancestry of the Danish flint halberd is to be sought in the Mesolithic flint picks, or place the beginning of the Irish halberd export at an improbably early date.

The distribution of Type 4 halberds in Northern Europe however, suggests very strongly that they were brought there in exactly the same manner as the flat or low-flanged axes of Irish type; and this assumption from the practical identity of our Maps I and II is supported by the evidence of the hoards to be discussed below. It would therefore seem probable that the halberds as a group belong to the Northern Late Neolithic, along with the axes (cf. Chapter II).

2. *The Northwest Continental Group*

Halberds of Type 4 found in the Northwestern Continental area included, according to O Riordain, three from the Netherlands (two, allegedly, from Wageningen, one from Nijmegen) and one from Westphalia (Upsprunge, Kr. Büren; republished by Sprockhoff, 1941, *Taf.* 32: 2). These were, in O Riordain's view, very much alike, and differed from Irish Type 4 halberd in that they had notches instead of holes for the rivets. Notches were not entirely unknown on Irish halberds, but were more characteristic of the Central German ones. O Riordain thus regarded the Wageningen, Nijmegen and Upsprunge halberds as being very closely related to the Irish series, but probably not of Irish manufacture. He did not venture to suggest where they might actually have been made, but believed that they represented at any rate an Irish influence, coming by way of southern Britain, and that they could be taken to represent links along the route from Ireland to the Elbe-Saale region, by way of the lower Rhine.

Of these four halberds, only two seem to exist in actuality. The alleged Nijmegen halberd (O Riordain's Netherlands 3) appears to be quite unknown to the Leiden museum (information from Prof. H. Brunsting); it is not actually mentioned in the Janssen catalogue cited by O Riordain, nor in the Holwerda catalogue of 1908; nor could any Dutch prehistorian be found who had ever heard of it.

In the *Zeitschrift des Vereins zur Erforschung der Rheinischen Geschichte und Altertümer in Mainz* IV, 1893–1905, p. 342, we find under the signature of P. Reinecke:

'Im Römisch-Germanischen Centralmuseum wird ferner ein Abguss einer . . . unsymmetrischen Schwertstabsklinge aus Holland (wohl von Nymwegen) aufbewahrt (Original im Museum zu Leiden).'

No further details are given. One is inclined to suppose that the halberd cast in question must, if derived from Leiden, be a copy of the Wageningen halberd discussed below, which is the only specimen which is known to have been available in Leiden for copying, and with which the drawing given by O Riordain as the 'Nijmegen' halberd agrees well enough in outline.

Again, of the two halberds allegedly present in the hoard from Wageningen (O Riordain's Netherlands 1 and 2), one specimen (fig. 1: 1) is certainly not a halberd at all, but a triangular dagger, with a hilt-plate admittedly shaped deceptively like those of some halberds.

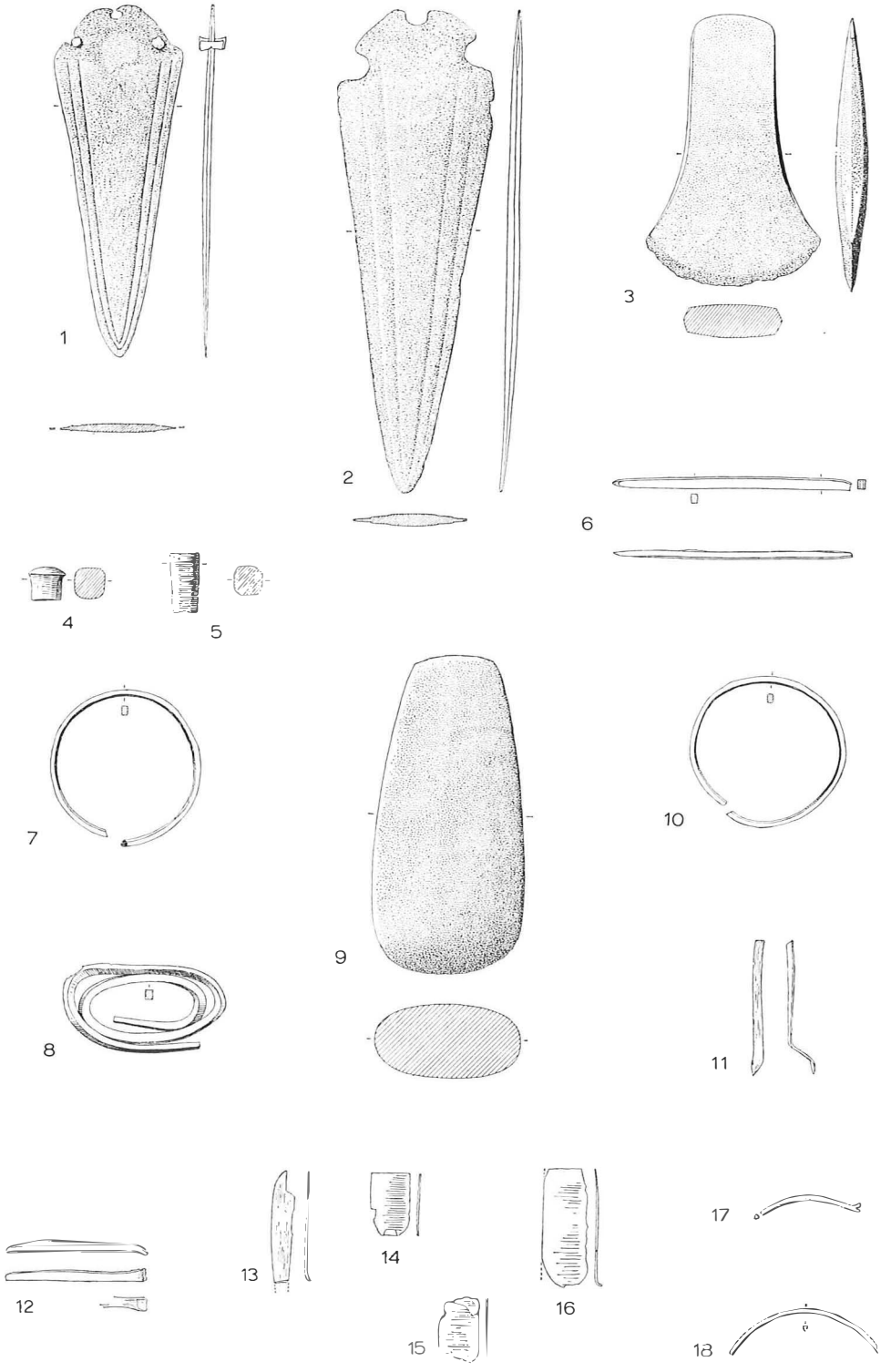

Fig. 1. Hoard from Wageningen, Gelderland. All objects of copper or bronze except 9, of stone. RMO Leiden. 1 : 3.

The second is equally certainly a genuine halberd. This find we must discuss in detail below. Two halberds are therefore to be deducted from O Riordain's list. Happily, they can be replaced by two other specimens: one a recent find at Roermond, Limburg, in the Netherlands (fig. 2) and the other an older find recently illustrated, from Wichelen, Prov. Antwerp, Belgium (Pl. I*a*)[1].

The Roermond halberd (fig. 2) is a fine Type 4 specimen, a foot long (29.4 cm), and very similar to O Riordain's Scotland 5, and to the Irish-type halberd in the Dieskau hoard (Pl. I*c*). It was dredged from the River Maas in 1957.

The Wichelen halberd is also a large one (present length 31 cm); the hilt-plate is damaged, and it was originally slightly longer. It has a broad midrib. There were four rivet-holes, arranged as a trapeze, on what was apparently a slightly narrowed hilt-plate. This rivet arrangement, if original, would relate the Wichelen halberd to the larger examples of O Riordain's Type 2 (1936, 245, fig. 42); yet in size the halberd is comparable to those of Types 4 and 6. It is the only halberd of Irish type on the Continent which is not assignable to Type 4.

Wichelen, on the Scheldte, has been productive in finds of bronze implements dredged from the river there; a British basal-looped spearhead is also attributed to this find-spot (see Chap. V).

The Wichelen halberd and the Irish decorated Class I axe found near Ghent (see p. 37) constitute a little 'Scheldte group' of Irish Early Bronze Age exports.

The Wageningen halberd comes from the hoard (fig. 1) which is discussed and illustrated by O'Riordain (1936, 239, fig. 37). Unfortunately he did not see the original objects, and his illustrations are redrawn from very poor drawings in the original publication (Pleyte, 1889, Pl. IX); some of the objects have quite altered their character in this process. In view of the unusual character of the find and the rarity of halberd associations in Western Europe it is worth describing in some detail.[2]

The objects were discovered in 1841 by a man digging trenches for planting trees in a field. The account explicitly states that they were found together; and their uniform patina and the rarity of the types in the area, plus the chronological homogeneity of the find, make it extremely unlikely that the find could represent anything but a single deposit. A stone axe of plump cross-section is included in the find. But the 'beaker-shaped small vessel' mentioned by Pleyte and O Riordain is unknown in the Leiden Museum, not mentioned in its register, and indeed nowhere shown by any record whatsoever to have formed part of the find in question.

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[1] We are grateful to Professor C. F. C. Hawkes for details of this find, and for a copy of the drawing given to him by Mme. Faider, Curator of the Mariemont Museum, in 1948.

[2] I am greatly indebted to Prof. Brunsting and to Dr. W. C. Braat of the Rijksmuseum van Oudheden in Leiden for information regarding this find.

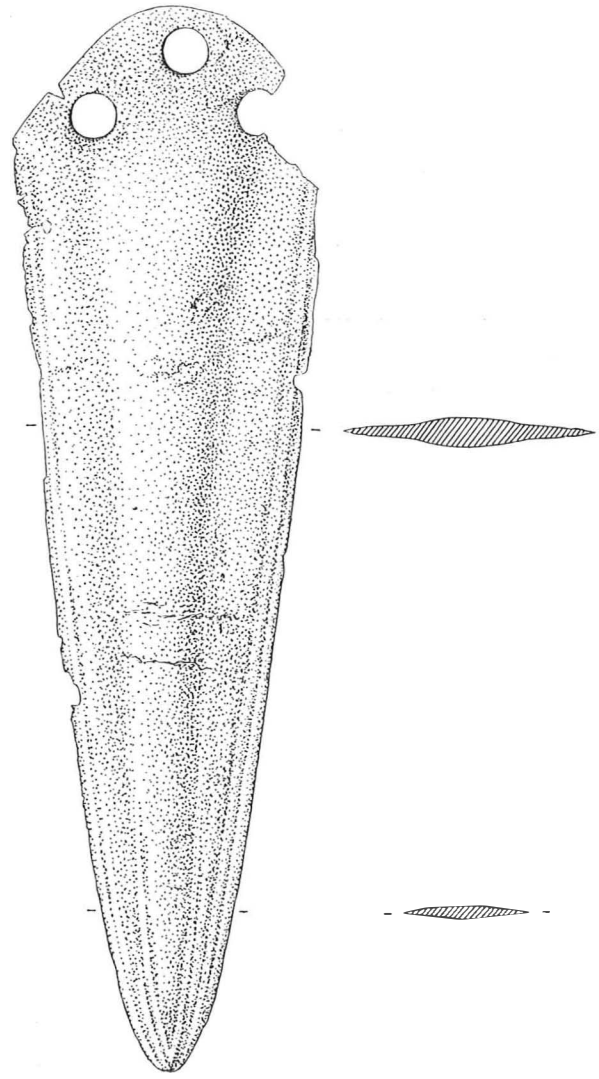


Fig. 2. Halberd from Roermond, Limburg. 1 : 2. After Glasbergen and Butler.

The 'bronzes' (the metal has not yet been tested) are as follows:

1. A small triangular flat dagger, thinning by steps toward the cutting edge; with a semi-circular hilt-plate not quite so large as the base of the blade, with three small rivets. It resembles an unpublished specimen from Singen.

A similar hilt form occurs on some Irish-type halberds; which no doubt accounts for O Riordain having erroneously described the Wageningen dagger, from the poor illustration, as a second halberd. The edges are double-outlined, a feature

seen on many halberds. *e.g.* that from Roermond, and on the tanged dagger from Faversham.

2. A small halberd of O Riordain's Type 4; the flat central portion, steps echoing the cutting edge, and three large notches for rivets being its main features.

3. A small broad flat axe, with slightly convex faces and a medial ridge down the sides. It belongs to the Irish 'thin-butted' faceted type (cf. Coghlan and Case, 1957, 91 ff., fig. 2, no. 25, which is of CC Group I–JSS Group E 11 copper).

4. A thick, faceted halberd-rivet, resembling those found on some Irish-type halberds; only one head has been formed.

5. Blank for a similar halberd-rivet; neither head has been formed.

6. A narrow punch or tracer, with square section. Parallels are difficult to find in our region; similar objects seem, however, to be common in the Iberian peninsula and in southern France (cf. Junghans, Sangmeister and Schröder, 1960, *Taf.* 19, 20, 25, 26, 27, 28, 29).

7, 10. Two simple thin penannular bracelets with square section. Simple bracelets in Scottish Early Bronze Age finds (Inventaria, GB. 26, 27, 31, 34) are thicker, and of D, oval or round section, and thus not directly comparable. But similar bracelets seem to be known in Iberia and South France (cf. Junghans, Sangmeister and Schröder, 1960, nos. 508, 811).

Further, there are several small fragments of bar and sheet bronze; among these is one roughcast bar, bent into the form of an irregular spiral.

The peculiar importance of the Wageningen hoard is that it combines objects certainly of Irish type (axe, halberd) with unfinished rivets, at least one tool (the punch), an ingot bar, and scraps of sheet and bar metal. This combination strongly suggests that the owner was a metal-worker; he could well have been one of those itinerant Irish smiths postulated by O Riordain and by Megaw and Hardy.

If such smiths were working in the Lower Rhine area, along the route of contact between Ireland and Saxo-Thuringia, it would be natural to suppose that some of the other halberds found along the route were made by them.

Mention must also be made of the halberd found at Apeldorn, Kr. Meppen, in the Emsland, which is typologically difficult to associate directly with the Irish series. It has five small rivets arranged in a shallow arc; its outline relates it to those Danish and German specimens which are related in turn to metal-hilted daggers. Its curved ribs in trident form are rather to be related to those occurring on Central German halberds like Gross Schwechten and Burk than to the straight-multiple-ribbed British (Arreton Down, ABI fig. 306) or Italian (*e.g.* Loreto Aprunito, Uenze, 1938, *Taf.* 11 : 37b) Early Bronze Age daggers. The Meppen halberd is to be reckoned as a Unětice export, not an Irish one. It is assigned to JSS metal group A. A related blade from Northumberland is cited below (p. 20–1).

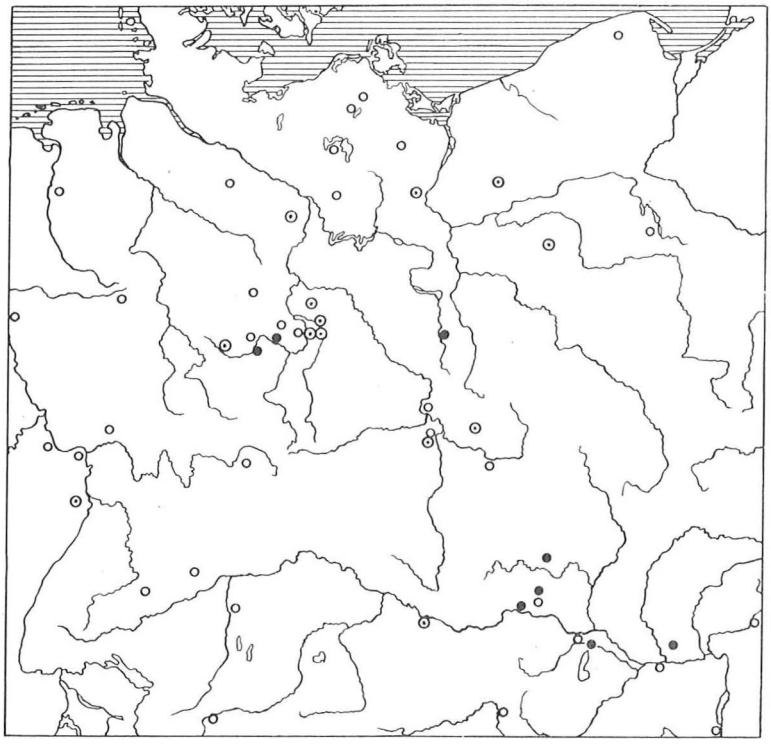
3. *The Central and North German Halberds and their British-Irish connections*

The only halberd found in the area of the Saxo-Thuringian Early Bronze Age which O Riordain identified as being very close to his Irish Type 4 is the one in the Dieskau II hoard discussed below (p. 34–5; Pl. I*c*). O Riordain thought it an imitation rather than an actual Irish export, for reasons not clearly stated. To the present writer it seems no less Irish in appearance than the Scandinavian halberds which O Riordain accepted as Irish exports. Its metal analysis suggested Central European copper to Otto and Witter (OW 303); but it is assigned to JSS Group E 01; to the same group, oddly enough, as the Irish axe present in the same hoard (three halberds of purely Central German form (OW 200–2) also present are likewise of Group E 01. There is also a halberd present in the Dieskau hoard which is of the 'Irish' Group E 11, but this (OW 385) is a metal-shafted German specimen!). Although other halberds of purely Irish form are unknown in Central Germany, there are further specimens (O Riordain's Germany 2 to 18 plus others in neighbouring lands) which are broadly similar to the Irish type 4. These include specimens from the Rhineland (Rhine near Mainz; near Homburg; Bacharach; the first of these is of JSS Group E 01 metal, the second of JSS Group C3), but generally similar blades are to be found, if somewhat rarely, throughout the Central European area.

O Riordain knew no evidence for the exportation of Central German halberds to the British Isles. Soon after publication of his halberd paper, Piggott (1938, 84–5, Pl. IX: 2, fig. 8: 18) called attention to the occurrence in no less than three Wessex Culture graves of pendants made in the form of miniature halberds; two of them possessing ribbed shafts (cf. Stone, 1958, Pl. 54 and 57). Piggott specifically compared them with the metal-shafted halberds of Saxo-Thuringian type, and cited them as evidence of connections between the Wessex Culture and the Saxo-Thuringian area. Ap Simon (1954, 48 ff.) dated the graves in which the halberd pendants occur to his Wessex II. It has lately been suggested (Grinsell, cited by Ashbee, 1960, 109) that the 'very large weapon of twenty pounds weight, like a pole-axe' described by Stukeley as having been found in a tumulus near Amesbury, Wilts., may have been metal-shafted halberd. The weight seems rather excessive, and the description too vague to be relied upon as evidence for an actually imported metal-shafted halberd. Yet one example is known in Britain of a blade which may well represent a Central German halberd. This is an unpublished specimen from the Greenwell collection in the British Museum (inventory number WG 2064) from West Field Farm, Ford, Northumberland (mentioned by Evans, ABI p. 244). Evans grouped it with daggers, but the blade is sufficiently asymmetrical, with a slight curve, to show that it was a halberd. It possesses two curved ribs on the blade, in the manner of the Central German specimens from Gross Schwechten,

Burk and 'Denmark'. The hilt-plate is unfortunately damaged, and some notches toward the top are certainly secondary. The Ford blade may well be an actual import. The ribs appear to have been outlined in pointillé, as with some British multiple-ribbed daggers; the latter have, however, straight ribs.

Though the Ford blade stands alone, there are a number of native-looking halberds in the British Isles which have features evidently borrowed from Central Europe. Well known are the two Irish specimens (Breaghwry, Co. Mayo: O Riordain, 1936, p. 321, fig. 70; Coghlan and Case, 1957, no. 63; of Type 6; metal, CC Group I–JSS Group E 11) and 'Ireland', O Riordain's No. 109, of Type 5) with capped rivets – a type of rivet otherwise practically unknown in the British Isles, but commonly used on the Continent. Further, there are three halberds, two in Wales (mentioned above, p. 14), of Type 4, and one from Scotland (Falkland, Fifes., O Riordain's Scotland 2, also of Type 4) which have 'outsplaying' midribs, as do many Central German halberds. From these we can be sure that at the time that



o Stray find; • grave find; ⊙ hoard.

Fig. 3. Distribution of halberds without metal shafts in the broadly Central European area. Adapted from von Brunn, 1959.

halberds of Type 4, 5 and 6 were being made in the British Isles the smiths were familiar with the appearance of Continental specimens. The halberd connections between the British Isles and Saxo-Thuringia were certainly not entirely a one-way affair; one may reasonably conclude that there was a halberd exchange between the two provinces, even though it is difficult to find any significant number of actually traded specimens.

Various writers (Ap Simon, 1954, 40; Raftery, 1951, 143 ff.; Coghlan and Case, 1957, 102–3) have expressed doubt that Ireland was the original home of the halberd family here discussed, preferring a Saxo-Thuringian or Italian origin; yet Central German writers continue to speak of the a 'Western European' origin of the halberd. Formally, O Riordain made out a case for an Irish origin which the opponents of the idea have not refuted in detail. The chief strength of the O Riordain theory is that there are six types of halberds in Ireland, of which types 1 to 5 can be viewed as a sequence of development, three of which are allegedly earlier than the period of contact with Northern and Central Europe; whereas in Central Europe all halberds are thought to belong to one horizon, that of the developed Unětice culture, and local prototypes have not been claimed.

It is interesting to notice, in this respect, that Hajek (1953, 202, 210–11, 214, fig. 2: 10–11) calls attention to the occurrence in a Unětice grave in Moravia (Horni Hunajovice, Grave XIX; No. 35 in the list of Von Brunn, 1959, 74) of a halberd, small and without a midrib, which is every bit as primitive-looking as the halberds of O Riordain's type I; it is nothing more or less than a simple triangular dagger which has gone asymmetrical. Such a find might well be used to support the idea of a Danubian origin for the entire European halberd development.

And it must be admitted that there is not one single association of any kind to confirm the early dating of the three 'primitive' types of O Riordain; so that one is theoretically free to regard them as debased products of an inferior technology rather than as prototypes. Halberds of Irish type 4 would then be the local type (some of which were exported) directly derived from the simpler of the Unětice types of halberds; type 3 simply smaller versions of the same; and types 1 and 2 (which are rather rare) the crude local products of poorly trained or equipped smiths. Type 5 is an obvious development from Type 4, being only more elongated and curved. The existence of a hybrid specimen of types 2 and 5 (O Riordain's no. 12) is in itself a warning against accepting O Riordain's typology as a chronological series! The metallurgical evidence, as marshalled and analysed by Junghans, Sangmeister and Schröder (1960), shows that the metal of which many Irish halberds of Types 2 and 4 are made is indistinguishable from Central European metal of their Group B 2; some British Beaker daggers are also of this metal, whereas thick-butted axes are not, and neither are halberds of Type 5. In Central Europe, B 2 metal had a limited period of use, and this appears also to be true in

the British Isles; the contemporaneity of Types 2 and 4 halberds is therefore evident.

At Faversham in Kent, an Irish halberd of Type 4 may possibly have been associated with a 'West European' tanged dagger; (the tang on this dagger is comparatively small and the blade large and well made, while its shoulders are rather angular; so that one might think of this specimen as being some distance along the way of development toward a Breton-Bush Barrow dagger). Both these Faversham objects are assigned to CC Group III (Coghlan and Case, 1957, no. 97–8; O Riordain, England 2, 3) and JSS group F 1 (Alpine metal), as are many other objects from Brittany, southern England and the Netherlands. Apart from this, all known halberd associations in the British Isles point to a date of Wessex I or later.

The best Irish association is the hoard from Killaha East, Co. Kerry (O Riordain, 1946, 153, Pl. XII). This hoard contained a halberd assigned to O Riordain's Type 6; flat axes of Raftery's narrow-butted type; and a dagger with two rivets, blood grooves and a languette. The dagger is related by its grooves and languette to the Breton and Bush Barrow daggers which characterize Wessex I. Since these daggers are in turn derived from Uenze's Oder-Elbe daggers, which belong chronologically to the Leubingen-Dieskau phase, the Killaha hoard cannot be earlier than that phase. That flat axes of the Killaha type can be contemporary with decorated axes of the type found in the Dieskau hoard is confirmed by the Willerby Wold deposit (Megaw and Hardy, 1938, 283–4). We have therefore an effectual cross-dating between the Killaha stage in Ireland, Wessex I in Britain and the Leubingen-Dieskau *Fürstengräber* stage in Saxo-Thuringia. Halberds of Types 6 and 4 may be contemporary, as is shown by a find of one halberd of each type at Towyn in Merioneths. (O'Riordain, Wales 5–6; Grimes, Guide, 1951, No. 526, fig. 57: 3, 4). Other halberd associations in the British Isles provide no support for a pre-Wessex dating. The often-illustrated find from Birr, Offaly (Ireland 84) was treated by O'Riordain as an unreliable association; and even if it were a genuine hoard, it is clear that the halberd itself (Type 5) is not an early one, and the flat axes are also developed types (Cf. Migdale hoard, Inventaria GB. 26; Butterwick, with Food Vessel, BM LPA fig. 15). The same is true of the uncertain hoard from Sluie, Morays., with a Type 6 halberd and two flat axes (Scot 17); a Wessex I date is suggested by Piggott and Stewart (*Inventaria* GB. 30). The Islay, Argylle and Stoke Ferry, Norfolk hoards with Type 4 halberds contained Late Bronze Age objects. The grave finds are not likely to be pre-Wessex. At Moylough, Co. Sligo, (Ireland 92) a Type 5 halberd of bronze (CC Group II–JSS Group E 00!) was found in a stone cist with a decorated cover-slab, accompanied by a cremation. In Scotland damaged probable halberds of unidentifiable type were found in cist graves at Bishopsmill, Elgins (Scot 20), presumably with an extended skeleton in a boat-shaped cist, body

covered with oxhide, and Craigsgorrie near Beauly, with an extended skeleton, barbed and tanged arrowheads and a flint knife. Childe (1946, 119, i and ii) assigns both the Scottish burials to his Period IV on the basis of the grave form.

The case for an Italian origin for the halberd rests on finds belonging to the Remedello horizon. Forssander has emphasized the grave from Villafranca near Verona (Ghislanzoni 9 ff.; Forssander, 1936, 44 ff.) with its copper halberd, silver crutch-headed pin, and silver lunula, which he regarded as contemporary with the Northern Passage Grave period. O'Riordain also cites the grave from Rinaldone (p. 235, fig. 34) which belongs to the same horizon as Remedello. One might suppose that the halberds north of the Alps are ultimately derived from these; but some would reverse the process and derive the Italian halberds from Central Europe. The hoard from Montemerano (O'Riordain 234, fig. 33) with its more developed halberd which O'Riordain thought 'presents a very Irish appearance' (and indeed is of JSS Group E 11 metal, their No. 617), includes a full Bronze Age flanged axe and the fragment of a three-ribbed dagger blade (also of E 11 metal, JSS 616) which Uenze claims as belonging to his Italian type of metal-hilted daggers (Uenze, 1938, *Taf.* 9: 34). The hoard therefore belongs to the same period as Dieskau; its three-ribbed dagger may well have influenced the Arreton Down type of British three-ribbed dagger.

Taking all these factors into account, one could conclude that:

a. the earliest Irish halberds are not demonstrably a product of the Chalcolithic wave of contacts along the Atlantic route; on present evidence we should regard them rather as being copies and derivatives of the Central European halberd blade;

b. the Unětice halberds may be derived from, or parental to, those of Northern Italy;

c. the 'primitive' Irish halberds (Types 1 and 2 and some of Type 3, which have in common the four-riveted rectangular hilt-plate which is not found on other European halberds) are probably a local debasement or improvisation by not fully competent smiths, rather than prototypes;

d. development of the Irish industry under the stimulus of Unětician models, and perhaps metal imports, led to the attainment of an exporting stage, during which migratory smiths and traders brought modified halberds and Irish axes which could compete with the Central German products to the Netherlands and South Scandinavia. This trade perhaps lasted into Wessex II, as we suggest below in connection with the axes.

Whether there were two distinct phases of contact between the British Isles and Saxo-Thuringia, the earlier phase just preceding the rise of the Wessex Culture, the later during its developed stage is not clear from closed finds but continuous contact throughout the period seems to be implied by the metallurgical evidence. What does seem clear is that the Irish bronzesmith of the Early Bronze Age had

nothing to teach to the highly accomplished metallurgists of the Saale Valley, except possibly the proper use of tin; but otherwise had a great deal to learn from them. It is easy to imagine Irish, Wessex or Breton smiths making a pilgrimage to the Saxo-Thuringian workshops to learn some of their technical secrets. Bearing in mind that the ordinary wooden-shafted halberd is a simple implement, it is hard to believe that the smith who could make a metal-hilted dagger needed to be taught to make halberds by the West!

LIST OF HALBERDS OF IRISH TYPE IN NORTHERN EUROPE

(*cf* Map I)

This list is based on that of O'Riordain (1936, 313, ff; cf. also Forssander, 1936, 95 n. 3, and Broholm DB I, 206), with additions for the Low Countries, and more recent references. Spelling of Scandinavian place-names follows Broholm and Forssander. The number of the halberd in O'Riordain's catalogue is given in brackets following the serial number.

Denmark

1. (Scand. 6) *Asperup* s., Vends H., Odense Amt, Fyn. Bog find. NMC B. 1938; S. Müller, *Ordning* fig. 155; DO II 273.
2. (Scand. 9) *Nørre Esterbolle*, Sandager, Gislev s., Gudme H., Svendborg Amt (Fyn). NMC B. 6676.
3. (Scand. 4) *Pederstrup*, Ballerup s., Smørum H., Copenhagen Amt, Zealand. NMC B. 5118.
4. (Scand. 5) *South Zealand* (no exact provenance). NMC B. 5614.
5. (Scand. 13) *Skalsaadalen*, Hvornum s., Onsild H., Randers Amt, Jutland. NMC B. 6469.
6. (Scand. 8) *Sønder Aldum*, Stenderup s., Hatting H., Vejle Amt, Jutland. Mus. Aarhus, 1081. *Aarb.* 1909, fig. 1.
7. (Scand. 3) Denmark.
8. (Scand. 2) Denmark. NMC. Montelius, *Chron.*, fig. 208.
9. (Scand. 10) Denmark. NMC.

Sweden

10. (Scand. 1) *Dagstorp*, Harjagers H., Skåne. SHM 12608. Montelius, *Minnen* 824.
11. (Scand. 14) *Gessie*, Skåne. Mus. Lund, 21027. Forssander, 1936, *Taf.* XIX : 2.
12. (Scand. 15) *Stangby Mosse*, Skåne. Mus. Lund, 4463. Forssander, 1936, *Taf.* XIX : 1.
13. (Scand. 7) *Stakagården*, Länshem, Kinds H., Västergötland. Mus. Göteborg, 45042.
14. (Scand. 11) near *Malmö*, Skåne. SHM 2109 : 567. Montelius, *Minnen* 826.

Germany

15. (Germany 5) *Dieskau* (hoard II), Saalkr., Saxony. Pl. I*c*. Förtsch, 1905, 25, *Taf.* 4 : 1; O'Riordain, 1936, 211–14, fig. 13; Jahn, 1950, 82 ff., with further references (there Hoard I); Von Brunn, 1959, 55–6, Taf. 17; 2. OW 303 (JSS Group E01).
16. (Germany 2) *Upsprunge*, Kr. Büren (Westphalia). O'Riordain, 1936, fig. 63 : 1; Sprockhoff, 1941, *Taf.* 32 : 2 (photo).

Netherlands

17. (Neth. 1) *Wageningen*, Gelderland. Hoard (see p. 17). Fig. 1. RMOL. Pleyte, 1889, 49, Pl. XI: 5–9; O'Riordain, 1936, 239, fig. 37; Butler, 1959, 126 ff., fig. 1; de Laet and Glasbergen, 1959, Pl. 26 (photo); *Inventaria* NL. 11. Length 21 cm.
18. *Roermond*, Limburg. Pvt possession. Fig. 2. Glasbergen and Butler, 1961, 55–7, fig. 1. Length 29.4 cm.

Belgium

19. *Wichelen*, Prov. Antwerp. Mus. Mariemont. Pl. I*a*. De Laet and Glasbergen, 1959, Pl. 30. (Not of Type IV; not mapped).

CHAPTER II

FLAT AND FLANGED AXES

(List, p. 45–7; Pl. I–IV; fig. 4–8; Map II)

In the earlier part of the Bronze Age, the axe was the most important article involved in the trade in metal-wares between the British Isles and the northern part of Europe. The axe was not only a basic tool, but often also a weapon, and not infrequently an object of magical or religious significance besides. For the men of the Early Bronze Age, an axe was surely the most useful form into which a half pound or a pound of metal could be converted; and it is not surprising that it should have been the most important trade item.

A widespread trade in axes of flint and stone originated in the Neolithic period, and certainly continued through the Copper Age. Thick-butted copper axes were widely if unevenly disseminated throughout Europe in the first half of the second millenium; mainly, it seems, from centres in southeastern and southwestern Europe (Junghans, Sangmeister and Schröder, 1960). At precisely which point Ireland (cf. Coghlan and Case, 1957) and Saxo-Thuringia became producers of copper axes, and what part these two centres played in the supply of such axes to other areas within Northern Europe, remain to be clarified. The typological insensitivity of early copper axe forms tends to pass the problem on to the spectro-analyst. Thus a few of the thickbutted flat copper axes from Ireland which have been analysed (CC 28, CC 41–2) have been assigned to JSS Group B 2, which should imply a Unětice origin (whether Saxo-Thuringian or farther south not being specified) for the metal in these specimens. These incline to support the Coghlan and Case hypothesis (1957, 100 ff.) that Irish metallurgy was derived from the Saxo-Thuringian area; for the axes had hitherto been the weakest link in this hypothesis. Yet two flat axes from the Rhineland (Rhine-Hessen, OW 1078, and Mombach near Mainz, OW 1084) are assigned to the Irish JSS Group E 11, so that there may also have been early copper exportation in the other direction. It is interesting to notice, in this connection, that two of the narrow-perforated copper double axes found in the Rhine region – Kochem (Mosel), OW 1077, and Zimmern in Baden-Württemberg, JSS 479, are also assigned to Group E 11. Such metal double-axes (cf. Hawkes, 1942) may in the Rhine region bear ornament (fig. 7: 1) not entirely dissimilar from that found so commonly on Irish axes; so that the idea of influence one way

or the other is perhaps to be entertained seriously. The double-axes in question are a link between the Rhine and Saxo-Thuringia; unfortunately they are not exactly dated, though an Aeneolithic or Early Bronze Age date, at any rate earlier than the Saxo-Thuringian hoard-horizon, is presumed (Von Brunn, 1959).

Apart from the Rhenish specimens mentioned above, Irish thick-butted axes have not been identified in the North German area, where a comparatively high proportion of the available specimens have already been tested spectrographically; nor in the South Scandinavian region, where comparatively few analyses are yet available. There is thus little evidence for an Irish copper axe export trade across the North Sea in the period when thick-butted axes were in use.

In the Early Bronze Age proper, there is evidence for a west-to-east trade of variable importance in five basic types:

a. developed flat axes (*i.e.*, the Irish thin-butted type);

b. axes with low side-flanges. The flanges are generally only a millimetre or two high, and could easily have been made by hammering. We prefer to call these *low-flanged axes* rather than hammer-flanged axes, because the height is easily verifiable, whereas the technique actually employed is often far from obvious. Decorated axes of Megaw and Hardy's Class I may be flat or lowflanged.

c. axes with high sideflanges, normally made in the casting; hereinafter called, in any case, *highflanged axes.* Megaw and Hardy's decorated axes of Class II and III are contained within this group; which proves, however, to be of little importance for our present study.

d. highflanged axes with stopridge. What Evans called a 'doubly tapering' axe, or with what is sometimes called an 'incipient stopridge', is not here intended, but only axes with a distinctly raised transverse rib in the centre. The German term for these, *Stegbeil*, might usefully be rendered into English as *stopridge axe.* The term 'palstave' should be reserved for axes which are distinctly thicker below than above the stopridge.

e. haft-flanged axes have recently been distinguished by M. A. Smith (1959, 171–2 fig. 6: 1–4). These are high-flanged axes with the flanges extending only part way down the blade. (Her fig. 6: 2 we should call a haft-flanged stopridge axe; but it is difficult to see why one should not retain the term 'palstave' for her fig. 6: 3 and 6: 4).

A. DEVELOPED FLAT AXES

Forssander (1936, 51) claimed four flat axes of distinctively Irish form in South Scandinavia. Two are from Denmark: Fredsø on the island of Mors in the Limfjord and Mosgaard (Taarup s., Fjends H.) on an arm of the Limfjord (Hjarbek Fjord), and two from Scania, neither with exact provenance. They have a moderately expanding blade and gently curved sides.

The most convincing of these is the axe from Fredsø (Pl. II*a*), with its gracefully curving sides, slightly rounded butt and convex faces; it certainly stands out as a unique specimen in the Copenhagen collection, and is very similar to the small Irish axes such as that from Clonoe, Co. Roscommon (*NM Ireland Annual Report*, 1931–2, Pl. 5: 7). Another axe of very similar form, but slightly larger and with faceted sides, is known from the Netherlands, in the hoard from Wageningen, near the Rhine at the edge of the Veluwe (fig. 1), which was described in Chapter I (p. 18). It also rather closely resembles the CC Group I–JSS Group E 11 copper 'thin-butted faceted' axe from Icklingham, Suffolk (Coghlan and Case, 1957, no. 25, fig. 2). An axe of very similar outline was found at Düsseldorf in the Rhineland, if the illustration by Osborne (1887, 64, *Taf.* VIII: 11) is to be relied upon.

These flat axes are a variant of the thin-butted type represented in Scottish and Irish Early Bronze Age hoards (Migdale, *Inventaria* GB. 26: 1, 2; Auchnacree, *Inventaria* GB. 27: 1–5; Colleonard, Inventaria GB. 29; Sluie, *Inventaria* GB. 30; 2, 3; Port Murray, *Inventaria* GB. 31: 2, 4, 5; Birr, Coffey, 1913, 7–8). Associations include halberds, flat riveted daggers, and penannular rings (types also represented in the Wageningen hoard, though the rings at Wageningen are thinner and of square section). The Colleonard hoard includes decorated axes with 'rain' pattern, which show that whole group can be contemporary with the Willerby Wold-Dieskau group of Class I decorated axes discussed below (p. 30 ff.).

The Mosgaard axe is almost squarish, with very slight blade expansion; its sides are faceted (Broholm, DB II, Pl. 2: 3). Although both it and the Fredsø axe are stray finds, their location along the Limfjord route, in the amber district of North Jutland, is a valuable indication for the use of this route for trade with the British Isles. The two Scanian finds are according to Forssander (1936, 51, *Taf.* II: 5) related typologically to the Mosgaard axe, but lack the faceting (Forssander, 1936, *Taf.* II: 5). The dating evidence for these axes is to be derived from Wageningen, Migdale and Colleonard, none of which suggest a date earlier than the decorated-axe-and-halberd trade to be discussed below.

A different form of flat axe, more elongated and comparable in outline with some decorated axes of Megaw and Hardy's Class I, but in this case having neither flanges nor decoration, is represented in the Pile hoard in Scania. This axe was long ago claimed by Montelius (1900, 56, *Abb.* 54) as an import from Ireland; basing his judgment not only on the form but on the metal analysis, which showed high tin (10.8 %), whereas the local imitations, the axes now called the Pile type, were of copper rather than bronze. (This is presumably the axe identified in SAM I (142, 154) as O 55/9, Stockholm Museum 3311, which is assigned to metal group F 2, 'Alpine copper').

The Pile hoard is the well-known one, containing imported Unětice objects from Bohemia or Saxo-Thuringia together with locally made Pile axes, and forming

a key find for comparative chronology in Northern Europe. Since Forssander (1936) it has been dated to the Northern Stone Cist period, or as we should now say, the Northern Late Neolithic.

Decorated flat axes may best be discussed together with lowflanged decorated axes; both types together forming Megaw and Hardy's Type I.

B. DECORATED FLAT AND LOWFLANGED AXES

In their detailed study of Irish and Continental decorated axes (1938, 272 ff.) Megaw and Hardy demonstrated that Irish axes were traded to the Continent in the Early Bronze Age, and that these exercised a considerable influence on the early metal industry of Northern Europe.

Two decorated lowflanged axes were found with two plano-convex flint 'slug knives' (a type generally associated with the Food Vessel culture) in a bog hoard at Derryniggin, Co. Leitrim (*JRSAI* LXXXVIII, 1958, 143–5, fig. 10).

The decorated axes found in Northern Europe included some specimens which were so similar to Irish examples (cf. also the additional Irish specimens, JRSAI XCI, Part I, 1961, 73 ff., figs. 13–15, and the Colleonard hoard, *Inventaria* GB. 29) that they were to be presumed to have actually been made by Irish smiths – either in Ireland itself, or, it was suggested, by itinerant Irish smiths working on the Continent. There were also specimens which differed in some respects from the Irish standard, and were to be interpreted as local imitations; and there were also hybrid axes which were certainly non-Irish in form, but which bore decoration more or less closely imitating that found on the Irish axes.

These three varieties of Irish or Irish-influenced axes are – it should be stressed – rather rare compared to the numerous group of 'Pile axes' defined originally by Forssander (1936). These are low-flanged axes which approximate to the form of the Irish axes (but are rather thicker than the Irish ones), and which may imitate one type of Irish decoration (and one type only), namely a series of parallel arc-shaped grooves on the face. Many Pile axes are, however, undecorated.

Since the Megaw and Hardy paper was published, nothing has happened to alter their basic thesis; indeed, new discoveries, which are to be enumerated below, serve only to confirm it. It is, however, possible to amplify their findings in one important respect, namely to point to the existence of specimens in the Low Countries and western Germany which suggest a trade route not envisioned in their study.

In order to isolate the pattern of direct trade between the British Isles and

Northern Europe, it is necessary to distinguish the actual Irish products from the local imitations, and to map the former alone. The criteria for this were well stated by Megaw and Hardy; a certain subjective element in distinguishing between originals and imitations is perhaps unavoidable, but it is not so difficult to make this sorting out with the originals in one's hand as one might suppose from illustrations, and in practice there prove to be only a few specimens that remain in the doubtful class. Such doubtful specimens, mentioned below, we omit from Map II, the purpose of which is to show the distribution of those axes which can be taken, from their great similarity to known Irish and British specimens, to be actual trade-pieces.

The genuine Irish axes tend to be thinner than the imitations; the cutting edge is usually expanded outward in a manner uncommon on Continental axes. The decoration of the face may consist of tracer ornament or broad, shallow furrows arranged as arcs parallel to the cutting edge (the furrows on Pile axes are much narrower than those on the Irish axes). The Irish axes usually have a rounded butt; their sides are often decorated by cabling, hammered lozenges, or faceting.

Geographically the Class I decorated axes fall into two distinct groups; one in South Scandinavia, the other in the Low Countries, South Hanover and Central Germany.

The South Scandinavian group includes finds in North Jutland, the Danish Islands and Scania.

The only Jutland decorated axe regarded by Megaw and Hardy as of Irish workmanship is the one in the hoard from Gallemose (their R 262)[1], with tracer ornament on the upper part of its face and broad furrows on the lower. In size and form it may be grouped with the Connor-Selchausdal variety (cf. below). Chronologically the Gallemose hoard is equivalent to Pile; it contains Unětice products (massive penannular armrings) and axes of Pile type, together with one enormous flanged axe (comparable perhaps with the one from Lawhead in Scotland, *ABI*, fig. 20) and three peculiar and unparalleled bronze objects of uncertain use, described vaguely as harness objects.

A more recent find adds two axes of Irish manufacture to the Jutland list. They were found in the same field at Ulstrup, southwest of Randers on the Gudenaa river (Butler, 1955, 36 ff.), and may be regarded as a small hoard. Both are large axes, in size comparable to the largest decorated axes in the British Isles, and in form they resemble the Connor-Selchausdal group. The longer (29 cm), tracer-ornamented (Pl. III*b*), is quite typically Irish and needs no special comment. The other, only slightly shorter (fig. 4), may fairly be claimed as the masterpiece of

[1] R indicates the number in Megaw and Hardy's register of Decorated Axes, *PPS* IV, 1938, 298–307. Detailed references are cited in the list at the end of this chapter.

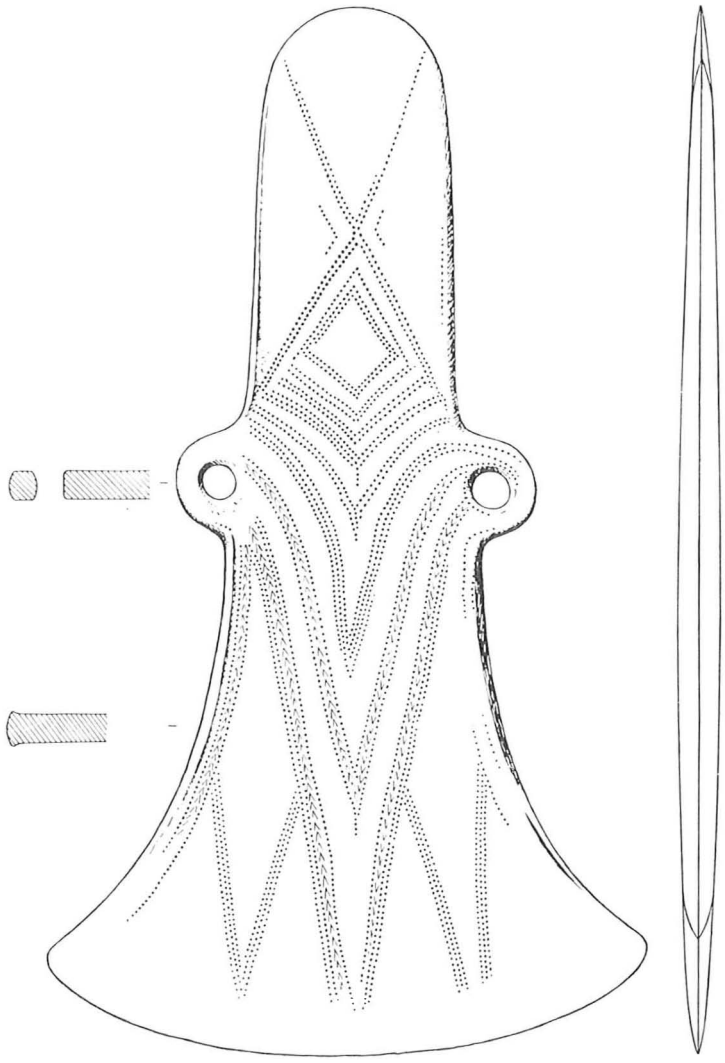


Fig. 4. The ornamented and sidelooped lowflanged axe from the Ulstrup hoard, NE Jutland. (= Pl. IIIa). 1: 2. Forhistorisk Museum, Aarhus.

the Irish axe industry. Its decoration, while done in a characteristic Irish combination of herringbone and *pointillé*, is the most elaborate known on Class I axes. But the pattern is evidently a further development of that on one of the two axes found together at Knockaun, Co. Waterford (Pl. IIc) and the agreement in outline, pattern and technique is so close that the Knockaun and Ulstrup axes may well be supposed to have come from the same workshop. But the most surprising feature of the Ulstrup axe is the possession of a pair of fine large side-loops. The loops

have flat faces, which are a direct continuation of the plane of the face; which distinguishes them typologically from the round-sectioned loops occurring on palstaves.

Loops comparable with those on the Ulstrup axe occur on a number of Irish specimens at home. Well known is the flat axe (very much smaller than the Ulstrup axe) from the Bell collection, now in the National Museum of Antiquities in Edinburgh, which contains finds from Northern Ireland, and mainly County Antrim (*op. cit.*, fig. 4; Evans, ABI fig. 107; we are grateful to Professor Stuart Piggott for details concerning this specimen). Another example, a small axe with pierced sidelugs, low flanges and cabled sides, comes from County Westmeath in Ireland (National Museum of Ireland, 1944: 197; we are grateful to Mr. Etienne Rynne for knowledge of this axe). There are also sideloops on the atypical highflanged axe with stopridge from Bryn Crûg, Caernarvonshire (Evans, ABI fig. 88), found in a grave with an interment, cinerary urns, a pin with bilobate head with three perforations, and a tanged knife or razor.

Thus the looped Ulstrup axe can be claimed as an Irish product; it represents a rare variant of the Connor-Selchausdal form, and was no doubt intended as a ceremonial axe. Typologically it ought to be late in the series; the decoration has features, such as large X's and triangles, found more often on Type III axes than on those of Type I (cf. Megaw and Hardy, 1938, fig. 3g, Pl. LI: 1); and the Bryn Crûg grave can certainly be no earlier than Wessex II. It might therefore be argued that the Ulstrup find is later than Gallemose, and perhaps as late or nearly so as the Virring hoard, which is assigned to Broholm's *Vor første metalkultur*, or Hachmann's *Horizont* II.

Ulstrup lies on the River Gudenaa; Gallemose and Virring are on opposite sides of the same river some 30 km upstream, near its mouth in Randers Fjord. We have suggested that the occurrence of these three hoards containing imported metalwork in the hinterland of the Randers Fjord points to the use of this fjord as an important point of entry for trade with the agriculturally important moraine belt of East Central Jutland, which is one of the main areas of concentration of the Funnel-beaker culture in Jutland. Taken together with the probably contemporary flat axes from Morsø and Mosgaard and the halberd from Skalsaadalen they make a good case for the use of the Limfjord route for the importations from Ireland[1].

A second group of axes of Irish workmanship is found in the Danish islands. Megaw and Hardy observed that the axe from Selchausdal in Zealand (R. 268) already referred to above, was so similar to one of the axes in the Connor hoard in

[1] The decorated axe from Astrup near Hjørring (R. 260) belongs to Megaw and Hardy's Type II, and is an imitation rather than an import.

Ireland that they could be attributed to the same workshop. Another Zealand axe from Store Hedinge (R. 268–70) is not specifically mentioned by Megaw and Hardy as a probable import, but seems to me to justify inclusion in this category. Two other axes from Store Hedinge are a bit too thick in the centre to be accepted as imports but appear to be fairly close imitations; a fourth axe is more Central European in form. Megaw and Hardy list the first-mentioned Store-Hedinge axe separately from the other three, but Broholm lists all four as constituting a single hoard.

To this short list of probably imported Irish axes in the Danish islands we may add another more recently published. It is a small axe of Class I, with hammered flanges, faint cabling on the sides, and over-all herringbone decoration on the lower half of the face. It resembles one of the axes from the Willerby Wold find in Yorkshire (to be discussed below) and the Irish axe from the Dieskau hoard in Saxony. Cf. also Bushmills, Co. Antrim (Coghlan and Case, 1957, fig. 2, no. 85); the 'rain'-decorated axes in the Colleonard hoard (*Inventaria* GB. 29: 1–3); Benburb, Co. Tyrone (*JRSAI* XCI, 1961, 74, fig. 15: 1); Haren, North Brabant, below, p. 37. It was found in a bog at Lumby Taarup on the island of Fyn (Pl. II*b*), together with two small low-flanged axes with narrow butts, resembling one in the Pile hoard (Forssander 1936, *Taf.* XXXV: 6).

Thus there are axes in at least three finds in the Danish islands which can be considered as of Irish workmanship. A fragmentary axe from Flenstofte (R. 259) richly decorated with hatched bands and pendant hatched triangles is rejected by Megaw and Hardy as an import; it must then surely rank as a close imitation.

Across the Sound in Scania, there is one decorated axe (a stray find Löddeköpinge, R. 274) accepted by Megaw and Hardy as of Irish workmanship, another, a bronze axe, possibly but not certainly of Irish workmanship (Skivarp, R. 275; in a hoard with two Pile axes) and two from the Fjälkinge hoard (R. 272) upon which Megaw and Hardy kept 'an open mind', while inclining to believe that they were local copies.

Our second geographical group of decorated Class I axes of Irish workmanship has a remarkable distribution, extending from the Low Countries through South Hanover to the Saale Valley. Beginning with Saxo-Thuringia, the most important find is the well-known specimen from the hoard found in 1904 at Dieskau (Saalkr.) (Pl. I*c*).

This is in the hoard called 'Dieskau I' by Jahn (1950), Otto (1950) and Billig (1957), but 'Dieskau II' by Von Brunn (1959), who assigns the designation 'Dieskau I' to the well-known gold hoard. The axe in question, a smallish specimen (length 13 cm) with 'rain' pattern on the face, may be compared with the Irish one in the Lumby Taarup hoard in Denmark (above; Pl. II*b*) and the Dutch find from Haren (below, p. 37) as well as with some in the Colleonard hoard in Banffshire (*Inventaria* GB. 29: 1–3); with one of the axes in the Willberby Wold hoard found

in Greenwell's Barrow CCXXXV (earlier, according to Greenwell, than a secondary burial with a somewhat debased all-over corded Beaker in the same tumulus: see Megaw and Hardy, 283–4); Benburb, Co. Tyrone (*JRSAI* XCI, Part I, 1961, 74 no. 64, fig. 15: 1); Bushmills, Co. Antrim (Coghlan and Case, 1957, fig. 2, no. 85). The Bushmills axe has 9.1% tin, and was assigned to CC Group II–JSS Group F 1. The Irish character of this Dieskau axe was recognized by O Riordain as well as by Megaw and Hardy, and can hardly be doubted by any one acquainted with Irish axes; the fact has been accepted, albeit with a certain unnecessary reserve, in more recent publications from the Saxo-Thuringian side. Otto and Witter were seemingly unaware of its imported character when they discussed the results of their metal analysis (OW 397) which showed that, unlike the typical 'Saxon' axes of the area, it contained 14% tin! Indeed, their classification made it appear that despite the tin content, the axe was of local copper; but in the new JSS scheme it is assigned to Group E 01. The analysis thus conforms to expectations at least insofar as it confirms that the metal is of foreign origin as far as Central Germany is concerned. The same Dieskau hoard also contains a halberd which O Riordain thought very Irish-looking (cf. above, p. 20). This halberd (OW 303) is also of JSS Group E 01 copper; some halberds of purely Central German form in the same hoard (OW 300–2) are, however, also of the same metal group.

The Dieskau II hoard is therefore a key 'contact find' for the dating of the Irish Early Bronze Age export trade. The hoard is a characteristic one for the main hoard-horizon of the Saxo-Thuringian Early Bronze Age which Von Brunn (1959) has catalogued and analysed in detail. In Central European terms this is equated with Reinecke A1, but it must surely be equated with the very end of that phase. For on the one hand, it is contemporary with the time of Saxo-Thuringian *Fürstengräber*, the monumental tumulus burials of Leubingen type. And on the other hand, the *Fürstengrab* inventory is closely connected with that of the Dieskau gold hoard, which in turn contains an axe of a type regarded generally as characteristic of Reinecke A 2. At most, then, the Dieskau hoard can date to a very short time before the arrival of Reinecke A 2 imports in the Saale Valley. The corresponding phase in Britain is Wessex I.

A second Saxo-Thuringian axe which is surely to be grouped with the actual imports, as far as form and decoration is concerned (although the metal analysis places it in JSS Group E 00) is the stray find from Wessmar, Kr. Merseburg (R 258; OW 206). The best illustration is fig. 5, from Otto and Witter, 1952; detailed description in Billig, 1957, 288–9, 296–8. It is a large specimen, comparable in size with the Connor-Selchausdal group, appropriately slender in profile, elaborately decorated in the best Irish manner (different on the two sides), and with a typically Irish-looking outline, and it contains 12% tin.

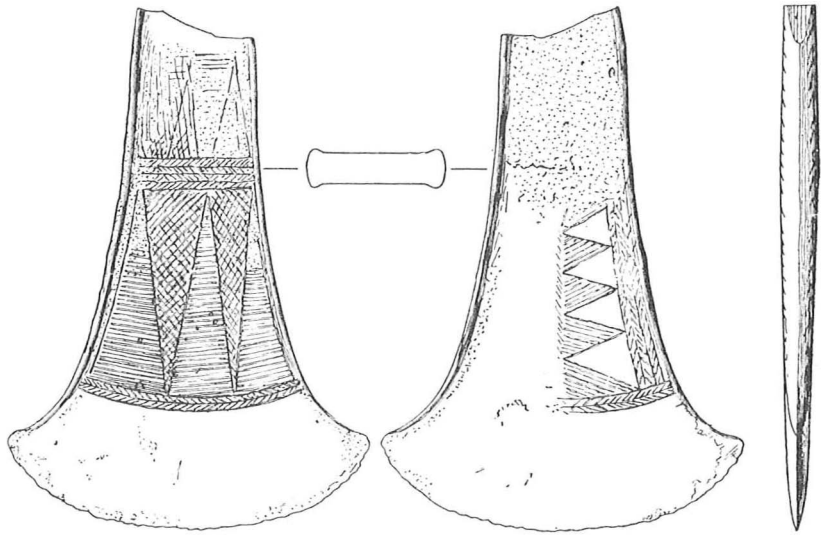


Fig. 5. Ornamented lowflanged axe, Wessmar, Saxony. 1 : 2. After Otto and Witter.

Less typically Irish in form and decoration, yet clearly related to the Irish imports – it is large and thin, with 8% tin (JSS metal group B 2) – is the axe from Schweta, Kr. Oschatz, found on the same site as, and presumably associated with, two Unětice heavy penannular rings. It is described in detail by Billig (1957, 285 ff., *Abb.* 2, 7, 9). Though the straight sides and straight butt (the roughness of which, however, makes one wonder whether the form is original) give it a somewhat un-Irish appearance, and the motif of small V's within one another is not typical of the Irish repertoire, it is certainly little removed from the Connor-Selchausdal type of Irish axe, and (as Billig stresses) completely foreign to the Unětice environment. If not an import, it must certainly rank as a close imitation.

In contrast to these, the pair of axes from (according to Billig) the same mould, found at Griefstedt, Kr. Sömmerda, as part of a Unětice hoard (R. 257; OW 703–4; Von Brunn, 1959, 57, *Taf.* 30; Billig, 1957, 290 ff., *Abb.* 3, 4, 8) are, despite their thinness, of an outline more closely resembling 'Saxon' than British axes, and their decoration is also rather removed from that of typical Irish specimens. Still, decoration, thin outline, and the possession of 9% tin show their relation to the Irish exports; they are clearly to be considered as hybrids. Despite the similarity of the two specimens, they fall into two different JSS metal groups (B 2 and C 2).

Sprockhoff (1941, *Abb.* 48–9) has called attention to some decorated axe finds in Westphalia and South Hanover which help to demarcate a route between the West and Central Germany. One was found (together with a second lowflanged axe, but

undecorated) on the Sassenberger Heide, Kr. Warendorf. It is broken, and only the upper half is preserved. The butt is rounded and fairly narrow, the lower part of the face has a series of shallow, broad furrows in the Irish fashion. It contains 12 % tin (OW 474), and is of B 1 copper (fig. 6 : 2).

Hachmann (1957, 61) has described this axe as a Pile axe, to which it has indeed a certain resemblance (Pile axes are, after all, imitations of the Irish type in question) but the find-spot, far outside the limited territory in which Pile axes occur, the width of the facial furrows on the Sassenberg axe (those on Pile axes are very narrow), and the high tin content all argue for its being Irish rather than Swedish.

The axe with which it was associated, an intact specimen, (fig. 6: 1; OW 857) closely resembles some Dutch axes which we discuss below, and which we regard as derivatives of the Irish type. It is of JSS Group B 2 metal, and contains 10% tin.

An axe (fig. 6: 3) from Ronnenberg, Kr. Hannover (its butt end is broken off and missing) also has similar but somewhat narrower grooves on its face. Its proportions are quite Irish. It, like the Sassenberg specimen, may be grouped with the probable Irish exports. A third axe with facial grooves illustrated by Sprockhoff, from Hessen am Fallstein, Kr. Wolfenbüttel, is distinctly 'Saxon' in shape, and must rank as a hybrid.

In the Netherlands, a recent stray find is a small low-flanged axe from Haren, just south of the river Maas or Meuse in North Brabant (Modderman and Butler, 1959). This axe is a small one; its original length could hardly have been much over 10 cm (the butt end is broken off and missing). It is ornamented below the septal ridge with tracer patterns, different on the two sides (fig. 6: 4).

A small Irish axe with facial furrows, and with plastic lozenges on the sides, is in the Kam Collection in the Nijmegen Museum (fig. 6: 7) and is perhaps a local find, as suggested by Boeles (1920, fig. 2); but no exact provenance is recorded, and the find may equally well be a modern import. The occurrence of similarly furrowed axes in Hannover encourages one, however, to believe in it, and it may well have formed part of the Maas-Rhine group of Irish exports to which we have already called attention elsewhere (Butler, 1959).

In Belgium, a decorated low-flanged axe with fine tracer ornament on the face, and very Irish-looking, was found near Ghent (unillustrated; de Loë, 1931, 25; we are grateful to Dr. M.-E. Mariën for a drawing of this axe).

Our Map II makes it clear that these decorated axes of presumably Irish workmanship fall into two distinct geographical groups. The first area comprises part of Jutland, the Danish islands, and southern Sweden. This is the 'Nordic heartland', Kersten's Zone I, the area of Hachmann's Mosbaek group. The second group is more linear in character; it extends from 'Helinium' (the Scheldte-Rhine estuary) along the lower Rhine to Westphalia, then turns eastward through south-

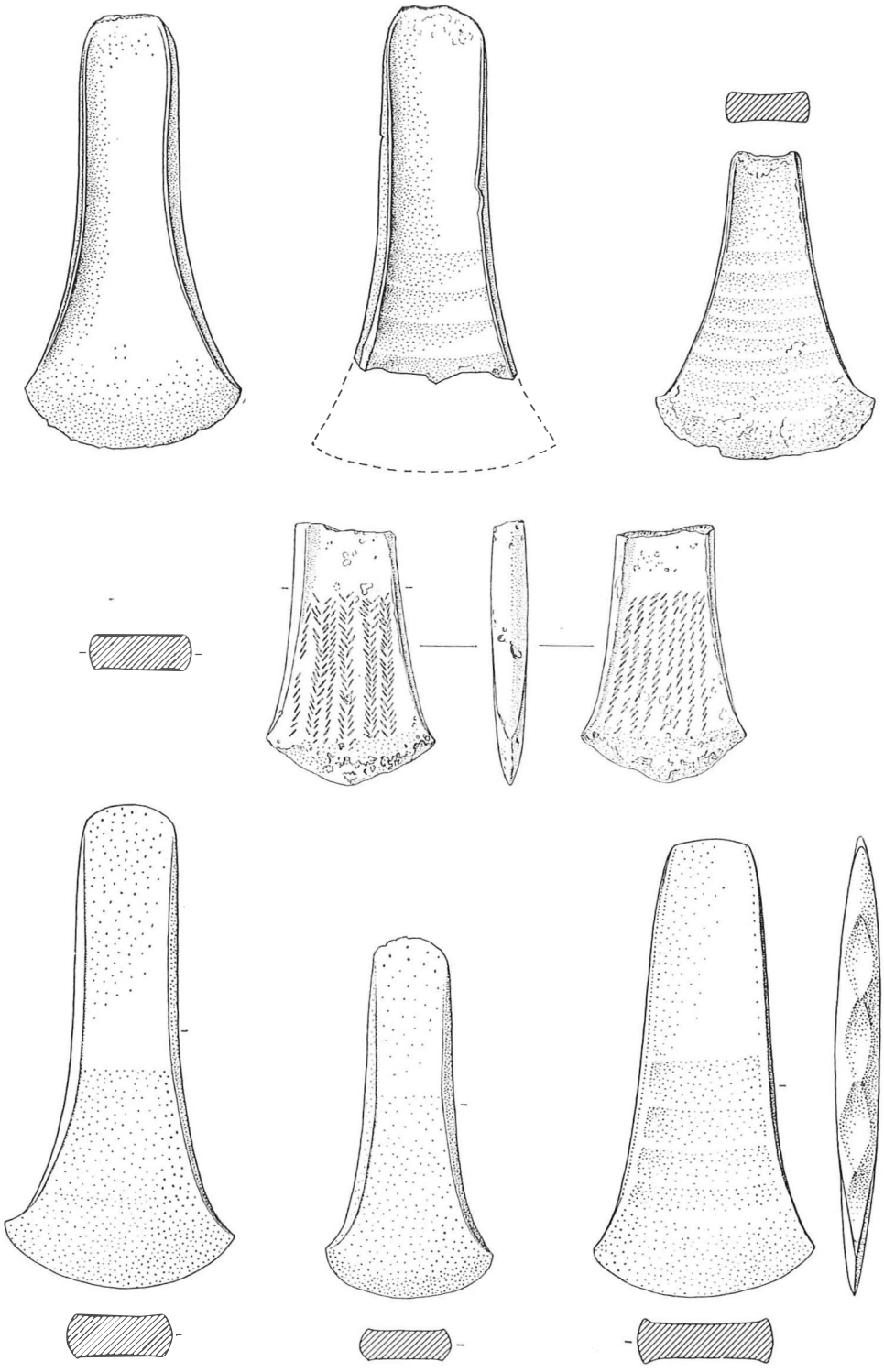


Fig. 6. Lowflanged axes from Northwest Germany (1–3) and the Netherlands (4–7). 1, 2 Sassenberg; 3 Ronnenberg; 4 Haren; 5 's-Hertogenbosch; 6 Gemert; 7 Kam collection, Nijmegen. 1 : 2. 1–3 after Sprockhoff, 1941; 4 after Modderman. Museums: 5, 6 's-Hertogenbosch; 7 Nijmegen.

ern Hanover, probably following the valley of the Lippe to the Teutoburger Wald, and ends in the neighbourhood of Halle in the Saale Valley in Central Germany. Between these two areas is a wide gap, comprising half the Netherlands and the whole of Northwest Germany and Schleswig-Holstein. This blank area is exactly the area of the Early Bronze Age 'Sögeler Kreis'.

That this distribution is no accident, but the reflection of an actual trade pattern, becomes perfectly clear when we consider it together with the distribution of contemporary types (Part II, pp. 200 ff.). The Sögel area did not want, or could not get, the products of Irish Early Bronze Age industry; they went on the one hand to South Scandinavia, on the other to the Netherlands, Westphalia and Central Germany.

The Irish axes traded to South Scandinavia and to Central Germany included

Table I. *Composition of Irish axes*

Principal constituents (%) of spectrographically tested Irish Early Bronze Age axes found in Germany, compared with examples from the British Isles

findspot	JSS Group	Sn	As	Ag	Sb	Ni	Bi	Pb
Dieskau OW 397	E 01	14	0.16	0.06	tr	0.01	tr	0.08
Wessmar OW 206	E 00	12	–	0.01	tr	tr	tr	0.12
Sassenberg OW 474	B 1	12	0.10	0.30	0.60	0.07	tr	tr
Bushmills CC 85	F 1	9.1	0.30	0.01	0.007	0.04	0.0008	0.40
Co. Carlow CC 68	–	c. 5–10	0.20	0.20	0.30	0.04	0.002	0.02
Icklingham CC 95	F 1	11	0.05	0.02	0.0035	0.35	0.003	0.005
Cobbinshaw CC 23	E 11	8.9	0.30	0.10	0.26	0.02	0.002	0.14
Ireland CC 84 (Class III)	E 01	11.4	0.30	0.10	0.003	0.02	0.004	0.01

Abbreviations

OW: Catalogue no. in Otto and Witter, 1952.
CC: Catalogue no. in Coghlan and Case, 1957.
JSS: Junghans, Sangmeister and Schröder, 1960.

some of the finest products of the industry. The Irish axes were imitated there, giving rise to a special series of *Prunkbeile* and to a larger series of work-axes, the Pile type.

The Irish axes traded to Hanover and Central Germany have proved, on the basis of a limited number of spectrographically examined specimens, to be made of rather heterogeneous metal (JSS Group E 00 at Wessmar, E 01 at Dieskau, B 2 at Sassenberg), but to have one thing in common: the possession of a high percentage (9% to 14%) of tin. This is also characteristic of the specimens so far tested in the British Isles itself. It therefore appears to be certain that the Irish smiths understood and consistently employed quantities of tin approaching the ideal percentage, at a time when this was by no means the practice in Central Europe. It is noteworthy too that high tin percentages occur in the Central German *Prunkbeile* which are certainly imitations of the imported Irish products. At this time, as we know from the analyses of the Central German hoards, the Saxo-Thuringian smiths were accustomed to making short, thick axes of arsenical copper, which have little or no tin content; when they had tin it was used for halberds (mostly of a ceremonial character) and rings, often in what seem irrational proportions. By Reinecke A 2 (which as we have seen can hardly be very long after the Dieskau time) the use of true bronze for axes had become more general.

Von Brunn (1959, 40) goes so far as to suggest that the Saxo-Thuringian smiths may not have deliberately put tin into axes at all, but simply added broken-up bits of foreign tin-bearing axes to their axe metal. This would, he suggests, account for the small and irregular percentages of tin found in so many Saxo-Thuringian axes. This certainly suggests that the Saxo-Thuringian industry had not yet gained understanding of the best use of tin, although this knowledge and capacity was already in the hands of the otherwise far less advanced Irish industry. Possibly the prestige of the thin Irish axe on the Continent, attested by the fact both of its dispersal and its imitation there, was due to superior use-quality, thanks to its being of bronze.

In Scandinavia, it also appears (though detailed spectrographic evidence is not yet available) as if Irish axes containing tin gave rise to a local industry in which tin was not available. Here the axes imitating the Irish ones preserve the same general length and breadth, but become rather thicker. This is the Pile type of Forssander.

Before discussing the consequences of the Irish trade for the Netherlands, we must first consider another category of axes, the undecorated lowflanged ones.

C. UNDECORATED LOWFLANGED AXES

There has been no special study of undecorated lowflanged axes in our area. Such a study would be most useful.

It was the writer's impression, from the examination of collections in Northern museums, that no significant number of undecorated Irish lowflanged axes is to be found in South Scandinavia or North Germany. Isolated examples may well have been overlooked.

The case is otherwise in the Netherlands. Here lowflanged axes are in general rather uncommon; Central European types are represented only by one or two isolated specimens, and there are hardly more than a dozen examples of undecorated low-flanged axes of generally Western European form.

Of these, two specimens from North Brabant, a small one from Gemert, a larger one from 's-Hertogenbosch (fig. 6: 5, 6), are remarkably similar in form to the type of axe represented by the Dieskau-Haren-Colleonard-Willerby Wold group, but only lack the decoration of these. We have not hesitated to claim them as Irish ex-

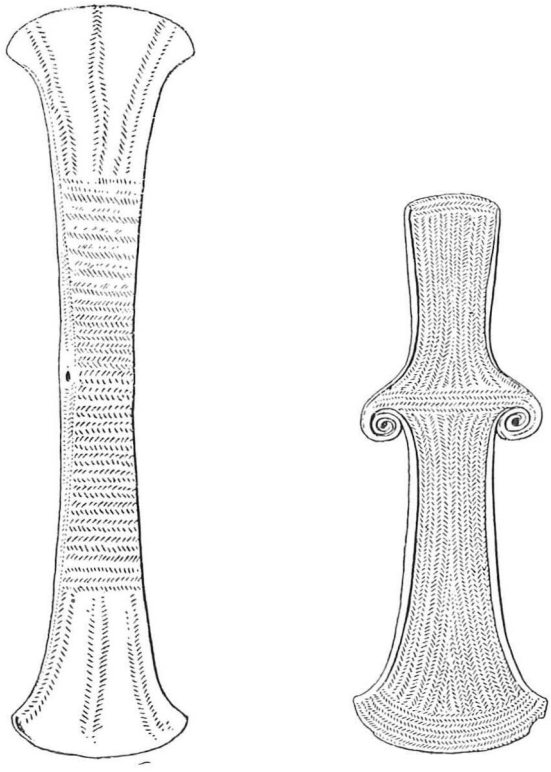


Fig. 7. Ornamented axes from the Rhineland. 1 Friedelsheim, Rheinpfalz; 2 Frankenthal? 1 : 4. After Behrens.

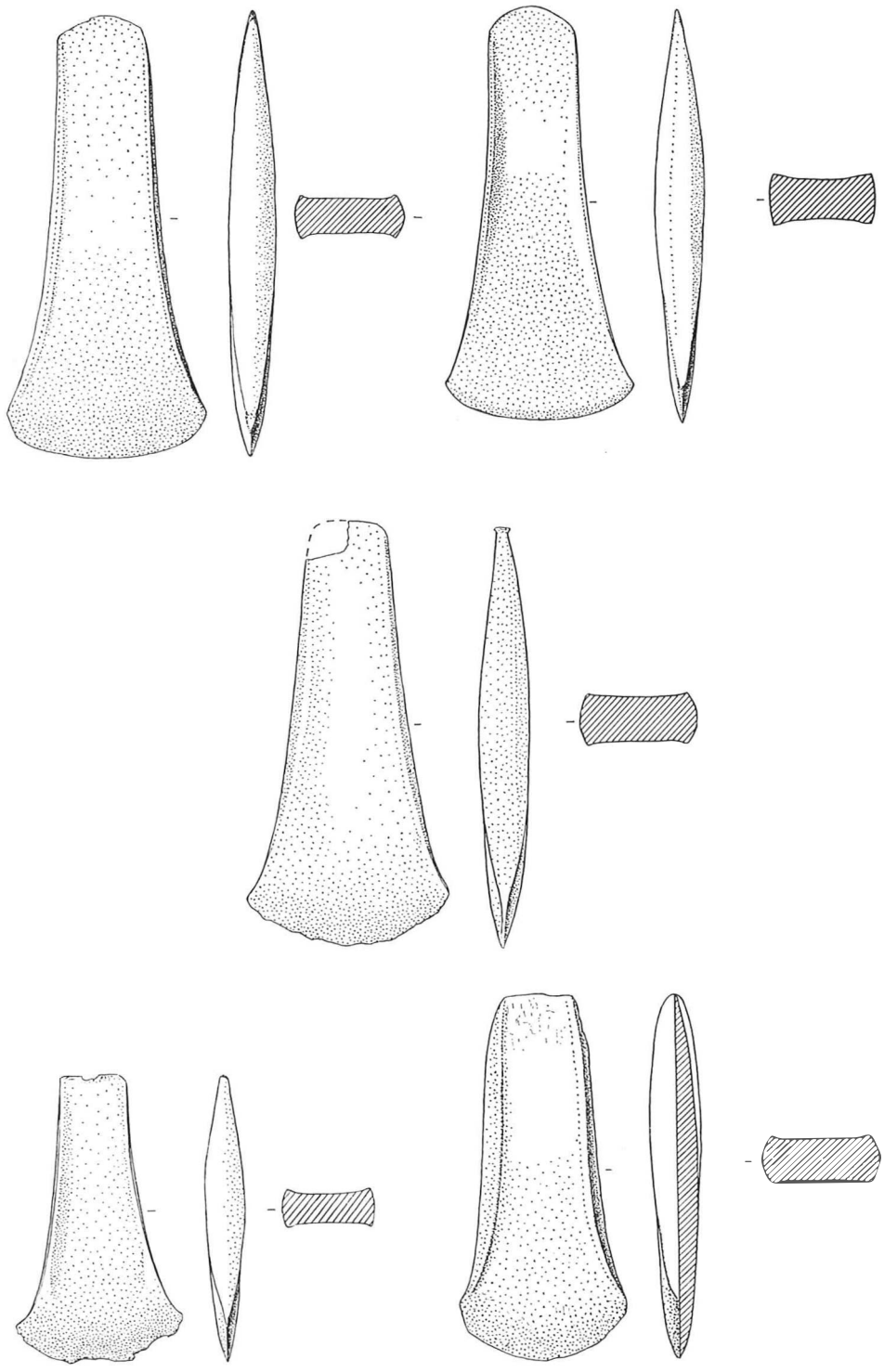


Fig. 8. Lowflanged axes of Emmen type. 1 : 2. 1 Valtherspaan, Dr.; 2 Suawoude, Fr.; 3 Emmen, Dr.; 4 Gieten, Dr.; 5 's-Heerenberg, Ge.; Museums: 1, 3, 4 Assen; 2 Leeuwarden; 5 RMO Leiden.

ports, and include them as part of a small Maas-Rhine group of such exports (Butler, 1959, 291–2, *Afb.* 14, 15).

On the other hand, it is not easy to draw a sharp line between these axes and another ten Dutch low-flanged axes (fig. 8; Butler, 1961, Pl. XVI) and specimens in Germany, such as the complete axe from the Sassenberger Heide (fig. 6: 1).

These we propose to call lowflanged axes of Emmen type, after a find-place in Drenthe. Axes of Emmen type are generally quite similar to Irish specimens; they tend however to be somewhat thicker, and to lack the transverse septal ridge which is so often present on the the Irish axes. We have already seen that the Sassenberg specimen was of B 2 metal, with 10% tin. Some Dutch specimens tested by chemical methods showed substantial nickel, and thus appear to be of non-Irish metal.

In view of the known export of Irish axes to the Netherlands, and even the presence of a founders' hoard such as might have been left behind by an Irish smith at Wageningen, it seems reasonable to interpret the Dutch axes as a local derivative of the Irish type. The Sassenberg hoard shows that their lifetime begins during the period of the Irish export trade. At Vogelenzang, North Holland, an axe of Emmen type was one of the surface finds collected from a presumable settlement site. The material found there, recently published by Brunsting (1957, 95–8, Pl. XX 1:6), includes a stone hammer-axe, a flint knife, two fragments of amber, and two sherds of pottery. The sherds were considered to be Iron Age, but have lately been recognized (Glasbergen, in *Helinium* I, 1961, 73) as stemming from urns of the Hilversum-Drakenstein family. The site is only one kilometer away from the Hilversum Culture domestic site (Groenman, 1961), the pottery of which I.F. Smith has compared (1961, 112 ff.) with that from Mildenhall (Clark, 1936) and Ardleigh (Erith and Longworth, 1960) in East Anglia. The circumstances at the first Vogelenzang site were, however, hardly such that one can claim the objects as associated, and however early one may wish to make the Hilversum invasion, one should need more evidence before equating it with the period of the Irish axe trade.

The axes of Emmen type have a distribution in the Netherlands which is more widespread than that of the pure Irish type. The full distribution in Germany is not yet known, although we can point to examples like the Sassenberger Heide one, and another from Bacharach on the Rhine (Bonn Museum). In Belgium, the specimen from Rekem, Limburg (Mariën, 1952, fig. 177: 3) can perhaps be brought loosely into this connection; other specimens must be rare or unknown there. We do not know how many may occur in France like the one from Villeneuve-Saint-Georges (de Mortillet, 1881, no. 662).

D. AXES WITH CAST FLANGES

The development of the axe with high, cast flanges did not, according to Megaw and Hardy, take place independently in the British Isles; the type was an introduction from the Continent. In Britain, cast-flanged axes have a markedly eastern and southern distribution, and are very rare north of Yorkshire (distribution map, Fox, 1947, Pl. VII). In Ireland, finds occur mainly in the centre and north, and are for the most part of a distinctively Irish form. The English axes with cast flanges are evidently derived from Central European types which became common in Reinecke A 2. Good prototypes for British cast-flanged axes are to be found in Saxo-Thuringia as well as in Bohemia and Southwest Germany, but the route by which they may have reached Britain has not been studied. The 'Saxon' form of cast-flanged axe with S-curved sides never took root in Britain; but the straightsided form, equally at home in the Unetician bronze industry, was widely imitated here, and adapted to local taste. The abrupt turning out of the blade-tips, with their upper edge nearly horizontal, but rarely recurved upwards, is a feature seldom found outside the British Isles.

A parallel evolution took place in Northern Europe, where Central European A 2 axes were both imported and imitated. As in Britain and Central Europe, there is often an angular thickening in the centre of the axe, or an incipient stopridge. In the North the 'Saxon' profile was often retained, but straight-sided forms were also adopted.

Typically British or Irish cast-flanged axes are extremely rare in Northern Europe. None are known from South Scandinavia; the nearest approach to an Anglo-Irish cast-flanged axe there is the much discussed example from the Virring hoard in Jutland (fig. 31: Forssander, 1936, *Taf.* XL; *DO* II, 11–12). But, as Megaw and Hardy pointed out (1938, 285, 291), the profile of this axe forbids its being considered as an export from these islands. Its cabled sides can only be considered as an imitated feature, already known in the North from imported Irish axes of Type I.

A second and smaller axe in the Virring hoard belongs to a type common in North Germany (e.g. Bückeburg, near the *Porta Westfalica*, Sprockhoff, 1941, Abb. 60: 2; the Wildeshausen hoard in Oldenburg, Jacob-Friesen, 1954, 27 ff., fig. 2; the hoard from Oldendorf, Kr. Halle, Hoffmann, 1939, 71, Abb. 15–19). As the Wildeshausen and Oldendorf hoards show, such axes were in use during the Wohlde phase. An example of this type appears in Britain in the hoard from Plymstock, Devon (*Inventaria Arch.*, G.B. 9, 2(2)14); this axe is slightly shorter and broader that the Continental examples cited, but clearly of the same type. Apart from the Plymstock example and a stray find near Amesbury, Wilts. (Blackmore Mus., Salisbury; Index of Bronzes), the type appears to be unknown in the British Isles, and the two South English finds point to connections with North Germany during late Wessex-Sögel times.

E. STOPRIDGE AXES

While cast-flanged axes with 'incipient' stopridge occur commonly in Early Bronze Age hoards, the development to a pronounced projecting stopridge seems to appear only on the threshold of the Middle Bronze Age. The general tendency of development of the stopridge axe is toward higher and thinner flanges and a narrow shaft with straight, more or less parallel sides. A vertical rib sometimes appears on the face below the stopridge.

Sprockhoff has called attention to one distinctive form of stopridge axe which is widely distributed across Northwestern Europe, from Britain and Northwest France to the Netherlands and North Germany (fig. 10: 2). Although some of these stopridge axes are ornamented in a style derived from that of the Irish axes, their form is rare in Ireland, which has its own distinctive forms of stopridge axes (Megaw and Hardy, 1938, fig. 5: c, d: their Type IV). The exact distribution of the 'Northwest European' type has not been mapped, nor is its exact centre of origin known. Its occurrence in the hoards from Babbin, Kr. Pyritz (Sprockhoff 1941, *Abb.* 62), Ilsmoor, Kr. Stade (fig. 11: 2; Sprockhoff, *Taf.* 24: 8), Voorhout, S. Holland (fig. 11*a*: Sprockhoff *Taf.* 26: 16), Rülow, Amt. Stargard (Pl. VI*a*; Sprockhoff *Taf.* 27: 27) Hüvede, Kr. Lingen (Sprockhoff, *Taf.* 28: 6, 7), and Oldendorf, Kr. Halle, Westf. (Sprockhoff, *Taf.* 36: 2, 4) show that the type is contemporary with the early 'shield-decorated' palstaves of the early Middle Bronze Age (see Chap. III).

British examples have not been systematically collected. One occurs in the Welsh hoard from Bettys-yn-rhos, Denbighs (see p. 61) (Grimes, 1951, No. 527).

Stopridge axes resembling one of the Irish forms have been found occasionally in the Low Countries (Bergen, Dutch Limburg, Felix, No. 41, *Abb.* 155; Hastiére, Prov. Namur, Belgium, Marien, 1952, fig. 181: 1).

LIST OF IRISH FLAT AND FLANGED AXES IN NORTHERN EUROPE

(cf. Map II)

This list (cf. Map I) comprises only axes which are so like specimens in the British Isles that they may be presumed to be of actual Irish workmanship; obvious imitations and specimens of uncertain character have been omitted.

I. *Undecorated flat axes of 'thin-butted faceted' type.*

1. Netherlands. *Wageningen*, Gelderland. Hoard: with halberd, dagger, simple bracelets, unfinished rivets, metal fragments, etc. Fig. 1. RM● Leiden, RW. 1–14. Pleyte, *Nederlandsche Oudheden, Gelderland* (1889), 49, Pl. XI: 5–9; Butler, 1959, 126 ff, fig. 1; De Laet and Glasbergen, 1959, Pl. 26 (photo); *Inventaria* NL. 11.

2. Denmark. *Fredsø*, Lødderup s., Morsø Sdr. H. NM Copenhagen. DB II 16, Pl. 2 : 4.
3. Denmark. *Mosgaard*, Taarup s., Fjends H. Forssander, 1936, *Taf.* II; Broholm, DB II, Pl. 2 : 3.
4–5. Sweden. *Skåne*, without exact provenance. Two examples cf. Mosgaard. Forssander, 1936, Taf. II: 5.

II. *Undecorated flat axe* – type cf Killaha, PPS 1946, Pl. XII: 4.

6. Sweden. *Pile*, Tygelsjö sn., Skåne. Bronze axe, in hoard, with metal-hilted daggers related to Uenze's Saxon type, Pile axes, ingot torques, C-shaped bracelet, lock-ring, frags. of ribbed 'manchette' bracelets. Stockholm Museum. Montelius, Chron., 1900, 54, fig. 154–162; Forssander, 1936, Taf. XXXV–XXXVI; Uenze, 1938, No. 124, 60–1, 85; Hachmann, 1957, *Kat. Nr.* 715, *Taf.* 22 : 7–18.

III. *Decorated flat and lowflanged axes* (Megaw and Hardy Type I).
Megaw and Hardy's Register numbers (1938, 298 ff.) are indicated by R.

Denmark

7. *Gallemose*, Harritslev S., Støvring H., Randers Amt. Hoard. NM Copenhagen. R. 262. *Nordiske Fortidsminder* I, 76, Pl. XVI, fig. 3; DO II No. 557; DB II Pl. 3 : 3; Hachmann, 1957, Kat. Nr. 25, Taf. 4.
8–9. *Ulstrup*, Vellev S., Hovlbjerg H., Randers Amt. Aarhus Museum. Two examples; one of which has two side-loops. Pl. III and fig. 4. Length 27.5 and 29 cm. Butler, 1955, 36 ff, fig. 1–2.
10. *Selchausdal*, Buerup s., Løve H., Holbaek Amt. Length 23 cm. R. 268. NM Copenhagen. DB II, Pl. 3 : 5 (24); DO II, No. 556.
11. *Store Hedinge* s., Stevns H., Praestø Amt. In hoard. Length 25 cm. R. 269–70. DB II 22, Pl. 3 : 4; DO II, No. 559.
12. *Lumby Taarup*. Fyn. Length 14.7 cm; in hoard, with two locally made narrow-butted lowflanged axes. Mus. Odense. Pl. II*b*. *Aarboger* 1938, 68, fig. 4–6. DB I, 207 (fig.). Hachmann, 1957, *Kat. Nr.* 129, *Taf.* 21: 6–8.

Sweden

13. *Löddeköpinge*. Skåne. Mus. Lund. R. 274. Forssander, 1936, *Taf.* XXXVII: 2.
14. *Skivarp*. Skåne. Bronze axe (6.75 % tin), length 26.5 cm., in hoard with two axes of Pile type. Mus. Stockholm. R. 275. Montelius, *Chron.*, 1900. *Minnen* 786; Forssander, 1936, *Abb.* 32; Hachmann, 1957, *Kat. Nr.* 720, *Taf.* 21: 13–15.

Germany

15. *Sassenberger Heide*, Kr. Warendorf. Hoard: with an undecorated lowflanged axe. Fig. 6: 1, 2. Sprockhoff, 1941, 58, *Abb.* 48; Otto and Witter, 1952, 474, 857.
16. *Ronnenberg*, Kr. Hannover. Fig. 6: 3. Sprockhoff, 1941, *Abb.* 49 : 3.
17. *Dieskau*, Saalkr., Hoard 2. Length 13 cm. In hoard. Pl. I*b*. R. 256. Förtsch, 1905, 3 ff., *Taf.* I–IV; Otto and Witter, 1938, 174 ff., *Taf.* 48 1952, No. 397; von Brunn, 1959, 45, *Taf.* 12–19; Forssander, 1936, *Taf.* XIV; *Ausgrabungen und Funde* III, 1958, 206, *Abb.* 29.
18. *Wessmar*, Kr. Merseburg, Fig. 5. R. 258. Montelius, *Chron.*, 1900, 79, fig. 201; Otto and Witter, 1952, no. 206 (fig. on p. 67; also *Taf.* 3 : 206); Billig, 1957, 285, ff.

Netherlands

19. *Haren*, Gem. Megen, Haren and Macharen, North Brabant. Fig. 6 : 4. Modderman, 1959, 289–91, *Afb.* 13.
20. No exact provenance; possibly from the Nijmegen district, Gelderland. Fig. 6: 7. Mus. Nijmegen (ex coll. Kam.) Boeles, 1920, fig. 2; Butler, 1960, Pl. XVI: 2.

Belgium

21. *Ghent* (near). Mus. Brussels. B 390. Length c. 13 cm (originally longer?); width of blade 9 cm. Plastic lozenges on sides; dec. face. Th. Juste, *Catalogue des collections . . . Musée Royal d'antiquitès*, 2 ed., 1867, P. 4 (nr. C 1).

IV. *Undecorated low-flanged axes.*

Netherlands

22. *Gemert*, North Brabant. Hoard? with two flint axes of W. Eur. type. Fig. 6 : 6. Mus. 's Hertogenbosch, 608–9, 611. *Cat. Arch. Verzameling Prov. Genootschap van Kunsten en Wetenschappen in Noord-Brabant* (1917), pp. 17, 19 (find-spot given as Nuenen). Butler, 1959, *Afb.* 14.
23. *'s-Hertogenbosch*, North Brabant. Stray. Fig. 6 : 5. Butler, 1959, *Afb.* 14.

CHAPTER III

PALSTAVES

(List pp. 71–3; Pl. V–IX; fig. 9–18; Maps III, IV)

The relations between British-Northwest French palstaves and those of Northern Europe have been studied from the Continental side, notably by Forssander (1936, 216 ff.) and Sprockhoff (1941, 43 ff., 68 ff.). These two authors demonstrated that Western European influence contributed greatly to the development of the North German and South Scandinavian forms of 'work palstave' (the elegant Northern 'weapon palstave' being something quite different). Sprockhoff in particular published and illustrated most of the relevant material from North Germany, providing at one stroke the most useful basis for the understanding of the relationships between the British Isles and Northern Europe in the Middle Bronze Age.

The British side of the palstave story has been comparatively neglected. Indeed, the most useful systematic study of British palstave types since the chapter on palstaves in Evans (1881, 70 ff.) is Breuil's analysis of the palstave finds in the Somme basin (1905, 151 ff.), where a palstave industry flourished with intimate links with that of South England. And lately, M. A. Smith (1959) has defined the main characteristics of early, transitional and late palstave types in southern Britain, and identified some regional types. This process of regional sub-division can certainly be carried farther; and possibly the chronological subdivision too. One needs, in fact, a comprehensive and detailed study of British palstaves as an essential background to the interpretation of the Continental evidence for trade; and such a study does not yet exist. The classification here employed was improvised solely to facilitate comparison between the North European and British-Northwest French material, and does not pretend to be comprehensive as far as the British material is concerned. It was devised independently of the classification proposed by Miss Smith (now Mrs. Brown); where possible we shall indicate points of contact between the two classifications. It may be helpful to the reader if we state at the beginning that certain of Miss Smith's types have little or no part to play in the North European trade; in particular, her 'haft-flanged axe' series, characteristic of Ireland and North Britain, is represented only by only one example in the Low Countries, and this a very early example (Rijsbergen, North Brabant; RMOL T.R. 1; Pl. VII: 3 and fig. 9). Her 'Southwestern' palstave group is represented in the

North European area only by specimens in the Voorhout hoard (almost all the palstaves in this hoard were probably 'high-flanged' in Miss Smith's sense, but corrosion has in most cases reduced them to stumps) and one or two strays in Germany (*e.g.* Uenglingen)[1]. The North European finds of Middle Bronze Age British-Northwest French palstaves are practically all 'low-flanged' (*i.e.*, related to those of southeastern Britain and Northwest France) or 'transitional', with only a few examples belonging to her 'late' type.

For detailed analysis, we shall employ a classification which takes into account a primary difference in the from of the blade, and secondarily the type of ornament, if any, appearing on the face of the blade.

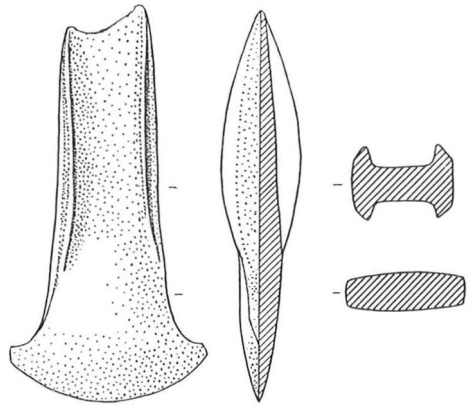


Fig. 9. Haft-flanged axe, Rijsbergen, North Brabant. 1: 2. RMO Leiden.

It is necessary, first of all, to make a basic distinction between two main classes of British and French palstaves: *broad-bladed* (Class I) and *narrow-bladed* (class II). Broad-bladed palstaves have a blade which widens out gradually from the stopridge to a crescentic cutting-edge which is usually more or less of the order of 2.5 times the width of the tool at the stopridge. The narrow-bladed class is more chisel-like in shape, with straight or gently curving, nearly parallel sides; the cutting edge width is often no wider than the width at the level of the stopridge, and is usually no more than 1.5 times the width at stopridge level. Despite the existence of transitional specimens, and of specimens of the narrow-bladed type the blade-tips of which have been expanded by secondary hammering, it is generally obvious at a glance whether a palstave belongs to one family or the other. It seems sufficiently obvious that the broad-bladed palstave was invented first, being derived directly

[1] (Palstaves related to the 'Southwestern' family occur in Brittany, *e.g.* in the Tréboul hoard; cf. Briard, 1956; Giot, 1960, 152, fig. 43).

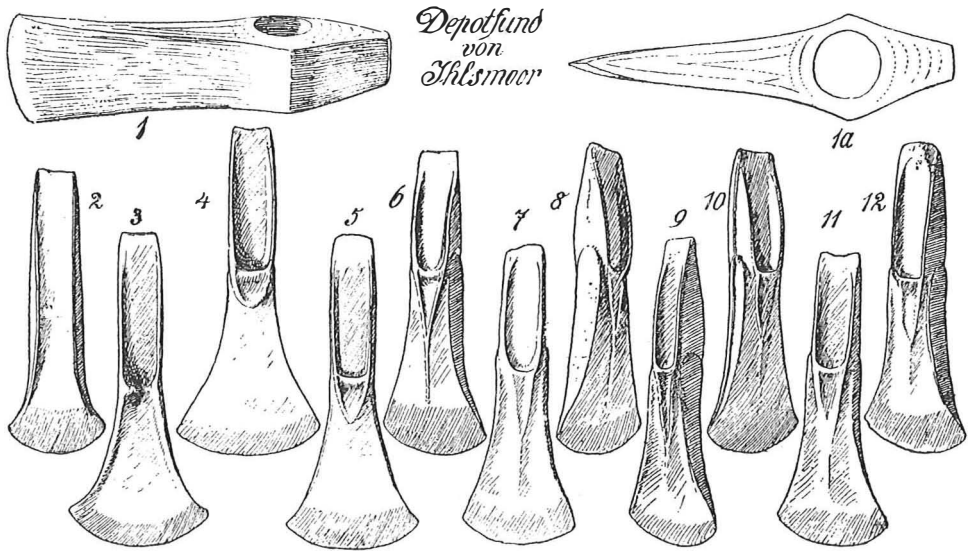


Fig. 10. Hoard from Ilsmoor, Kr. Stade (Elbe Mouth area). 1 : 4. After Schumacher. (= Pl. V*c*).

from highflanged stopridge axes (some with long flanges, some with flanges shortened almost or entirely to 'haft-flange' length), and that the narrow-bladed palstave (which had its main development in the French Middle Bronze Age, early examples being rare in Britain) was derived from it. The two classes then had a mainly parallel development, until, in the Late Bronze Age, the broad-bladed class disappeared, and the narrow-bladed class, by then evolved into M. A. Smith's 'late type', prevailed in both the southern British and northern French areas.

These two main classes can be divided into numerous subclasses on the basis of variations in form and ornament.

One formal difference appears, however, more important than others: namely whether the flanges flank both the upper and lower (blade) parts of the palstave, or stop short more or less at the level of the stopridge. The more or less flat-faced sub-class we call A, the side-flanged sub-class, B. Further sub-divisions are made on the basis of the type of plastic ornament found on the face; these sub-divisions are not meant to be exhaustive, but merely to list the main varieties of palstaves traded to Northern Europe.

The Types

Class I. *Broad-bladed palstaves.*

Class IA. The face of the blade of the palstave is flat, or *slightly* concave or convex. Its cross-section approximates to an oblong rectangle.

A1. *Shield-decorated.* The bases of the side-flanges are joined by a U-shaped rib Ielow the stop-ridge. The ultimate prototype of this form of palstave must be the cast-flanged axe of Megaw and Hardy's Type IV (1938, fig. 5c) which has an angular junction of the base of the side-flanges with the edge of the blade, and often a large U-shaped rib on the face. From these are developed:

a. The *Prees Wood type* (*Ant. J.* 1929, 253–5; fig.; cf. M. A. Smith, 1960, fig. 6: 3). The type is common in Ireland[1], and was traded to Britain and France. The wings have become shorter, the 'shield' accordingly smaller, the whole axe rather narrower. It is often difficult to decide whether such axes are to be called palstaves or flanged axes; the blade below the stopridge is often no thicker or only very slightly thicker than the septum above it. A further development of the type, now unmistakably a palstave, is represented by Breuil, 1905, No. 14; a type again common in Ireland and occurring also in South Britain (*e.g.* Savory, 1958, fig. 1: 2) and Northwest France. The angular junction between flanges and blade is still prominent (cf Lanesborough, *ABI* fig. 97).

b. The '*North Welsh*' *type*, illustrated by Acton Park, Denbighs (Grimes, 1951, fig. 65: 1–5); Savory, 1958, fig. 1: 1; Griffiths, 1956, fig. 25: 1). This is evidently a development from the later examples of Type IA1a. The angular junction between flanges and blade has disappeared, but a reminiscence of it is preserved as an ornament (fig. 11e, h). The 'shield' is still moderately large. In side view the flanges often preserve their inherited leaf shape, or sometimes become lozenge-shaped. More than half the examples known to the writer occur in Wales (mainly in North Wales), but a few are known from Ireland, Southwest England and East Anglia, and in the *Voorhout* hoard in the Netherlands. Five examples occur in the Acton Park hoard, one in the Gloddaeth hoard. The North Welsh variety is distinguishable from varieties (c)-(d)-(e) by its larger size (usually ca. 17–19 cm in length) and its rather clumsy and variable proportions. Most of the shield palstaves mapped by Savory (1958, fig. 10, Map 4) must be of our 'North Welsh' variety.

M. A. Smith (1959, ff.) treats the Acton Park type of palstave as outliers of her 'high-flanged' Southwestern group. We consider it certain, however, that the North Welsh palstaves represent a group on the whole earlier than, and in part ancestral to, the Southwestern palstaves of the Somerset hoards, which generally possess late and specialized features.

c. The '*South English-Northwest French*' type. These are smaller, narrower, and of more graceful proportions than the North Welsh type, and have a smaller 'shield'. On typologically early examples the flanges are leaf-shaped; the sides often

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[1] The only Irish 'association' of a palstave of this type, at Charleville, Co. Offaly, is however, a hoard with a 'narrow faceted' socketed axe and a socketed sickle (NM Dublin, 1944, 266–9). An example from Birchington (Bor End), Isle of Thanet, Kent, is 'said to have been found with a flat celt' (B.M. 54/12–27/29; Index of Bronzes).

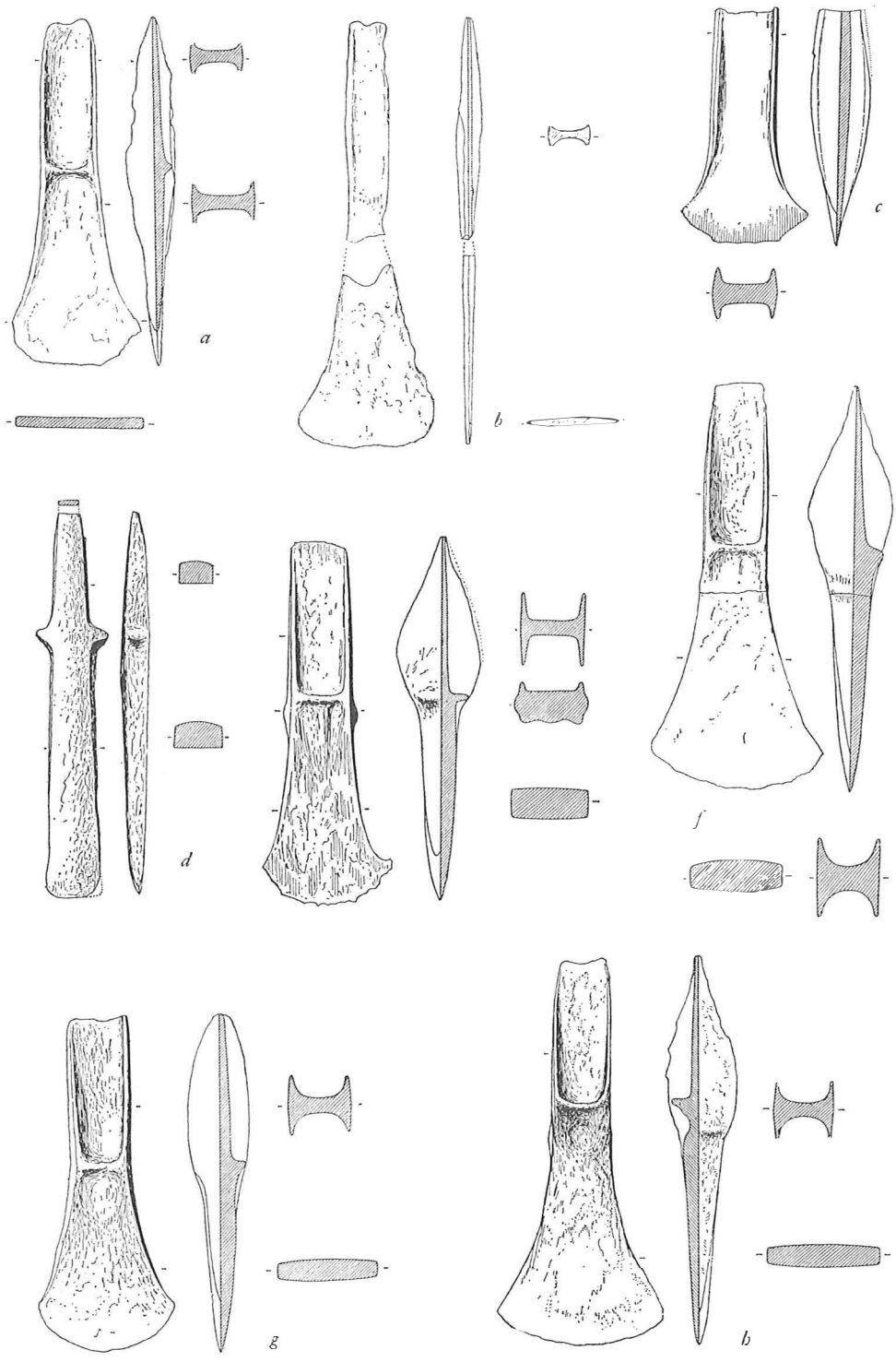

Fig. 11. From the hoard of Voorhout, South Holland. 1 : 3. RMO Leiden.

have a knob, bar, or more elaborate raised ornament reminiscent of the angular junction between flanges and blade which characterised Type IA1a. At times this reminscent feature becomes an ornamental arch-shaped figure (cf. ABI figs. 58, 61, 68) (fig. 13: 4). This feature seems to be more common in Northwest France and Northwest Germany than in Britain (though it is not unknown there); a similar side-arch is a feature of the Y-ornamented Northwest German palstaves as in the Stade and Ilsmoor hoards of Early Montelius II (cf. Valsømagle in Denmark), and is found also on Northern socketed axes (cf. Broholm, DB II, Pl. 9: 6, Pl. 10: 3) and palstaves of Broholm II.

Typical early examples of Type IA1c are those in the hoard from Burley, Hants. (*Antiq. J.*, VII, 192, Pl. XXXIII); Breuil, 1905, Nos. 18, 19, 20; ABI fig. 59; and those in the Northwest German hoards from Hausberge, Stade, Ilsmoor and Pyritz, dated to Early Montelius II. (Example: fig. 10: 4, 5). One example in the Voorhout hoard belongs to this sub-type. The fragment in the Halle (Westphalia) hoard is probably also of this type.

Degeneration of this form produces innumerable variants; some of the degenerations are represented in the hoards already mentioned, *e.g.* at Pyritz. The flanges tend to become triangular in outline instead of leaf-shaped; one or more vertical ribs may appear inside the shield[1]; the shield may lose its encircling rib and become a mere depression on the face of the blade, sometimes even losing its shield-shape and becoming triangular. Loops are a late feature, not appearing in the Early Montelius II finds.

In the British Isles a number of other regional variants of IA1 exist, besides those already described. There is (*IA1d*) an East Anglian variety, which tends to be very short (often ca. 13 cm in length), and which often has its blade tips curved upwards, a feature rarely found on the other varieties; some have a long rib through the shield as in Type IA1f (*ABI* figs. 65, 80, 82; isolated example in LB 2 founders hoard, Rayne, Essex, Colchester Mus.). An Irish variant (*IA1e*) is short like the East Anglian variety, but distinctly thicker, with exaggerated wings (cf. Asterton Prolley Moor, Shropshire, Shrewsbury Mus., Index of Bronzes, with small flat axe of the type sometimes found in Wessex Culture graves). Neither the East Anglian nor Irish variants occur in the North European finds.

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[1] In the North German Early Montelius II hoards, and comparable hoards elsewhere like Habsheim, are found shield palstaves with a rib inside the shield, but never continuing on *below* it. We have accordingly distinguished the variety with shield and long rib extending through it as a separate sub-type, IA1f. The sub-type with several ribs inside the shield is also absent from the Early Montelius II hoards; it is really transitional to our Type IA3. We have not given it a separate classification, but have appropriately noted the examples with multiple ribs in the shield in the list of finds of IA1c, and have not included them on Map V.

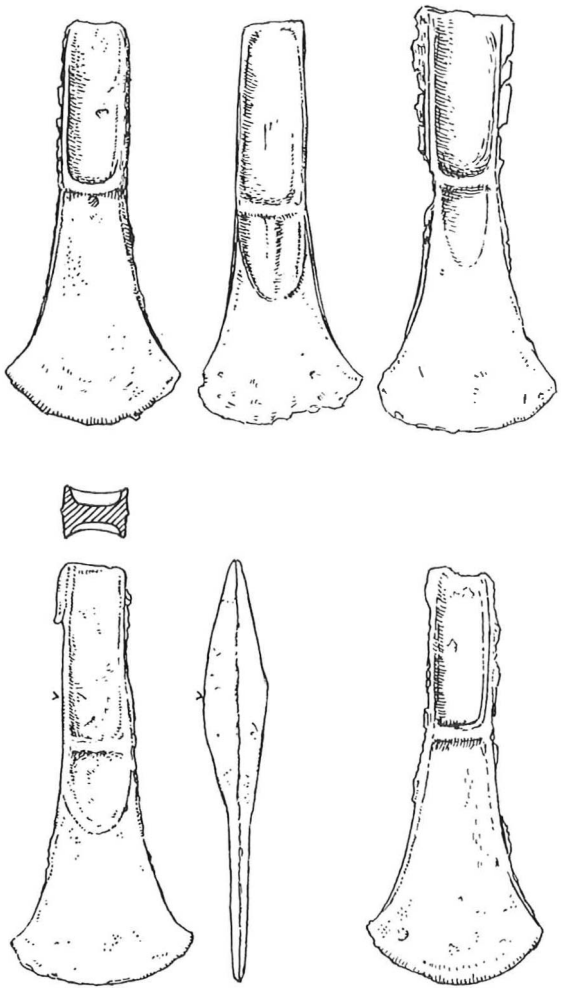

Fig. 12. From the hoard of Pyritz (Pyrzyce), Szyzechin/Pomerania. c. 1: 3. After Kersten.

f. The shield-and-rib type. This type has a shield with a long medial rib below or through it (Pl. VI*b*: 3). The flanges tend to be triangular, but slightly convex in outline; there may be slight flanges flanking the blade, with a slightly concave face. It may occasionally have side-loops. The lower part of the blade may have a convex outline. Examples; Breuil, 1905, No. 27–9; *ABI* fig. 60, 79; occurs in Northwest French hoards such as Mont St. Aignan and Bernay; in Britain in hoards of the Taunton-Barton Bendish phase, and, rarely, in British LB II founders' hoards (e.g. Shoebury, Essex, B.M. 92/6–13, 3, PSA XIV (1892), with winged axes, etc.). Savory (1958, 22 ff., fig. 1, Maps 4, 5) includes examples of this type under the term 'trident pattern'.

The type does not occur in datable finds in Northern Europe, but is represented by occasional stray finds scattered from Belgium to Jutland (see List, p. 71).

IA2. *Trident-decorated.* The trident may have originated as a variant of the shield-and-rib type (our IA1f) or alternatively out of the Y ornamentation known both in Northwest Germany and in the West (*e.g.* in the Stibbard hoard). A Western palstave with Y ornament has been found in Scania (Lund Mus., 12880); Forssander, followed by Sprockhoff, regarded the Western Y palstaves as prototypes for the Northwest German Y-decorated type, though it would be difficult to point to any closed find in the West which would establish the Western priority of the type. The trident, however, is on distribution clearly a Western feature. It is one of the types listed and mapped for France by Savory (1950, fig. 5; list p. 169), who does not, however, distinguish between the broad- and narrow-bladed types. Trident palstaves occur in great concentration in Normandy and the Paris basin. British examples: *ABI* fig. 78; Bognor Regis hoard (*SAC* LXVI, 230). The type is rare in Ireland, but one (looped) occurs in the Annesborough hoard. An example imported from the west occurs in the Ostenfeld hoard in West Holstein (fig. 16: 7) and is accordingly dated to Kersten's IIA. The trident ornament is imitated on Northern palstaves, *e.g.* in the Ostenfeld and Frenderup hoards.

A variant (A2a) has only the upper part of the trident, having lost the lower rib (cf. a looped example from the Crediton, Devon hoard, M. A. Smith, 1959, fig. 7: 2); two western examples have been found in Scania (see List).

IA3. *Decorated with groups of short ribs* (fig. 16: 2, 4). This type has (a) a group of three to seven short ribs, or grooves leaving ribs between them, below the stopridge; they may be parallel, converging or diverging; and/or (b) a group of parallel ribs on the septum above the stopridge. Examples: Breuil, 1905, No. 36; Mont St. Aignan and Bernay hoards; in Northern Europe, Frøjk and Aadum Mose hoards in Denmark. The ribbed decoration is sometimes imitated on purely Northern palstaves of the same developed Montelius II, as at Ostenfeld (Hingst, 1956, *Abb.* 4 : 1–3).

Ribbed palstaves in Britain were discussed by Clark (1940, 52 ff.) who on the basis of the Stuntney and related hoards assigned the entire class of South English ribbed palstaves to the period of the carps tongue complex, i.e. LB II. The Frøjk and Ostenfeld hoards show, however, that this form of decoration was already in use in Montelius II on palstaves imported from the West. Clark's list of ribbed palstaves can be subdivided; the broad-bladed variety represented in the Northern hoards and at Mont St. Aignan beginning in the Middle Bronze Age and going on into the stage represented by the Barton Bendish hoard. The Nettleham (*ABI* fig. 83) and Stuntney form is a distinctive variety of narrow-bladed palstave, comparatively short and thick and often with a wedge-shaped septum, belonging to the Nettleham-Wilburton and carps-tongue groups, and does not belong to our Type Id3; it is simply the decorated variant of M. A. Smith's 'late type'.

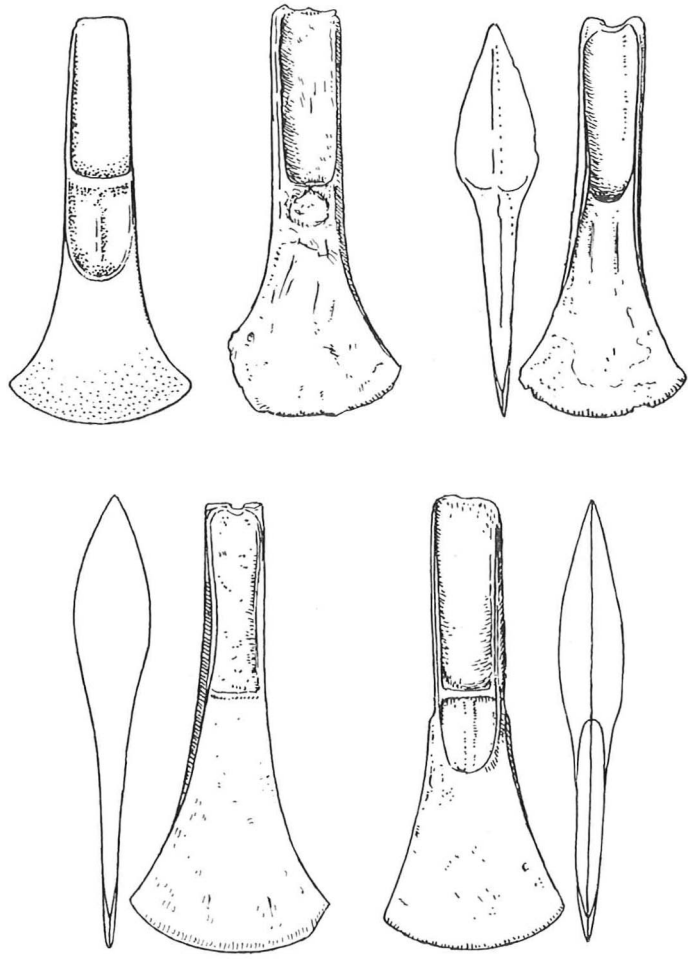

Fig. 13. Some Western palstaves from Pomerania. 1 Kr. Rügen; 2 Kr. Pyritz; 3 Viartlum, Kr. Rummelsburg; 4 Elmenhorst, Kr. Grimmen; 5 Krüssow, Kr. Pyritz. 1 : 2. After Kersten.

A variant (A3a) has short parallel ribs below the stopridge together with a single long midrib. An example occurs in the hoard from Epe in Gelderland (fig. 17) and a virtually identical specimen in the Blackrock hoard in Sussex (cf. below, p. 69). IA4. *Plain palstaves*, otherwise similar to A 2 and A 3, but without facial ornament.

Unlooped examples of a type common in Britain and Northwest France occur in hoards in the Netherlands and North Germany (Voorhout, Rülow) of early Montelius II, and in stray finds; one is in the Ostenfeld hoard of later Montelius II. The Britannico-Sequanian type merges by imperceptible degrees into Sprockhoff's 'Northwest German plain palstave' group (1941, 44, map *Abb.* 35a), which may be regarded as Northwest German imitations of the Western form: this deriv-

ative type is also common in the Netherlands. The Dutch-Northwest German plain palstaves are in general less angular in construction than British-Northwest French palstave; the cross-section of the upper part, for example, loses its angular H form and becomes a double U (Butler, 1963).

Class IB. Palstaves with side-flanged blade. The prototype of this form is the 'Northwest European' stopridge axe (Megaw and Hardy, 1938, fig. 15c, Pl. LIV: f; Sprockhoff, 1941, Taf. 36c; 2, 4) (fig. 11a) becoming a palstave (*IB1*) with a slight increase in the thickness of the blade below the stopridge. The cross-section of the blade is distinctly concave or H-shaped. There is often a medial rib on the blade (*IB1b*). In later (*IB2*) examples the upper part of the axe tends to become narrower and the stopridge more massive; the midrib may be absent (*IB2a*) or present (*IB2b*). Sprockhoff's *Abb.* 60 illustrates the evolution entirely with examples found in North Germany, but it is unlikely that the evolution occurred in that region, the type being much more common in the West.

Examples:

IB1a: ABI fig. 57; Sprockhoff, 1941, *Abb.* 36: 2–4, *Taf.* 24: 8.
IB1b: B.M. BAG, fig. 50; Sprockhoff, 1941, *Abb.* 36: 14.
IB2a: Breuil, 1905, No. 13: Portsmouth, Hants, *Arch.* LXXI, 139, fig. 4 (looped).
IB2b: Breuil, 1905, No. 15, 16; Sprockhoff, 1941, *Abb.* 36: 10, 12. Rülow hoard, Sprockhoff, 1941, *Taf.* 27: 8. Looped: ABI fig. 77; in Denmark, Frøjk hoard, late Period II (fig. 16: 3).

Class II. *Narrow-bladed palstaves.* The long, almost parallel-sided blade is characteristic. The flanges are generally triangular in outline; the stopridge may be straight or rounded.

Class IIA. *With rectangular blade cross-section* (tending at times to be slightly hexagonal).

IIA1. *Shield-decorated.* These are rare; but an example occurs in the Pontoile hoard (Breuil, 1905, No. 22); cf. *ABI* fig. 67 (Burwell Fen); Bedburg in the Rhineland (cast in Bonn Museum, 36.700).

IIA2. *Trident-decorated.* See discussion above, under Type IA2. British example: Bignor, Sussex (SAC LXXII, Pl. III: A2); Grunty Fen, Cambs., hoard with gold Tara-type torque, (CAS XII, Pl. III). In Denmark: Aadum Mose hoard (late M II) (fig. 16: 5); fragment in Late Tumulus hoard at Meikirch near Berne, Switzerland (fig. 16: 8). The ornament copied on Northern type of palstave: Ostenfeld and Frenderup hoards (late M II).

IIA3. *With short ribs below the stopridge* (Breuil, 1905, No. 35). See discussion above under Type IA3. The decoration is imitated on Northern narrow-bladed palstaves in the Ostenfeld and Frenderup hoards (late M II).

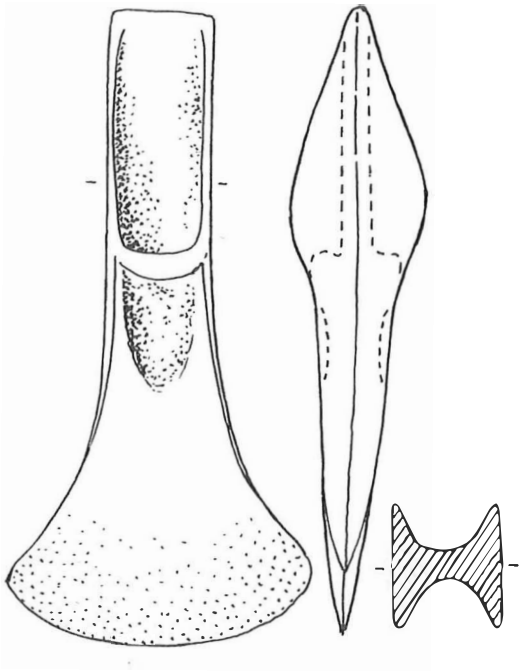

Fig. 14. Palstave from Uenglingen, Kr. Stendal, Altmark. 1 : 2. After Stephan.

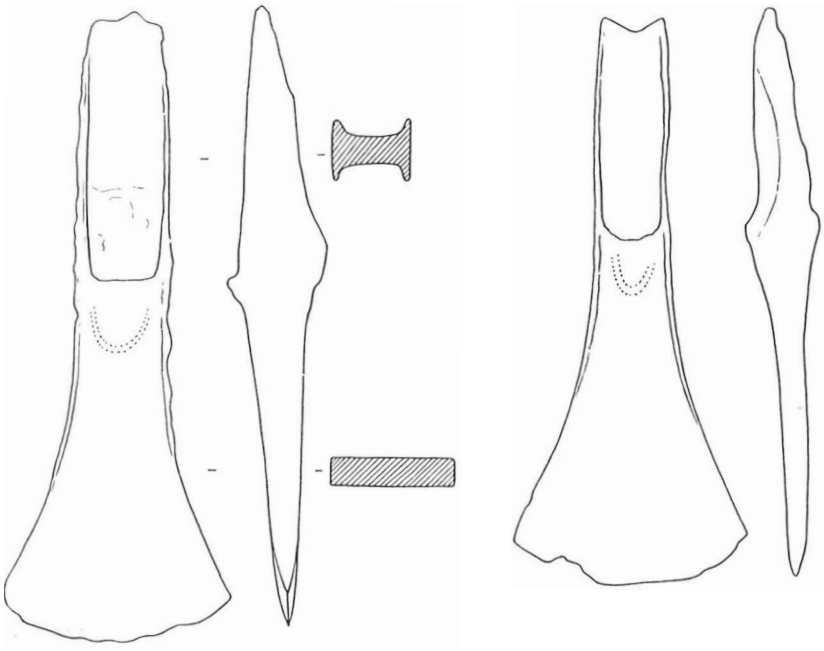

Fig. 15. Palstave hoard, Hönö near Göteborg, Sweden. 1 : 2. Mus. Göteborg.

IIA4. *Plain.* As in the Biessard hoard in Northwest France; British example: *ABI* fig. 74; Sprockhoff, 1941, *Abb.* 36: 6, 8, 11. In Northern Europe: Ostenfeld hoard (looped) (fig. 16: 6), Pamhule hoard (looped) (Pl. IX*a*).

Class IIB. *With side-flanged blade*, with or without medial rib. This 'Atlantic' form is, as Broholm suggests, to be regarded as the prototype for the most common variety of Northern work palstave in Period II; the Northern variety being embellished with a more elaborate midrib and usually with prominent side-arches (cf. Frenderup hoard). Possible Western exports are cited in the List below.

The Finds

Having established a working typology, we may now consider the context in which these palstave types occur in Northern Europe.

A considerable number occur in hoards. These fall into several distinct chronological phases.

The *earliest* phase is defined by a series of hoards extending from the coast of South Holland to the Pyritz district east of the Oder, and southward as far as Habsheim in Alsace, which have been conveniently assembled and discussed by Sprockhoff (1941, 45 ff.). 'Ilsmoor horizon' (from the hoard in Kr. Stade) would be a convenient term for this hoard group, details of which are given below, p. 72–3, no. 1–10.

Broad-bladed, shield-decorated palstaves of our Class IA1b–c occur in no less than nine of these hoards. Not one of the palstaves in these hoards is looped. Stray finds of this type also occur in North Germany, and occasionally in Denmark and South Sweden (Map V).

Lissauer (1905, 799 ff.) classified these shield palstaves as a North German variety, Janssen (1935) endeavoured to demonstrate their evolution *an Ort und Stelle* in North Germany, and M. A. Smith (1959, 165), impressed by their frequent association with flanged axes, is also inclined in this direction. Forssander, Sprockhoff, and Hachmann (1957a; 1957b, 50–1) accept their Western origin. We believe that the last-named writers are correct, for possible prototypes for such palstaves are quite unknown in Northern Europe. As mentioned above, an Irish origin is probable for the shield-palstave family; it is only in Ireland that the earliest forms are well represented. The development is continued in Britain and Northwest France.

On the other hand, some of the North German hoards furnish clear evidence that the shield palstaves in them were actually cast locally. The Stade hoard (v. p. 72) contains one shield palstave and a number of palstaves of Northwest German type; all are unfinished castings in exactly the same state, together with cakes of ingot metal, and there is no reason to doubt that both types of palstave were cast by the

same hand on the spot. The Ilsmoor hoard (fig. 10) is a merchants' hoard of objects ready for sale, and includes both shield palstaves, Northwest German palstaves, and a Northern massive shaft-hole axe. The Pyritz hoard (fig. 12) is composed entirely of imported Western palstave types, but the palstaves are unfinished castings which must also be presumed to have been made locally. The explanation suggested by Sprockhoff, which is undoubtedly the correct one, is that these hoards represent the activity of itinerant smiths in North Germany. (The Habsheim hoard in Alsace has the same character, being composed partly of shield palstaves and partly of the Rhone type of flanged axe). The Voorhout hoard in South Holland (fig. 11) consists mainly of shield and other 'Western' palstave types; its special significance we shall discuss in greater detail below.

Other Western types of palstaves represented in the Ilsmoor horizon include side-flanged palstaves of our Type IB (Ilsmoor, Rülow) and plain palstaves of Type IA4 (Rülow, Voorhout). High-flanged stopridge axes also occur commonly in the Ilsmoor horizon, appearing in the Voorhout, Stade, Ilsmoor, Neukloster, Babbin, Hüvede and Rülow hoards. The Neuhaldensleben hoard (Pl. V*a*) has a palstave of a type not otherwise represented in the hoard group, essentially narrowbladed but with the blade tips splayed out widely, and a massive projecting stopridge (Sprockhoff, 1941, Taf. 28: 2).

The 'Northwest German' type of palstave found in two of the same hoards – Ilsmoor and Stade – is large, thinnish and moderately broad-bladed, with a slightly concave face bearing a large Y ornament; the sides bear a prominent plastic arch-shaped ornament, a feature which also appears on some shield palstaves in the same hoards, and sometimes also on shield palstaves in France and Britain. It seems likely that this arch ornament, (which in Broholm II became popular in South Scandinavia, and was used on other types of palstaves including the 'elegant weapon palstave' and on socketed axes) is derived from the profile of the nicked-flanged axes.

This 'Northwest German Y palstave' is the earliest datable palstave type which is distinctly a product of the broadly North European region, and is chronologically important. Forssander (1936, 216–10) pointed out that it occurred in distinctly earlier finds (citing Ilsmoor and the well-known Danish hoard of Valsømagle) than the standard Nordic Montelius II palstaves, which are obviously derived from it. Sprockhoff (1941, 70 ff.) and Hachmann (1957) have developed this argument and illustrated further examples (note particularly the grave find from Tensbüttel, Kr. Süderditmarschen, Schleswig-Holstein, Hachmann, *Ibid.*, *Kat. Nr.* 231, *Taf.* 17: 14). The form, being a comparatively rare one and evidently short-lived, helps to confirm the synchronization of Broholm I (Montelius IIa), the Ilsmoor horizon, Hachmann's 'Late Wohlde' Horizon IV, with the first stage of Western European palstave manufacture. The westernmost find of a 'Northwest German Y palstave' is a stray example from Emmercompascuum, Gem. Emmen, Drenthe (Pl. VII: 1).

Most of the shield-palstaves of the Ilsmoor horizon closely resemble in size and form our South English-Northwest French variant (Type IA1c). Some are cer-

tainly actual imports from this area, and others evidently copies made on German soil by migrant smiths. A special case is represented by the Voorhout hoard (fig. 11) found near the coast of South Holland. It included shield palstaves; plain palstaves; a narrow stopridge axe; a parallel-sided flanged axe with high, rather thin flanges and without a stopridge; and one flanged axe of very unusual form, long and very narrow, parallel-sided in its upper half, and with its lower half rather widely splayed and unflanged. There is also a lugged chisel or 'trunnion celt' (see Chap. VIII). The hoard is apparently a founder-merchant's hoard, and the lugged chisel probably one of the smith's own tools. The Voorhout objects are very badly corroded and it is difficult to be certain whether their battered edges are the result of use or of their poor state of preservation.

Most of the shield palstaves in the Voorhout hoard agree very closely with those of our 'North Welsh' variant (IA1b) in size and form, and compare very well with those in the hoard from Acton Park, Rhosnesney, Denbighshire (Grimes, 1951, fig. 65)[1] which is a hoard of unfinished castings.

The connections between Voorhout and Acton Park are further strengthened by the peculiar narrow flanged axe in the Voorhout hoard already referred to; three examples of a flanged axe with many similar features, and constituting the only approximate parallels which seem to be known to the Voorhout specimen, were found in the Acton Park hoard. Lugged chisels like the Voorhout example are also known in North Wales (see below, Chap. VIII). On the whole it seems as if the Voorhout hoard can be attributed to a travelling smith from North Wales.

Another Welsh connection with Northern Europe may be noted in a rare form of transitional flanged axe-palstave from Bremke, Kr. Göttingen (Sprockhoff. 1941, *Abb.* 61: 5) which may be compared with a number of examples from the hoard at Bettys-yn-rhos, Denbighshire (Grimes, 1951, No. 527; Davies, *AC* 1937, 335), which also contains a high-flanged stopridge axe.

The hoards of the Ilsmoor horizon were assigned by Sprockhoff to the earliest phase within Montelius II in North Germany. Hachmann (1957a, 130–1, 1957b, 50–ff.) places them in his Horizon IV, contemporary with Broholm I and with Tumulus B2; which seems sound. The massive shafthole axe in the Ilsmoor hoard, and the Northwest German palstave from the Danish hoard at Valsømagle, establish a synchronism with Broholm I in Denmark; Tumulus imports in the Ilsmoor-phase hoards are predominantly of Earlier Tumulus character. The small personal hoard from Hausberge, Kr. Minden (Pl. V*b*) at the Weser crossroad between East-West and North-South routes, with its richly decorated shield palstave, and its dagger and flanged axe of Tumulus form, is chronologically important. The Rülow hoard

[1] Note that the trident palstave, illustrated by Sprockhoff (1941, *Abb.* 39: 5) with the Rhosnesney hoard does not actually belong to the hoard; cf. references cited in list below.

(Pl. VI*a*) contains a number of flanged and stopridge axes and early Tumulus ornaments. Finally, the small recently published hoard from Halle in Westphalia (Lange, 1959, 268–70, *Abb.* 1) contains, along with a fragment of a shield palstave, a fragmentary narrow highflanged axe of Tumulus Bronze Age model and a broken decorated spearhead related to the type found in the Cascina Ranza hoard.

It seems beyond all reasonable doubt, from any detailed comparison of their contents, that the hoards of the Ilsmoor horizon are, *as a group*, earlier than the characteristic finds of Broholm II-Montelius IIbc, and likewise earlier than the equivalent phase of the Ilmenau Culture or '*ältere Lüneburger Bronzezeit*'. They should, therefore, be contemporary on the whole with the later graves (the Wohlde phase) of the Sögel group, and with Broholm I, Montelius IIa, in Denmark, as Hachmann has argued. It follows from this that the *terminus ante quem* which they provide for the origin of the 'shield' palstave of our types IA1b–c is not some vague point within Montelius II (as M.A. Smith, 1959) but rather its very beginning – for there is actually nothing that could be called 'Montelius II' in any sense which is earlier than this Ilsmoor phase. It follows that the 'shield' palstave has a history somewhere in Western Europe which goes back from that point. So much must, we believe, be accepted as fact. Since the place of origin of the 'shield' palstave cannot be southern England (M.A. Smith), and it is equally certain that it cannot be anywhere in the North European area, we are left with Ireland, Wales, and Northern France as possible homes. A Welsh exportation is indeed demonstrable, in the Voorhout-Acton Park connection. The greater number by far of the Western palstaves found in the Ilsmoor horizon consists however, of southern English or northwest French exports, or of local copies of such exports. Those areas flanking the English Channel must therefore have been manufacturing palstaves of the type represented, for example, in the Burley, Hants. hoard, in or even before the time represented by Broholm I.

A *second phase* of Britannico-Sequanian palstave exports to Northern Europe is defined by palstaves of Western type appearing in hoards assigned to Broholm II in Denmark and Kersten's IIA and IIB in Schleswig-Holstein. The dated examples are much fewer than in the preceding phase, but they are sufficient to provide a sampling of the sort of palstaves then being exported from Atlantic Europe.

In Denmark and Schleswig-Holstein there are two complex hoards of Later Montelius II containing imported Western palstaves, and two small hoards, each consisting of two palstaves only, which are assigned to the same period.

One is the find from Frøjk near Holstebro in Northwest Jutland (Broholm, *DB* 1, M. 80 and 81). Although published as two separate hoards, the find, as investigation by the National Museum showed, was certainly a single deposit, parts of which happened to be turned up by the plough at different times. It is regarded as a votive deposit, but the types are all chronologically consistent and belong to Bro-

holm II. The second is a good-sized founder's merchant's hoard from Ostenfeld, Kr. Rendsburg, representative pieces from which have been illustrated by Kersten (1936, Taf. VI–VII) and Hingst (1956).

The third hoard, consisting only of two western palstaves, was found at Aadum Mose near Ringkøbing (fig. 16: 4, 5) and is unpublished; the fourth from Pamhule near Haderslev in Eastern Jutland (Pl. IX*a*) (Broholm *DB* 1, M. 83), contains one Western and one Northern palstave. These four hoards contain altogether eight palstaves of Western origin, together with palstaves which represent Northern imitations of Western forms, and others of Northern form which imitate Western decorative features.

The Western types represented are:

1. *Broad-bladed*

IA2 (trident ornament); Ostenfeld (fig. 16: 7; Hingst, 1956, *Abb.* 3: 4). This palstave has incipient side-flanges flanking the trident, but these die out without extending far down the blade.

IA3 (ribbed ornament below stopridge and/or on septum); Frøjk, Aadum Mose. The Frøjk hoard has two examples, (1) with four slightly diverging grooves, leaving ribs between, below a rounded stopridge (fig. 16: 1); cf. Pontoile (Breuil, 1905, fig. 36) and Mont St. Aignan; (2) with three short slightly converging ribs below an irregular depression representing probably a debased 'shield'. The reverse side is differently decorated, with a midrib flanked by two slight depressions. There are five short ribs on the septum (fig. 16: 2).

IB2b (Side flanges and midrib), looped: Frøjk (fig. 16: 3).

2. *Narrow-bladed*

IIA2 (trident ornament): Aadum Mose (fig. 16: 5).

IIA4 (plain); (1) Ostenfeld; has a mis-cast sideloop (fig. 16: 6); (2) Pamhule; also with badly cast sideloop. The blade has been drastically shortened by grinding down (Pl. IX*a*).

These finds, together with stray finds of similar palstaves in Northern Europe, are plotted on Map VI (cf. List below).

The typological differences between these eight Western palstaves of the Period II hoards and those of the earlier phase are striking. Looped palstaves are found in the later phase, but not in the earlier. Narrow-bladed palstaves are likewise absent in the earlier phase, but occur alongside broad-bladed types in the later. Decoration with groups of short ribs also appears only in the later phase. Typical

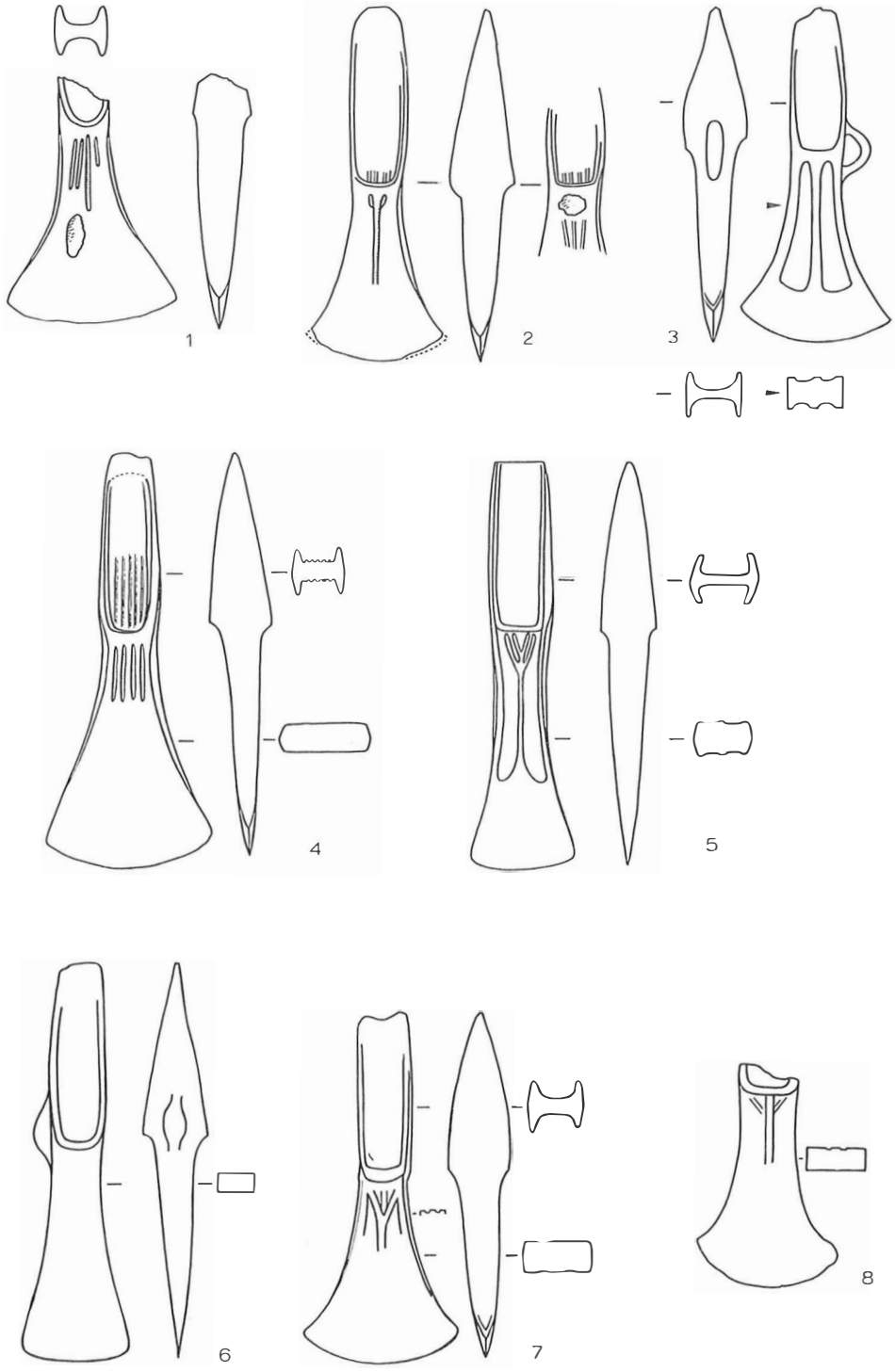

Fig. 16. 1–7 palstaves from Northern Period (Broholm) II hoards in Denmark and Schleswig-Holstein. 1–3 Frøjk (NW Jutland); 4–5 Aadum Mose (NW Jutland); 6–7 Ostenfeld, Kr. Rendsburg (Schl.-H.). 8 Meikirch, Kt. Bern, Switzerland (see p. 57). 1 : 3.

shield-decorated palstaves of our Type IA1b–c, which were so characteristic in the earlier phase, are not represented in the four hoards of the later phase, although they probably went on being made and used (cf. Mont St. Aignan, Neuhaldensleben) alongside more evolved types.

These Northern imports must be derived from the Britannico-Sequanian palstave industry best represented in Northwest French hoards like Mont St. Aignan[1] and Baux-Sainte Croix (Eure)[2] (Savory's 'Atlantic' Middle Bronze Age industry) and in Britain by hoards such as Bognor, Sussex (*SAC* LXVI, 230), Billingshurst, Kent, and Burnham, Bucks. (*Antiq. J.* XIII, 55). These hoards contain both palstaves comparable to those of the Northern Later Montelius II hoards and also, often, shield palstaves like those of the previous stage. The Northern finds establish beyond doubt that, whatever difficulties may exist in determining the lower limits of the 'Atlantic' palstave industry, this Western palstave industry was flourishing at a time when developed Montelius II types were in use in Western Jutland.

Our second-phase palstave map shows a significant difference in distribution compared with the earlier phase. There are finds in the Low Countries and a few in Germany, probably suggesting the continued use of the Rhine-Westphalian route to Hanover and Central Germany; but there is no longer the deep penetration into East Germany. Instead there is a concentration along the west coast of the Jutland peninsula, with two finds in West Holstein (Ostenfeld, Albersdorf) and three in Northwest Jutland, near the Ringkøbing Fjord (Aadum Mose; Tim s.) and the Nissum Fjord (Frøjk). There are also a few finds in East Jutland and Scania.

Mention may also be made of five additional Western palstaves in the Aarhus Museum, three of Type II (H. 153–5) two of Type I (H. 148, 7425), one of the Type IA1c in the National Museum of Copenhagen (B. 2424; fig. 62: right; Broholm, DB Pl. 15: 3), and two Type I palstaves (one with Y ornament, one with ψ in the Lund Museum) (12880 and 12883, Sjöcronska coll), treated by Forssander as presumably from Scania), without recorded provenance.

The West Jutland coastal group is the most important, and suggests coastal trading from the English Channel region. When finds of other more or less contemporary types are taken into account (especially the spearheads from Drenthe and West Holstein, Map VII; the trapeze-hilted rapiers from the Elbe Mouth region, Map. VIII; the Atlantic rapier from Northwest Jutland, p. 112 ff.) the impression of seaborne trade in the later Middle Bronze Age is reinforced.

The character of the finds has also changed. We no longer find merchants'

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[1] Deglatigny, 1919–20, 7 ff. Contains palstaves of our types IA1c, IA1f, IA3, IA4, with two rapiers (one with two rivets and trapeze-shaped hilt, the other with metal hilt with 3-arc base).

[2] Coutil, *Normandie*, Pl. V: 1–11. Palstaves of Types IA3, IA2, IIA2, spearheads with ridged socket, pins with ribbed neck of late Tumulus character.

hoards of purely Western or mixed Western and Northern-Northwest German types, but instead, in two cases, two or three Western palstaves in large hoards consisting overwhelmingly of products of the Northern bronze industry. The Western palstaves probably arrived individually as incidents in the course of trade, but not as the result of itinerant merchant's activities as in the earlier phase.

Both in the flourishing Northern bronze industry of Later Montelius II and in the West, the trade in metal products was conducted on a larger scale than formerly. The size of hoards provides a crude index of this; whereas in the earlier phase hoards rarely included as many as 20 objects, and were of a size which a peddler could carry on his back without difficulty along with his other possessions, finds containing 40 or 50 objects are now not uncommon (e.g. Ostenfeld, ca. 50 objects, of which 33 are palstaves; Pontoile, 54 palstaves; Gloddaeth, 'about 50' axes; Southampton (Pear Tree Green), 42 palstaves; Bognor, Sussex, ca. 50 palstaves). Neither in Denmark nor in Northwest Germany is it to be supposed that in Later Montelius II there was a substantial market for imports of finished British or Northwest French bronzes. At the same time, the bronze-smiths were ready to provide imitations of imported forms, and it is evident that in the case of palstaves a large class of Northern narrow-bladed types, represented in hoards in Denmark and Schleswig-Holstein as Hohenfelde, Kr. Steinburg (Stehn, 1952, 8ff), Frenderup, Ostenfeld, Kappeln, Scharsdorf-Preetz, and Frøjk, differ only in minor details from the Northwest French narrow-bladed type, and are essentially Northern copies of the Western form[1]. In some cases Western ornamental features were copied on Northern palstaves. Representatives of this type are found in the Ostenfeld hoard, where six palstaves of Northern form have trident ornament[2] (five of these also have groups of ribs on the septum), and another has a group of short ribs on the face below the stopridge (Kersten, 1936, Taf. VI; Hingst, 1956; cf. Kersten, 1958, *Taf.* 1: 7, from Blandow, Kr. Rügen).

An important technical parallel between the palstave industries of North and West is provided by the occasional use of bronze moulds in the two areas. Northern examples include a half-mould from near Assens, Fyn (*DO* IV, No. 432, for making Northern palstaves of the type *DO* III, No. 101); a similar half-mould found near Lüneburg (de Mortillet, 1903, fig. 821); and another from a Pomeranian hoard of Montelius II at Vorland, Kr. Grimmen (Hindenburg, 1925, 104 ff., *Taf.* X; Kersten, 1958, *Taf.* 23). In the North as in the British Isles the bronze mould appears to be a rarity compared with the use of stone or clay for that purpose; the appearance of the bronze-mould technique in both provinces is not likely to be pure coin-

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[1] Kersten (1936, 78) groups all these derivatives of the 'Atlantic' narrow-bladed palstaves under his series II, 'North German type', stressing their western derivation.

[2] Cf. the Frenderup hoard, Broholm, *DB* I, M. 37.

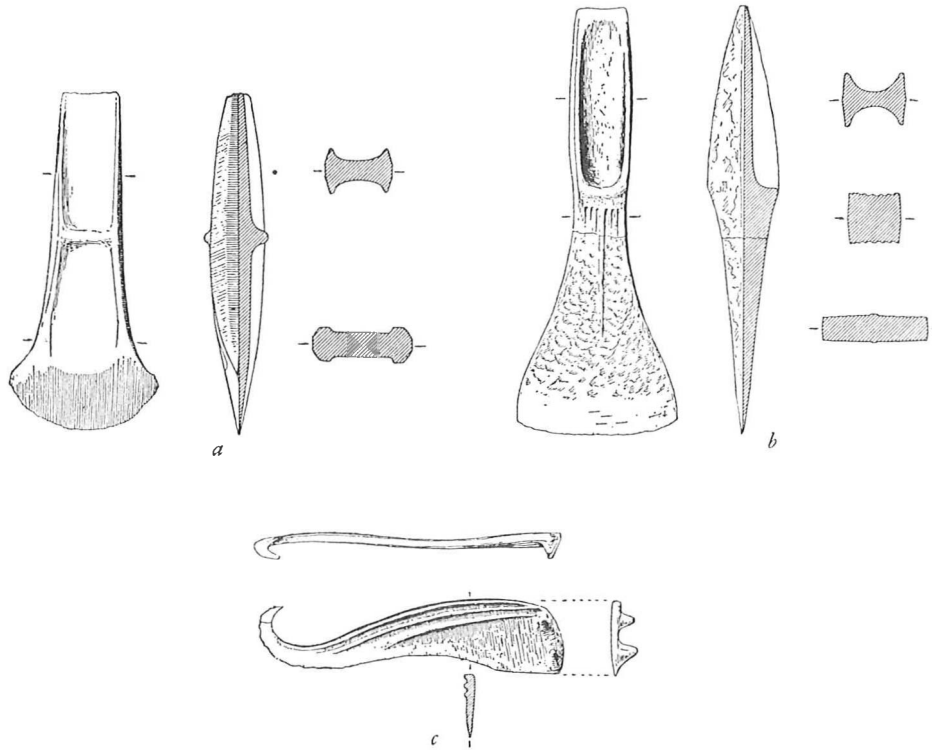


Fig. 17. Hoard from Epe, Gelderland. 1: 3. = Pl. VIII*a*. RMO Leiden.

cidence. British bronze palstave moulds have been listed by Hodges (1954, 80); their main distribution is in South England, with strays in Yorkshire and Wales. Hodges suggests that they are all Late Bronze Age. But the North European palstave moulds are not later than Broholm II, so that it is clear that the technique would have been available for Middle Bronze Age British smiths; M. A. Smith (1959, 168, 168 ff.) points out that the British bronze palstave moulds are in fact for distinctively British MBA palstave types. The technique was, of course, continued in use in the Late Bronze Age; in Britain, bronze moulds occur for socketed axes and socketed gouges. The practical use of bronze moulds has been demonstrated by Drescher (1957) with a brilliant series of experiments, which dispose once and for all of the myth that bronze moulds could not be used for the direct casting of useful bronze objects.

After Montelius II, the exportation of palstaves from the West to Northern Europe appears to dwindle to relative insignificance, and only occasional finds can be cited from later periods. Indeed, in Montelius III there is not a single grave or hoard in Scandinavia or North Germany which contains a Western palstave.

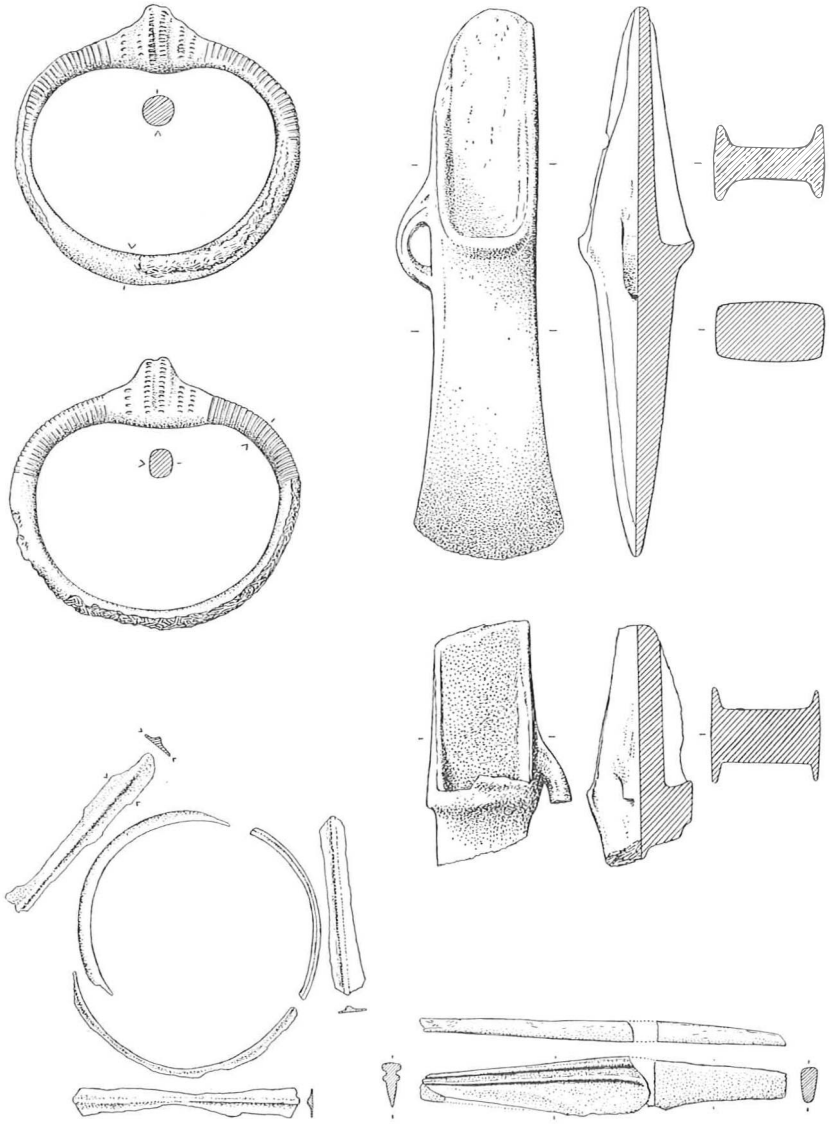


Fig. 18. Hoard of 1900 from Bargeroosterveld, Drenthe. 1: 2. Mus. Assen.

Unless the small, narrow-bladed specimen (Type IIA4) from a rich grave on Brandstrup Mark in Viborg Amt (Broholm, DB I, Grav 1972) is a Western export. This small palstave is Western in its general character, *i.e.* in its squared-off angles, though we cannot easily put our finger on more or less identical specimens in Britain. It could be Breton.

In the Netherlands, however, occurs one closed find, to which we have elsewhere called attention (Butler, 1959, 136 ff., fig. 5; 1961, 119, Pl. XIV: 2), the small hoard from Epe on Gelderland, which is of special interest. It is certainly a reliable

association, both from the account which accompanied the hoard when it was received in the Rijksmuseum van Oudheden (letter of E. F. J. Weerts to RMOL, 8 February 1865) and from the identical patina of the three objects. The palstave is quite similar to specimens in the Blackrock hoard in Sussex (C. M. Piggott, 1949, 114–5, fig. 3, third from left) and the Barton Bendish hoard in Norfolk (*Inventaria* G.B. 7: 2); it may well have come from a workshop in southern or eastern England. This palstave was broken in two before deposition, just like the contemporary one from Hollingbury Hill in Sussex (Curwen, 1954, 202, with further refs.). With the Epe palstave was a two-knobbed sickle – a type known one the one hand in the Somerset industry of the later Middle Bronze Age (M. A. Smith, 1959, 144 ff., fig. 1: 10, with further refs.), and in the other in the Tumulus Bronze Age in southern Germany and neighbouring areas; it is Continentally dated by hoard-finds extending from Hungary (Dunapentele-Kosidlerpadlas: Moczolics, 1957, 123, *Taf.* XXII: 2) to Kreuznach on the Rhine (Dehn, 1941, I, 40–1, *Abb.* 19, II, 31), always with pre-Urnfield types. The Epe specimen has three ribs, like the Kreuznach specimen; the strongly re-curved tip of the Epe sickle is not an original feature, but due to re-working of a much-used and much resharpened blade. The Epe sickle seems to be a piece of Continental manufacture; the distribution of two-knobbed sickles, as now known, suggests that they reached Epe, and Britain as well, along the Rhine route. The third piece in the Epe hoard is a stopridge axe with high, thick, faceted flanges; it is a very late example of its type, and is seemingly a product of local industry in the Northern part of the Netherlands (Butler, 1963).

While neither the sickle nor the stopridge axe can by themselves be dated in Continental terms with great precision, it is clear that they are both Middle Bronze Age products; thus the Epe hoard provides a so far unique example of a British object of the Taunton-Barton Bendish phase (M. A. Smith's ornament horizon) in a Continental closed find.

An interesting contrast is provided by another Dutch hoard, also published by the present writer (Butler, 1959, 139–40, 1960, 205 ff., fig. 9, Appendix I: 1; 1961, 101 ff., fig. 49, Appendix No. 5), the hoard of 1900 (one of three hoards from the same locality) from Bargeroosterveld, Drenthe. Here the palstaves (one complete, the other a fragment of a piece broken up in antiquity) were plain looped narrow-bladed palstaves, of the form which M. A. Smith has characterized as the 'late type'. Identical palstaves occur in hoards such as Wilburton and Nettleham, which are typical of the Wilburton industry in southern Britain. The associations at Bargeroosterveld include a pair of the *Nierenringe* of the type which Sprockhoff (1937, 47, *Taf.* 18; 1941, 88, Taf. 38; 1952, 119–20, *Abb.* 1; cf. F. C. Bath, 1953–5, 79 ff., *Abb.* 1: 4ab) has identified as being characteristic of the Ems-Weser region in Montelius IV. The horizon is that of the Rethwisch hoard (Jacob-Friesen, 1963, *Abb.* 298).

While this work was in press, notice appeared (Nowothnig, 1962a) of the find of another British-looking 'late type' palstave in a small hoard, this time in the Weser area, at Barrien-Bülten, Kr. Grafschaft Hoya. The palstave was found together with a bronze knife with metal handle of the 'double T' form. This is a rare variant of the 'Urnfield' knife family; it is known principally from finds in the Netherlands and Nordwest Germany, and, like the *Nierenringe* mentioned above, it is a *Leitform* of Sprockhoff's *Ems-Weser Kreis* (Sprockhoff, 1937, 27–8, *Taf.* 3: 15); an exceptional find in Denmark is dated to Montelius IV (FNMA 1933, 43; Broholm, DO IV 27). The Barrien-Bülten find therefore tells the same story as the Bargeroosterveld find of 1900.

Northern Palstaves in Britain

Imported North European palstaves are extremely rare in Britain. One example, from Driffield, Yorkshire (*Ant. J.* III, 370–1) was apparently found in a grave, with other grave goods now lost. It is a typical example of the 'common North European palstave' (Forssander 1936, Abb. 41: 3, 216 ff.), the commonest form in Denmark, South Sweden and North Germany. Sprockhoff's distribution map of the German finds (1941, Abb. 59) shows that they cluster thickly in Schleswig-Holstein, Mecklenburg and the Ilmenau province, but are rare west of the Weser.

The published account of the find is based on second-hand information more than half a century after the event. 'According to Mr. Robert Orr it was given to his father about 1870 by Mr. Christopher Bell, a cabinet-maker of Driffield, E. R. Yorks., and had been found some time before in opening a barrow on the outskirts of that town, known as the King's Mount or Mound, or else in the King's field. He is under the impression that more grave goods were found as well as a skeleton, and that they were shared among some of the burgesses of Driffield.' *Ibid.*, 370.

Another palstave of the same type, but with richly faceted sides, is recorded in the Index of Bronzes as from Wellington, Somerset, but is described as having been 'purchased in London'. Were the find-spot better documented it would be a welcome addition to the list of importations from Northern Europe which concentrate so remarkably in Somerset. Faceted palstaves of this type are common in the Northern cultural area (Janssen, 1934, 54 ff.; Kostrzewski, *Real.*, III, 164); the faceting is commonly attributed to Irish influence, but it is undoubtedly an inheritance from the trade of the earlier Middle Bronze Age and not a fresh influence acquired during Montelius II. Similar faceting appears on 'Northwest European' stopridge axes, and occasionally on shield palstaves like that from Hausberge discussed above, but is not a feature of mature Western palstaves.

LIST OF BRITISH-NORTHWEST FRENCH PALSTAVES IN NORTHERN EUROPE

(*cf.* Map III and IV).

(Details of and references to the hoards are given separately below, pp. 72–3.)

Type IA1b ('Welsh' shield-ornamented).

1. South Holland. *Voorhout.* Hoard.

Type Ia1c ('South English-Northwest French' shield-ornamented).

(a) in hoards:

2. *Pyritz.* P. 73, No. 10.
3. Kr. Lebus. *Seelow.* P. 73, No. 6.
4. Kr. Lingen. *Hüvede.* P. 73, No. 7.
5. *Neuhaldensleben.* P. 73, No. 5.
6. Amt Stargard (Meckl.) *Rülow.* P. 73, No. 9.
7. *Stade.* P. 72, No. 2.
8. Kr. Stade. Neukloster. *Ilsmoor.* P. 73, No. 3.
9. Kr. Minden. *Hausberge.* P. 73, No. 4.
10. *Halle* (Westphalia). Fragment. P. 73, No. 8.
11. Sweden. *Hönö* nr. Göteborg. P. 73, No. 11.

(b) stray finds of *Type IA1c:*

12. Kr. *Pyritz.* Fig. 13: 2. Kersten, 1958, No. 685.
13. Kr. Pyritz. *Krüssow.* Fig. 13: 4. Sprockhoff, 1941, Taf. 25: 9.
14. Kr. Sorau. *Hohenjeser.* Cited but not illus. by Bohm, 1935, 39, 122 (Nr. 229).
15. Kr. Wiedenbrück. *Lintel.* Cited without illustration by Lange, 1959, 270.
16. Kr. Greifenhagen. *Borin.* Kersten, 1958, *Taf.* 55: 574.
17. *Kr. Rügen* (no exact provenance). Kersten, 1958, *Taf.* 17: 227.
18. Kr. Stendal. *Uenglingen.* Fig. 14. Stephan, 1956, 10, *Taf.* X: 1.
19. Hjørring Amt. Borglum H. Taars s. *Taars Klaer.* NMC, B. 3374.
20. Aarhus Amt. Ring H. *Viby s.* Mus. Aarhus, 5956. Pl. VIII: 3.
21. Denmark. *Find-spot unknown.* NMC, B. 2424. Broholm, DB II, Pl. 15: 3. Pl. VI*b*: 3.
22. Scania. *Stattana* nr. Hälsingborg. (triangular depression below stopridge). Mus. Lund, 26398. Forssander, 1936, Abb. 41: 1; Sprockhoff, 1941, Taf. 34: 1.
23. '*Aus dem Lüneburgischen*'. (Ribs in shield). Mus. Hannover. Sprockhoff, 1941, fig. 61 : 7.
24. Belgium. Prov. Limburg. *Tongres.* (Ribs in shield). Mus. Brussels, 10100).
25. Netherlands. Gelderland. *Nr. Nijmegen.* Pl. VII: 6. Mus. Nijmegen.
26. Netherlands. Drenthe. *Gem. Norg.* Pl. VII: 4. Mus. Assen, 1908/VII. 3.

Type IA1f ('Shield and rib' ornament).

27. Kr. Süderditmarschen. *Albersdorf.* Sprockhoff, 1941, Taf. 25: 1. (Ribs in shield).
28. Nr. *Giessen.* Lindenschmidt, Auh V, 1, Heft 1, Taf. IV: 44. (Ribs in shield).
29. Belgium. Prov. Luxembourg. *Exact find-spot unknown.* Mus. Brussels.
30. Denmark. Randers Amt. Hind H. *Tim s.* Pl. VI*b*: 1. NMC 26101. DO III, No. 104.
31. Kr. Bielefeld. *Brackwede.* (Rib in shield). Mus. Bielefeld, 1877,27. Sprockhoff, 1941, *Taf.* 25: 5.
32. Kr. Göttingen. *Bremke.* Mus. Hannover. Sprockhoff, 1941.

Type IA2 (Trident-ornamented).

33. Kr. Rendsburg. *Ostenfeld.* Hoard (fig. 16: 7). P. 73, No. 12.
34. Belgium. Prov. O. Vl. *Waasmunster.* Mus. Brussels, 2134.

35. Netherlands. Gelderland. *Betw. Wijchen and Nijmegen.* (Ribbing on septum). Pl. VII: 23. Mus. Nijmegen, GNAC 23; Boeles, 1920, fig. 6.
36. Netherlands. Find-spot unknown (*prob. Nijmegen area*). Mus. Nijmegen, GNAC 3, ex Guyot coll.

Type IA2a ('Trident' without long rib).

37. *Denmark.* No exact prov. Mus. Aarhus, 7425.
38. Scania. *Valluf s.* (with miscast loop). Mus. Stockholm, 13378: 18Sk. Forssander, 1936, 282.
39. Probably *Scania.* No exact prov. Mus. Lund, 12883 (Sjöcronska Coll.) Forssander, 1936, 283.
40. Randers Amt. Onsild H. Svenstrup s. *True.* Pl. VIII: 2. Mus. Aarhus, 7283.

Type IA3 (With groups of short ribs or grooves below stopridge and/or on septum).

41. Ringkøbing Amt. *Aadum Mose.* (4 narrow parallel grooves on face, ribbed septum). Hoard (fig. 16: 4, 5). P. 73, no. 14.
42. Ringkøbing Amt. *Frøjk* Hoard. P. 73, no. 13.
(1) 4 shallow diverging grooves on face (fig. 16: 1). (2) 3 converging ribs on face, ribs on septum (fig. 16: 2).
43. Netherlands. *Prov. Overijssel.* No exact prov. Mus. Zwolle. Felix, 1945, No. 351, Abb. 176. (Note: hybrids between Type IA3 and other types are listed under the other types; e.g. several examples with ribbed shields in Type IA1c and IA1f; one with ribbed septum under IA2. For palstaves of Northern form with ribbed ornament, see p. 66.)

Type IA3a (with group of short ribs and one long rib below stopridge).

44. Netherlands. Gelderland. *Epe.* Hoard (fig. Pl. VIII*a*; fig. 17). P. 73, no. 17.

Type IB (with side-flanged blade).

45. Kr. Stade. *Ilsmoor.* Hoard. Pl. V*c*; fig. 10. Sprockhoff, 1941, Taf. 24: 8. P. 73, no. 3.
46. Amt Stargard (Meckl.). *Rülow.* Hoard. Pl. VI*a*. Sprockhoff, 1941, Taf. 27: 8. P. 73, no. 9.

Type IIA2 (Trident ornament).

47. Ringkøbing Amt. *Aadum Mose.* Hoard (fig. 16: 5). P. 73, no. 14.

Type IIA4 (Plain).

48. Kr. Rendsburg. *Ostenfeld* (with miscast loop). Hoard (fig. 16: 6). P. 73, no. 12.
49. Haderslev Amt. *Pamhule* (with miscast loop; blade heavily ground down). Hoard (Pl. IX*a1*). P. 73, no. 15.
50. Viborg Amt. Middelsum H. Vindum s. *Brandstrup Mark.* Grave (M III). Broholm, DB I, 173 (Grav 1972), Mus. Viborg, 963–75.
51. Vejle Amt. Torrild H. *Lindeballe s.* Mus. Aarhus, 5016 (Pl. VIII: 1).
52. North Holland. *Hilversum.* Pleyte, *Noord Holland*, II Pl. V; 1, 12–3.
53. North Brabant. *Breda.* BAI Groningen.

HOARDS CONTAINING BRITISH-NORTHWEST FRENCH PALSTAVES IN NORTHERN EUROPE

1. South Holland, *Voorhout.* Founders hoard. Mus. Leiden, h 08/10 (fig. 11). Palstaves Types IA1b, IA4; cast-flanged axes, 'Northwest European' stopridge axe, lugged chisel (19 objects). Sprockhoff, 1941, Taf. 26 (photo); Holwerda, 1908, 45 ff.; Butler, 1959, 132 ff., fig. 3; *Panorama der prehistorie* (Leiden, 1960), *Afb.* 14 (photo).
2. *Stade.* Hoard of unfinished castings. Museum Stade, 2296–2309. Palstave Type IA1c; 10 Y-ornamented Northwest German palstaves; cakes of founders metal. Sprockhoff, 1941, Taf. 30: Wegewitz, *Rundschau: Blätter für Heimatkunde*, No. 8 (1929).

3. Kr. Stade. Neukloster. *Ilsmoor*. Merchants hoard. Mus. Hannover (Pl. V*c*; fig. 10). 2 palstaves Type IA1c, one Type IB1, 7 Y-ornamented Northwest German palstaves, flanged axe with incipient stopridge, massive shafthole axe. Sprockhoff, 1941, Taf. 24; Hachmann, 1957, *Taf.* 45: 14–22, Taf. 46: 1, 2 (*Kat.* 318).
4. Kr. Minden. *Hausberge*. Personal hoard. Mus. Münster 29: 319 (Pl. V*b*). Palstave Type IA1c (faceted decoration on face and sides), 4-riveted trapeze-hilted dagger, narrow flanged axe. Sprockhoff, 1941, Taf. 29; Hachmann, 1957, *Taf.* 46: 3–5 (*Kat.* 362).
5. *Neuhaldensleben*. Personal hoard. Mus Magdeburg (Pl. V*a*). Palstave Type IA1c, another Western palstave, Bohemian palstave, spearhead with ridged socket. Kossinna *Magdeburger Festschrift*, 1928, 288 ff., Taf. 32: 10–13; Sprockhoff, 1941, Taf. 28: 2–5; Hachmann, 1957, *Taf.* 44: 8–11 (*Kat.* 401).
6. Kr. Lebus. *Seelow*. Founders hoard. Mus. Berlin. 2 palstaves Type IA1c, knobbed sickle, tanged sickle, founders metal, fragments of bronze. Bohm, 1935, 38, 39, 115 (Nr. 11), Taf. 9: 2, 4, 6, 11, 13: Sprockhoff, 1941, Taf. 28: 12.
7. Kr. Lingen. *Hüvede*. Mus. Hannover. Palstave Type IA1c, 3 stopridge axes. Sprockhoff, 1941, Taf. 28: 6–9.
8. *Halle* (Westphalia). Palstave (frag.), probably of Type IA1c; ornamented spearhead; fragment of flanged axe. Lange, 1959, 268–60, fig. 1.
9. Kr. Stargard (Meckl.) *Rülow*. Mus. Neustrelitz (Pl. VI*a*). Palstaves Type IA1c, IA4, IB2a; stopridge axe, flanged axes with incipient stopridge, spearhead, ribbed collar, Tumulus ornaments. Janssen, 1934, Abb. 4a–f (described as 'Grabfund'), Sprockhoff, 1941, Taf. 27 (described as 'Hort'). Hachmann, 1957, *Kat. Nr.* 263.
10. *Pyritz*. Hoard of unfinished castings. Mus. Stettin (fig. 12). 18 palstaves, Type IA1c and with varying stages in the degeneration of the shield ornament. Dorka, 1939, Taf. 30; Sprockhoff, 1941, Taf. 31; Kersten, 1958, No. 662.
11. Sweden. *Hönö*, near Göteborg. Mus. Göteborg (Fig. 15). 2 palstaves of Type IA1c.
12. Kr. Rendsburg. *Ostenfeld*. Founders hoard. (fig. 16: 6, 7). Mus. Schleswig, K.S. 14147. Palstaves Types IA2, IA4, IIA4; Northern Imitations of IIA3: Northern palstaves; knobbed sickles; other Northern M II types. Kersten, 1936, Taf. VI, VII (selection illustrated); Hingst, 1958.
13. Ringkøbing Amt. Hjerm H. Maabjerg s. *Frøjk*. Votive hoard. Part Mus. Holstebro, remainder NMC (fig. 16: 1–3). Palstave of Type IB2b (looped), 2 of Type IA3; Northern palstaves and spearheads; massive shaft-hole axe. Broholm, DB I, M. 80, M. 81; DB II, 98; DO III, No. 103.
14. Ringkøbing Amt. *Aadum Mose*. Mus. Ringkøbing 1581 (fig. 16: 4–5). Palstave Type IA3, palstave Type IIA2.
15. Haderslev Amt and H. Hoptrup s. Marstrup. *Pamhule Mark*. Mus. Haderslev, 4195–6 (Pl. IX*a*). Palstave Type IIA4 (miscast loop), Northern palstave. Broholm, DB I, 224 (M. 83).
16. Kr. Uelzen. *Masendorf*. Palstave, Type IIB (looped). MIV objects. Sprockhoff, 1934, Taf. 7. (Probably Nordic imitation).
17. Netherlands. Gelderland. *Epe*. Mus. Leiden. Personal hoard (Pl. VIII*a*; fig. 17). Palstave Type IA3a; sickle with two knobs; flanged stopridge axe.
18. Netherlands. Drenthe. *Bargeroosterveld*. Mus. Assen. Probable votive hoard. Two palstaves Curwen's Type C; Northwest German *Nierenringe;* small single-edged knife; fragments of spiral armring? Butler, 1959, 139 ff., fig. 6; 1960, 207 ff., 226, fig. 9; 1961, 105 ff., fig. 49; also pp. 123–4. (Fig. 18).
19. Kr. Grafschaft Hoya. *Barrien-Bülten*. Palstave Curwen's Type C, knife with double T handle. Nowothnig, 1962a.

Addendum: A Type II palstave, with conical midrib and loop, comes from *Marmstorf*, Kr. Harburg (Lower Elbe opposite Hamburg) and is in Hamburg Museum; it is included on Map IV below.

CHAPTER IV

SOCKETED AXES

(Lists, pp. 79–81, 85, 87, 94; Pl. X–XII; fig. 19–26; Maps V, VI)

A. EARLY AND MIDDLE BRONZE AGE TYPES

Until recently, the socketed axe was held to be characteristic entirely of the Late Bronze Age in the British Isles, and to speak of a trade in socketed axes in the Early and Middle Bronze Age would have been considered nonsense. It is now possible to bring at least one socketed axe – be it only an isolated example – into the pattern of British-North European Early Bronze Age trade, and to place at least one type of socketed axe into that of the Middle Bronze Age.

1. *The Wangford axe*

The earliest socketed axe known in Britain is a small specimen (c. 9.5 cm) from Wangford near Lakenheath, Cambs., published by Lady Briscoe (*Antiquaries Journal*, XXXIV, 1954, 77, Pl. XVIIa, fig. 1). This axe, unique in the British Isles, has a blade in the form of a flanged axe, surmounted by a socket bearing ribs inimitation of a cord shaft-binding. It has only one very close parallel, a well-known specimen from Kütten, Saalkreis (most recent publication, Von Brunn, 1959, 61, *Taf.* 57: 2, with further refs.; also Billig, 1957, 294–5, 305–6, *Abb.* 5; better known under the erroneous find-spot Cöthen or Köthen). In both these specimens, the type of flanged axe represented is the 'Saxon' type, so that it is reasonable to assume that they were made in the Central German area. The Kütten specimen was apparently associated with a halberd blade, which though not itself metal-hilted, is of the evolved form which is often found with metal hilt. A related object from Prettmin in Pomerania (most recently Kersten, 1958, *Taf.* 88, no. 799, with further references) actually combines a flanged, socketed axe similar in principle to the Kütten and Wangford ones with a metal shaft closely resembling the metal halberd-shafts. This find from Prettmin serves to confirm the Early Bronze Age date of the Kütten and Wangford axes. The Wangford axe accordingly represents an Early Bronze Age import to Britain from the Saxo-Thuringian or North German area.

2. *Socketed axes of Taunton-Hademarschen type*

(List pp. 79–81; Map V)

An important connection between the British Isles and North Germany is provided by a distinctive type of socketed axe, which Sprockhoff (1941, 112: distribution map *Abb.* 86) has distinguished as the Hademarschen type in North Germany. Socketed axes of this type are long and narrow, almost chisel-like in form, with a rectangular cross-section. A characteristic feature is the single flat moulding surrounding the socket-mouth. The sideloop, springing from the base of the socket-mouth moulding, is usually rather small.

The socketed axes of Hademarschen type are rightly distinguished by Sprockhoff from those of 'Breton' form, which have a more elaborate socket-mouth moulding and different proportions.

The Hademarschen-type socketed axes have a curiously limited distribution in Northeast Germany, from the region of the Oder mouth to the Havel-Elbe junction. The example from a grave at Hademarschen, Kr. Rendsburg in West Holstein, which gives the type its name, is a westerly outlier of the German group.

Most are stray finds, but the type occurs in two finds dated to Montelius III: the Hademarschen grave (Pl. X*b*) (Sprockhoff, 1941, *Taf.* 59), which contains a sword-pommel of Montelius II type and according to Prof. Kersten ought to be early in Period III, and the hoard from Farbezin (fig. 19: 7, 8) (*Ibid.*, *Taf.* 60; Kersten, 1958, *Taf.* 75: 711). Later examples are in a Montelius IV hoard from Menzlin, and in the large founders' hoard from Vietkow, Kr. Stolp, which contains Montelius V and Hallstatt B objects. The main occurrence of the type, Sprockhoff suggests, should fall within Montelius III–IV; the fact that they have been found in only one of the very numerous hoards of Period V argues that they had gone out of use by that period. He regards the Hademarschen axes as the prototypes for the more developed socketed axes with rectangular section, more bulging socket-mouth moulding, and 'wart' ornament on the face; this type appears in Northeast Germany in Montelius V hoards such as Plestlin, Kr. Demmin (*Ibid.*, *Taf.* 44: 2, 3) but is of course common in Britain and Northwest France (see below, p. 82 ff., under 'Southeastern' type).

The origin of the Hademarschen type provided a puzzle for Sprockhoff, who pointed out that the rectangular-sectioned socketed axe is not normal to the Northern Middle Bronze Age, and suggested that one would naturally look to the West for prototypes. But the Breton and other Western socketed axes are not only typologically distinct, but too late in origin for the Montelius III Hademarschen and Farbezin deposits. He therefore suggested with reserve the possibility of their independent origin within their limited area of distribution in North Germany, through the application of the core-casting technique to a form derived from plain-

Fig. 19. Socketed axes of Hademarschen type from Pomerania. 1 Sehlen, Kr. Rügen; 2 Barth-Bresewitz, Kr. Franzburg; 3 Alt-Sanitz, Kr. Anklam; 4 Althagen, Kr. Uckermünde; 5 Daber, Kr. Randow; 6 Beyersdorf, Kr. Pyritz; 7, 8 from hoard, Farbezin, Kr. Naugard; 9 Gülzow, Kr. Kammin. 1 : 3. After Kersten.

faced palstaves (cf. his *Abb.* 84). At that time he knew of no Western close parallels to the Hademarschen axes.

Very similar socketed axes do however occur in the British Isles (List below; Map V). Reference to the Index of Bronzes shows some fourteen examples in England, all in the south, extending from East Anglia and the Thames valley to Somerset and Gloucestershire; the main weight appears to be eastern. The British examples were mapped by Hodges (1956, fig. 2). The only example with associations in England is in the Taunton Union workhouse hoard (Pl. X*a*) in Somerset; we therefore suggest the name 'Taunton type' (which will perhaps be easier to pronounce than '*schlichtes Vierecktüllenbeil*'!) for the British series. Despite some minor variation in proportions and in the form of the cutting edge, the Taunton type and the Hademarschen type are essentially the same.

Fragments of a stone mould found in Layer 3 of the settlement site of Gwithian in Cornwall have been claimed (Megaw, Thomas and Wailes, 1961) as being for a socketed axe of this type. While the mould fragments are insufficient to establish the form of the axe with certainty, it is evidently for a rectangular-sectioned specimen, and the date of the layer is independently fixed by the occurrence of two bronze pins attributable to the Taunton-Barton Bendish phase.

Aside from the English specimens, there are two stray finds from Scotland (near Annan, Dumfries., which is indistinguishable from some of the North German axes, and Kingoldrum, Forfars., which is very similar to the Taunton axe). Closely related socketed axes also appear in Ireland. One from the hoard from Bishopsland, Co. Kildare, is similar in form to the Taunton axe, but its socket-mouth moulding is decorated with lines of imitated cord, a feature found frequently on Irish bronzework, suggesting that the axe was locally cast. A sickle with elongated knob in the Bishopsland hoard (Fox's Type IIB) also points to close connections between this hoard and the Somerset bronze industry of our Taunton-Barton Bendish phase. Stray finds of Taunton type socketed axes in Ireland include one from County Cork and one without exact provenance. A few other Irish socketed axes which differ in proportions from the Taunton type, but agree in having the rectangular cross-section and the characteristic flat moulding, may be regarded as related; one may distinguish a short variety (e.g. Newtown Crommelin, Co. Antrim) and a broad variety (e.g. Ballina, Co. Mayo; N. Berwick in Scotland).

Perhaps also to be regarded as a variant of the Taunton type is the slender rectangular-sectioned axe with three more or less equal-sized ribs at the socket-mouth; these mouldings distinguishing it from the Hademarschen-Taunton type proper, which has a single, flattish moulding. The treble-moulded variety is not mentioned or illustrated by Sprockhoff, though rare examples can be found in the literature *i.e.* the loopless specimen from Horst, Kr. Pyritz (Kersten, 1958, *Taf.* 65: 638). We are not here concerned with axes of purely Nordic form which have treble mouldings, *i.e.* Montelius, *Minnen* 992–3, except to note that they do occur already in Montelius III. From Holterberg, Overijssel in the Netherlands comes a socketed axe with a body form strikingly like the Taunton specimen, but with a treble socket-mouth moulding (fig. 20; information from Professor P.J.R.Modderman; found with another axe said by the finder to be of the same type, but which has been lost). In Britain, there is the treblemoulded axe from the Leopold Street, Oxford hoard (*Inventaria* G.B. 5: 11) which must be related to these, although it is an atypically large specimen.

The British dating of the Taunton-type socketed axes follows from their presence in the Taunton and Bishopsland hoards, the Gwithian mould, and the apparent absence of the type from Late Bronze Age hoards of the Nettleham-Wilburton and carps-tongue groups. Since the Taunton-Barton Bendish industry is on the

whole earlier than the Nettleham-Wilburton phase, (cf. below, 223 ff.) then the Taunton type represents the earliest recognized type of socketed axe in Britain. Its rarity as compared with the standardized types of socketed axes in the normal British Late Bronze Age hoards, and its priority over these types in the North German finds, support this assumption. Its distribution in Britain covers the same area as that of twisted neckrings, but the neckrings have their main weight in the southwest and the axes their heaviest concentration in the southeast. It seems very probable that the Taunton-type socketed axes came to Britain in the same move-

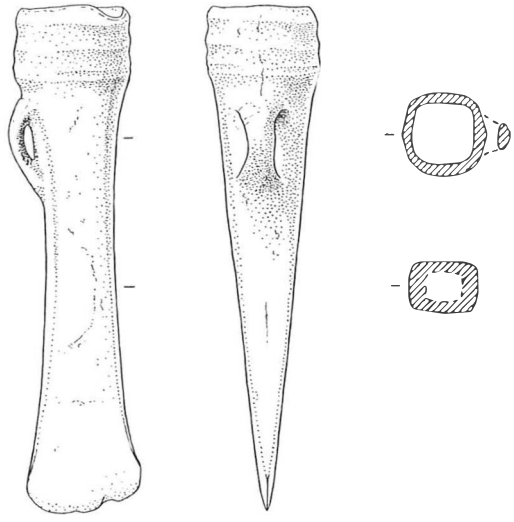


Fig. 20. Socketed axe from Holterberg, Overijssel. 1 : 2.

ment which brought the twisted neckrings and other Northern products. The axe from Hademarschen forms a geographical link between the East German and British series, and points to the Elbe Mouth region as the route of contact. The Dumfries example could be a direct importation to Scotland from North Germany; the type appears to have been introduced to Ireland from Somerset, on the evidence of the Bishopsland hoard; but the possibility of an independent route from North Germany across Scotland to Ireland (suggested also by the Glentrool-type pins) cannot be altogether dismissed

A 'waisted' socketed axe from the Nettleham hoard has a socketmouth moulding of the flat type which occurs on the Taunton-type axes, and may well have been influenced by these; the Nettleham axe would then be a hybrid between the waisted axe of the type which occurs at Larnaud (Jura) and the Taunton axes. One Taunton-type axe, from Betchworth, Surrey, has 'wart' ornament on its face, providing a link with the more developed type previously mentioned, the 'Southeastern' type (see below, pp. 82 ff.).

LIST OF SOCKETED AXES OF TAUNTON-HADEMARSCHEN TYPE

(*cf.* Map VI)

England

Cambridgeshire

1. *Cambridge.* Camb. Mus. 10.4 cm.
2. *Soham.* Wisbech Mus. 10.1 cm.
3. *Quy.* Camb. Mus. 11.3 cm.
4. *Barrington.* Camb. Mus. 11.3 cm. Double V dec. on face, groove on collar. Evans, *ABI* fig. 148.

Suffolk

5. *Mildenhall.* formerly St. Albans Mus. 10.9 cm.
6. *Sudbury* (River Colne). 11.5 cm.

Hertfordshire

7. *Hitchin.* Ashmol. Mus. 1927/2636. 12.5 cm.

Surrey

8. *Thames Ditton,* the Thames nr. *BM.* 67.12–13.16. 10.9 cm.
9. *Betchworth.* Broome Park. Pvt. coll. two warts on face below collar. Surrey Arch. Coll. XLIX, 102, pl. XII. Loop broken off.

Wiltshire

10. *Little Langford.* Pvt. coll. 11.3 cm. 'Palstave found at same place is *not* stated to have been found in direct association.' (Index).
11. *Salisbury Plain.* formerly St. Albans Mus. 12.6 cm.

Gloucester

12. *Weston-sub-Edge.* Pvt. coll. 9.7 cm.

Somerset

13. *Taunton.* Union Workhouse. Hoard. Taunton Cas. Mus. 12.6 cm (Pl. X*a*).
14. *From the Thames* (County unknown) Camb. Mus. 48. 323B.

Scotland

15. *Forfarshire. Kingoldrum.* Edingburgh Mus. 12 cm. Anderson, *Scotland in Pagan Times* (*Bronze Age*), 200 fig. 217.
16. *Dumfriesshire. Near Annan.* Edinburgh Mus. *DE* 80. 8.2 cm. Coles, 1959/60, fig. 28: 7.

Ireland

17. *Co. Kildare. Bishopsland.* Hoard. Dublin Mus. 1944/148. 12.2 cm. Lines of imitated cord decoration on collar. *PPS* XII, 1946, Pl. XIII.
18. *Co. Cork. No precise locality.* Belfast Mus. 8.7 cm.
19. *No locality.* Dublin Mus. 1906/209. No loop.

Germany (partial list)

20. *Kr. Rendsburg. Hademarschen.* Grave (M III) (Pl. X*b*).
    Sprockhoff *Taf.* 59. *Kieler Festschrift,* 55, *Abb.* 5.
    With sword, gold bracelet with spiral terminals, urn, miniature urn, fibula. Has narrower collar than others of this class; the faces are slightly convex.

21. *Kr. Naugard. Farbezin.* Hoard (M III) (fig. 19: 7, 8). Sprockhoff *Taf.* 60 (illus. in part); Kersten, 1958, *Taf.* 75: 711. Sprockhoff, Hortfunde M IV, 30 (where erroneously listed as Isinger, Kr. Pyritz).
2 examples illustrated (L. 12.9 and 12.1 cm). With spearhead, ribbed bracelets, flat bracelets with incised dec., spiral armring, etc.
22. *Kr. Greifswald. Menzlin.* Hoard (MIV). Sprockhoff, *Taf.* 61. Sprockhoff, Hortfunde M IV, 30. With fibula, 2 penannular bracelets.
23. *Kr. Randow. Daber.* (fig. 19: 5). Mus. Stettin (Stray find). Sprockhoff, Hortfunde M IV, *Taf.* 5: 20; Kersten, 1958, *Taf.* 44: 461. L. 13.8 cm.
24. *Kr. Pyritz. Beyersdorf.* (Stray) (fig. 19: 6). Dorka, *Vorg. des Weizackerkreises Pyritz*, *Taf.* 34; Kersten, 1958, *Taf.* 64: 624. L. 13.8 cm.
25. *Kr. Osthavelland. Kremmen.* Sprockhoff *Taf.* 39: 6.
26. *Vicinity of Neubrandenburg.* Sprockhoff *Taf.* 39: 3.
27. *Kr. Stolp. Vietkow.* Hoard (Founders) MV. Sprockhoff *Taf.* 47: 13.
28. *Kr. Rügen. Sehlen.* (fig. 19: 1). Kersten, 1958, *Taf.* 10: 116. L. 9.1 cm.
29. *Kr. Franzburg. Barth-Bresewitz.* (fig. 19: 2). Kersten, 1958, *Taf.* 18: 229. L. 8.3 cm.
30. *Kr. Anklam. Alt-Sanitz.* (fig. 19: 3). Kersten, 1958, *Taf.* 36: 379.
31. *Kr. Uckermünde. Althagen.* (fig. 19: 4). Kersten, 1958, *Taf.* 41: 416. L. 9.5 cm.
32. *Kr. Kammin. Gülzow.* (fig. 19: 9). Kersten, 1958, *Taf.* 76: 726.

Variant with treble socket-mouth moulding (*Germany, the Netherlands*)

33. *Kr. Pyritz. Horst.* Kersten, 1958, *Taf.* 65: 638 (unlooped).
34. *Overijssel, Holterberg.* Present work, fig. 20.

DERIVATIVES OF THE TAUNTON-HADEMARSCHEN TYPE IN THE BRITISH ISLES

(Note: No systematic search has been made for these; the list could probably be extended.)

Broad type

Scotland.

1. N. Berwick. *Law.* Mus. Edinburgh, *DE* 91.

Ireland.

2. Co. Mayo, *Ballina.* Mus. Cambridge (Banks Coll.).
3. Co. Down, Rossconor, *Drumballyroney*, *NMD.* 54: 1916.

Unlocalized in NM Dublin:

4. W 556. Dawson coll.
5. W 557. Dawson coll. slightly convex face.
6. 1897/79 frag. (collar missing). Ruthwell Coll., Kells (Prob. local find).

Short type

Ireland.

7. Co. Mayo, *Carrowmacantire. NMD.*
8. Co. Antrim, *Newtown Crommolin.*

England.

9. Hertfordshire. *Peroon*, Hilly fields. St. Albans City Museum.

Treble-moulded type

England. *Oxford*, Leopold Street (hoard). *Inventaria* G.B. 5: 11.

B. SOCKETED AXES: LATE BRONZE AGE TYPES

Above, we discussed the socketed axes of the Taunton type, which are the British counterparts of Sprockhoff's Hademarschen type, and which appear to have reached Britain from the region between the upper Elbe and the Upper Oder at a time preceding the emergence of full Late Bronze Age industries. More developed types of socketed axes must now be considered. These afford extensive evidence for trade connections between the British Isles and Northern Europe in the Late Bronze Age. The most intimate connections are between South England and the Netherlands and Northwest Germany, but there is also evidence for some trade in socketed axes reaching from Britain (and Northwest France) to Scandinavia, East Germany and even Poland, and for Nothern trade and influences reaching Ireland.

The evidence does not, however, suggest a massive export trade in either direction. Identifiable exports are comparatively rare.

The Late Bronze Age axe-makers in each region had their favourite local forms, but often borrowed features of form, and even more of ornamentation, from the axes produced by their neighbours. This makes it very difficult to evolve criteria for distinguishing imports from local products. Details of decoration are easiest to take hold of for purposes of analysis, but distribution maps or lists complied on the basis of ornamentation alone are liable to provide a completely misleading picture. Details of form are on the whole more reliable. But a systematic formal classification cannot here be attempted, and we may mention here, as an example, only one criterion which appears to be useful for distinguishing British or Western European axes those of the North European provinces, and which serves a purpose for several of the types to be discussed below. It is noticeable that British and Western smiths were very fond of providing socketed axes with a double moulding around the socket-mouth; the upper moulding being comparatively large and bulging, the lower moulding being smaller (very often it is a thin rib); and placing the side-loop so that its top begins at the lower moulding (as A.B.I. fig. 116). This arrangement is found very often on axes of our 'Southeastern' type, on the Yorkshire type, on

the square-mouthed 'Breton type'[1], on the small Breton votive axes, and on other British, French and even Iberian socketed axe types. It occurs very rarely in Northern Europe, and then only on axes of body-form which one might otherwise suppose are of Western origin. Single and treble mouldings, and high loop placement, were, of course, used by Western smiths too, though less commonly (we think of the Welsh type, where single moulding and high loop are characteristic, and some other types) but we know of no certain example of the 'western' double moulding on a socketed axe of otherwise purely North European form.

Socketed axes in North Germany and their relation to Britain and Northwest France have been discussed in considerable detail by Sprockhoff (1941, 84 ff.; 1956, I, 87 ff.). We have therefore taken Sprockhoff's presentation as a starting-point, supplementing his lists with some further examples from the Netherlands and Scandinavia. Unfortunately we were unable to make a full study of the British and Irish comparative material.

The interpretations here offered, to the extent they differ from Sprockhoff's, are hypotheses which will be confirmed or rejected when the full distribution and associations of the types concerned are known.

1. *The 'Southeastern' Type*

As one of the *Leitformen des Ems-Weser Kreises* during the Late Bronze Age, Sprockhoff (1941, *Taf.* 38: 9) illustrated a slender, rectangular-sectioned socketed axe, with the double moulding and low loop placement already mentioned above. Its face is ornamented with a pellet immediately below the lower moulding, and with 'imitation wings' formed by ribbing.

Tackenberg (1951) has already suggested that this socketed axe-type is not *niedersächsisch* but British, and it is unlikely that anyone in Britain would disagree with him. Sprockhoff has distinguished between socketed axes with plastic wings (*Lappenmuster*) and those with the wings imitated by ribbing (*Rippenmuster*), and has mapped them for us (*Ibid.*, *Abb.* 95). The ribbed-wing type is very common in Southeast England and in Belgium; Breuil (1905, fig. 7) illustrates some examples from the Somme area not shown on Sprockhoff's map; but there are only three exapmles in Northwest Germany. Of the German examples, two are illustrated by Sprockhoff; one of them, the example from Klint bei Hechthausen, Kr. Land Hadeln, already referred to, is British in form; the other, from Augustenfeld, Amt Cloppenburg (Sprockhoff, 1941, *Taf.* 38: 12) is clearly not a British piece nor is

[1] For the distribution of these, see Dunning, *Ulster Journal of Arch.* XXII, 1959, 53 ff. Very few were anciently traded to the North European area; but many examples are found in North European museums, thanks to the modern trade in antiquities.

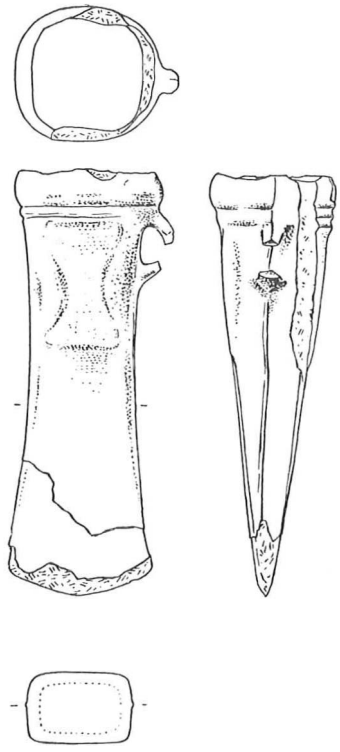


Fig. 21. Socketed axe, Bargeroosterveld, Drenthe. Stray find. 1 : 2. Oudheidkamer Emmen.

the Dutch example from the Schoonebeek hoard (*Ibid.*, *Taf.* 54). The *Lappenmuster* axes, on the other hand, imply contact between Northwest Germany and Northwest France[1]; the *Lappenmuster* is very rare in Britain. It is striking that all the Northwest French *Lappenmuster* axes illustrated by Breuil (1905, Fig. 7: 72, 73, 77, 78, 79, 81) have the low loop-placement described above as 'Western', while all the German examples illustrated by Sprockhoff (1941, *Abb.* 77: 7; *Taf.* 38: 13, 41: 4, 42: 1–3, 7, 11, 43: 1, 45: 2, 3, 6, 8–11, 47: 2–6, 10, 11) have the 'Continental' high loop placement.

[1] Which way the influence ran is problematical. Sprockhoff, having successfully demonstrated by distribution map that the socketed axes with *Lappen* and those with *Rippen* have a virtually exclusive distribution, then ignored the implication of this finding, linked the imitation-winged axes to Deverel-Rimbury pottery, and used these to postulate an invasion of South England from *Niedersachsen* (1941, 115–23). As far as the axes are concerned, it must be emphasized that the *Lappen* and *Rippen* axes are not the same form of axe with a minor difference in ornamentation; essentially they are two quite distinct forms, though occasionally one finds *Lappen* on Southeastern-form axes and *Rippen* on the Northwest German-Northwest French form. The ultimate origin of these types requires more detailed study; despite Sprockhoff's contrary opinion, we think it probable that both types will prove to be Western or Northwestern variants of types originating in Central Europe.

Imitation wings are common on socketed axes in Hungary as well as in Northwest Germany, Northwest France and Britain, and it is probable that the fashion for imitation wings started in the East rather than in the North or West. In any event, this type of ornamentation, imitating the real wings of Central European winged axes, occurs on socketed axes of a variety of forms, and the form of the axe will really tell us more about its probable provenance than the decoration. In Britain, ribbed wings are normally found on socketed axes of the form of the Klint bei Hechthausen axe; usually with the double moulding, low loop, slender, slightly tapering form, and rectangular section with slightly rounded edges. The form, with the ribbed decoration or other forms of plastic ornament, or plain, is perhaps the most common form of socketed axe in Southeast England, and occurs in many hoards in this area; it may for convenience be referred to here as the 'Southeastern' type; though it occurs also, of course, in Northwest France, in the hoards from Plainseau, Marlers and St. Roch (Breuil, 105, figs. 6, 7, nos. 59, 60, 69, 75–6, 80, 82, 85–6, 91), and in Belgium (*e.g.* Marien, 1952, fig. 200: 2, 4, from Turnhout and Hoogstraten; fig. 211: 4, from Jemmeppe-sur-Sambre). The decoration may consist of ribbed wings, one or more pellets, one or more vertical ribs, an X, or combinations of these motifs. These decorated varieties and the plain examples may all occur together in hoards.

Although the winged examples are commonly accepted as being contemporary with the carps-tongue complex, the form itself may well be somewhat earlier in origin. Plain examples occur in the Wilburton hoard (Fox, 1923, Pl. X: 3) which is considered to belong to LB 1, though late within this phase.

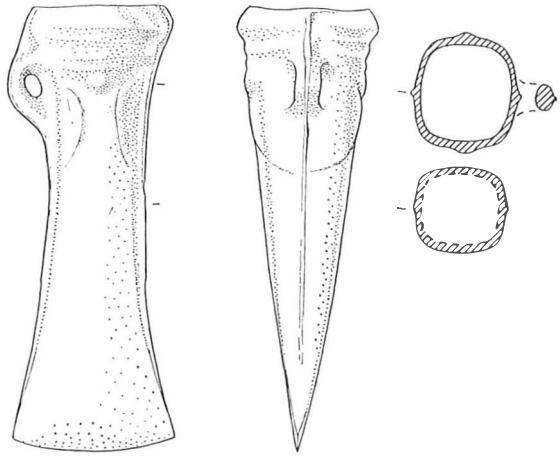


Fig. 22. Socketed axe, Breda, North Brabant. 1 : 2. Mus. Breda.

LIST OF FINDS IN NORTHERN EUROPE OF SOUTHEASTERN SOCKETED AXES

(*cf.* Map VI)

Denmark

1. *Lovskal* (Middelsom H., Viborg A.); two examples (one plain, one with single vertical rib) in hoard (Pl. XIII*b*), Montelius IV (Broholm, DB III, N. 84). Mus. Viborg.
2. *Assendrup.* Zealand. Pellet.
3. *No exact provenance.* Mus. Odense; unpublished.

Sweden

4. *Skåne. No exact provenance.* Multiple vertical ribs. *Minnen* 1056.

Germany and Poland

5. *Klint nr. Hechthausen,* Kr. Land Hadeln.
   Pellet, ribbed wings. Sprockhoff, 1941, Taf. 38: 9.
6. *Hesepe,* Kr. Bersenbrück. Plain. Sprockhoff, 1941, Taf. 39: 4.
7. *Plestlin,* Kr. Demmin, Sprockhoff, 1941, Taf. 42: 10 (X pattern), Taf. 44: 2, 3 (pellet). (The ribbed-wing socketed axes Taf. 43: 3 and 44: 1 and 46: 3, plain, resemble the Southeastern form but have a single moulding; Taf. 42: 8, with doubled ribbed wings, double moulding but the loop springing from the upper moulding, and a prominent arch-shaped facial facet, is a fine example of a hybrid). Hoard, Montelius V.
8. *Tempelburg,* Kr. Danziger Höhe. Plain; faulty casting. La Baume, 1930/1, Abb. 26. Hoard, Montelius V.

Netherlands

9. *Heppener Maaseyck,* Limburg.* Pl. XII: 5. Butler, 1961, Pl. XVIII: 5. Plain. Felix 247, Abb. 191. Mus. Leiden, l. 1906, III 35.
10. *Heppener Maaseyck,* Limburg.* Pellet. Pl. XII: 4. Butler, 1961, Pl. XVIII: 4. Felix 200, Abb. 193. Mus. Leiden, l. 1906, III 32.
11. *Weert,* Limburg. Plain. Felix 448, Abb. 192. Mus. Maastricht.
12. *Posterholt,* Limburg. Mus. Maastricht, 243.
13. *Stiphout,* North Brabant. Pellet, ribbed wings. Felix 387, Abb. 209. Hoard; with socketed gouge and two lost socketed axes, type unknown. Mus. 's-Hertogenbosch.
14. *Breda,* North Brabant. Pellet, ribbed wings. Mus. Breda, 432.
15. *Nijmegen* (vicinity of). Mus. Arnhem, GAS 1958.9.30 (ex coll Van Olst). Ribbed wings, pellet.
16. *Nijmegen* (from the Waal). Pellet on one face, small v on the other. Mus. Beek, IIb8.
17. *Rijsbergen,* North Brabant. Mus. Leiden. Ribbed wings.
18. *Helmond,* North Brabant. Mus. Leiden. Ribbed wings, 2 pellets. Pl. XII: 1. Butler, 1961, Pl. XVIII: 1.
19. *Elzen,* Overijssel. Pellet. Mus. Zwolle.
20. *Bargeroosterveld,* Drenthe. Fig. 21. Butler, 1960, fig. 54.
21. *Exact provenance unknown.* Mus. Tilburg. Multiple vertical ribs. Felix Abb. 198.
22. *Exact provenance unknown,* but probably in the Nijmegen area. Plain. Mus. Nijmegen, GNAC 10 (ex Guyot coll). Butler, 1960, Pl. XVIII: 3.
23. *Exact provenance unknown.* Ribbed wings. Mus. Nijmegen, XXX. d. 53 (old no. 14), ex Kam. coll. Butler, 1961, Pl. XVIII: 2.

* N.B. No. 9 and 10 are inventorized in RMO as Dutch finds; but a Heppenert nr. Maaseyck appears on maps on the Belgian side of the Maas.

The examples from the Netherlands are mainly in the southern provinces of that country, and form a continuum with the North French and Belgian area. The Bargeroosterveld, Elzen, Klint and Hesepe examples are, however, clearly outside the normal limits of distribution of the type, and represent trade contacts with our Hunze-Ems province and Sprockhoff's *Niedersachsen*. Beyond this, there is a thin radiation to East Germany and Poland, Denmark and South Sweden. The dating evidence is provided by the Løvskal hoard, assigned by Broholm to Montelius IV, and the Plestlin and Tempelburg hoards of Montelius V. The Løvskal hoard contains two unmistakable Southeastern socketed axes (both broken), a socketed axe of a type also represented in the North German Montelius V hoard from Plestlin, fragments of winged axes, a bracelet of a Montelius IV type, and a plain spearhead. The Plestlin founders' hoard is a good representative of the Montelius V-Hallstatt B horizon in North Germany, and contains a remarkable mixture of Western, Northwest German, East German and West Alpine products (Sprockhoff, 1941, esp. 90 ff.; the somewhat similar founders' hoard from Vietkow, Kr. Stolp, contains a similar 'international' mixture, and includes a socketed axe with ribbed wings and single moulding like those in the Plestlin hoard; Sprockhoff, 1941, *Taf.* 47–51). Southeastern socketed axes are also known in Central European hoards of Hallstatt B, such as Hochstadt, Kr. Hanau (Müller-Karpe, 1948, *Taf.* 34: 4); Eibingen, Rheingaukr. (Behrens, 1916, 42, *Abb.* 11: 5); perhaps even Tamachov, Bohemia (Richly, 1894, *Tab.* XXXIX: 1–4). It therefore appears that the main period of export of the Southeastern socketed axes was HaB-M V, with the Løvskal examples apparently somewhat earlier.

2. *The Narrow Faceted Octagonal-sectioned Type*

A type of socketed axe common to the British Isles and Northern Europe was discussed briefly by Sprockhoff under the heading of 'faceted socketed axes'. British examples of the type have never been fully listed or mapped; Piggott (1952/3, 177), discussing an example in the Horsehope hoard, suggests that their distribution is mainly eastern. Hodges (1956, 29–30) says they are common in Ireland. He distinguishes a *narrow form with octagonal section*, common to Britain and Ireland, and a *broader form with hexagonal section* (his fig. 1: 1, 2); he regards the former as an early form in Ireland, and the latter as a later development. Here we are concerned only with the narrow octagonal form. A bronze mould for the narrow octagonal form comes from the Quantock Hills, Somerset (BM LPA, fig. 12: 5); it has parallels in the Netherlands, at Havelte in Drenthe (Pl. XII; Butler, 1961, fig. 11) (with 'Western European' socket-mouth mouldings) and in the Rhineland at Erkrath, Kr. Düsseldorf (Mariën, 1952, fig. 205; with single socket-mouth moulding). For Northern Europe Sprockhoff (1941, 88–9, *Abb.* 70–3, *Taf.* 40: 2–4,

6, 8) lists 14 faceted axes, mostly in Northwest Germany; to which we can add a few more, bringing the number to 21.

The prototype, according to Sprockhoff, is the transitional palstave-socketed axe from Ratibor in Silesia, to which is related the unique socketed axe from the Thames at Wandsworth (*Ibid.*, *Abb.* 73). These are unfortunately undated.

The North European list of faceted socketed axes can be subdivided (except for six examples of which we have seen neither the originals nor illustrations) according to their degree of resemblance to the British-Irish octagonal type. The type of socket-mouth moulding, the placement of the loop (if any; a few are unlooped) and variations in the form of the body of the axe may be used for this sub-division.

Oddly enough, the only Northern example with the funnel-shaped socket-mouth moulding, exactly of the form so common in Britain and Ireland, comes from Gurki, Kr. Konitz, now in Poland (Reinerth, III, *Abb.* 189); it has the typical low loop-placement, and must surely be a British-Irish export. It was found in a Montelius V hoard. Examples with a Western double socket-mouth moulding, as defined above, are from Nijmegen, Gelderland (Felix 301, *Abb.* 206) and Hatenboer, Limburg, both in the Netherlands; the former with a low loop, the latter unlooped. The Havelte mould (above, p. 86) is for an axe of this form, with low loop.

A second group consists of examples similar in body-form, but with a *single* moulding:

1. *Wachtum*, Gem. Dalen, Drenthe. Mus. Assen (fig. 24).
2. *Dreibergen* am Zwischenahner Meer, Ldkr. Ammerland. Sprockhoff, 1941, *Taf.* 40: 6.
3. *Lobenhausen*, Kr. Melsungen. Ibid., *Abb.* 72: 1.
4. *Fjellerup*, Fyn. Hoard, Montelius VI (unlooped).
5. (*Bokeloh*, Kr. Meppen, Sprockhoff, 1941, *Abb.* 72: 2, lacks any moulding, but perhaps belongs with this group.)

These have parallels in the British Isles (*e.g.* South Downs, Sussex, Brighton Mus.: Glastonbury, Somerset, Taunton Mus.; Wallingford, Berks., Ashmolean Mus., not from the Wallingford hoard; Index of Bronzes).

A third group is distinguished by ribs emphasizing the angles. An example from a grave at Court-Saint-Etienne [Brabant, Belgium; *Inventaria* B.7g) is dated by Mariën to Hallstatt D! Not all examples need be so late; an example in the Meldreth hoard, Cambs. (*Inventaria* G.B. 13, no. 32) belongs to LB 2. In Brittany, an example in the Menez-Tosta hoard occurs with, *inter alia*, carps-tongue types, a Thorndon knife, Welsh socketed axes, and a good central European HaB 'ribbed style' bracelet (Briard, 1958, Pl. III : 11). Sprockhoff illustrates (1937, *Taf.* 5: 17) an example from Land Stargard, and mentions as '*ein genaues Gegenstück*' one from Lossa, Kr. Eckartsberga, and as '*eine Parallele im Typus*' to it another from Sondershausen. These Sprockhoff attributed in 1937 to Hungarian influence (*Ibid.*, 30),

and assigned to Montelius IV; but on what ground is not clear. From the *Index of Bronzes* we have culled a number of further examples in South and East England (Donhead, Wilts., Blackmoor Mus.; Oldbury Hill, Cherhill, Wilts., Devizes Mus.; Garsington, Oxon., Reading Museum; Stoke Bruerne, Northants., Northants Central Mus.; Swaffham, Norfolk; near Norwich, Norfolk; Scrooley, Lincs., Doncaster Museum; Wicken, Cambs; and one uncertainly from Blandford, Dorset). Breuil (1905, fig. 7: 92) illustrates an example from the St. Roch hoard. The Stargard example, with 'Western' socket-mouth mouldings and loop-placement, is therefore to be claimed as a Western export, and presumably the unillustrated ones from Lossa and Sondershausen too. Wachtum (p. 87, no. 1) also belongs here.

A fourth group, presumably of Northwest German manufacture, but of rather hybrid form, is represented by the two specimens from Adendorf, Kr. Lüneburg and Freren, Kr. Lingen (Sprockhoff, 1941, *Taf.* 40: 3, 8). Both have single socket-mouth mouldings. The Adendorf specimen has an arch-shaped facial moulding, a feature common on Dutch-NW German axes; the Freren example has three small pellets on its face. Both have 'hatchet-shaped' blades; a feature found on socketed axes of varying form over a wide area (East France and North Germany, Hundt, 1938, 107, *Taf.* 45A; Sweden, Montelius, *Minnen* 1170, 1177–8, 1182, Ireland Hodges, 1957b, 67, fig. 2: 2; 1956, 33, fig. 1: 4).

Finally there is a small Scandinavian group of narrow faceted axes, which in socket-mouth mouldings and low loop placement appear to have been influenced by the British-Irish funnel-mouthed form, though they are atypical, and elaborately ornamented. This group is represented by the examples from Endslev s., Praestø Amt, Zealand (DO IV 218) and St. Olofs sn., Albo Hd., Scania (*Minnen* 1174; Mus. Lund, 12743). They are assigmed to Montelius V.

On the basis of the Ratibor axe, which appears to derive from the faceted palstaves which occur in East Germany, Sprockhoff presumed that the faceted socketed axe family began in North Germany, and represents one of the rare instances of North German influence on the industries of Western Europe. In this he was no doubt right, though the Taunton-Hademarschen socketed axe story and other things render the phenomenon less isolated than it appeared in 1941. The varieties with single moulding would represent the normal German type, the varieties with double moulding or funnel mouth the British-Irish derivatives. Hodges (1956, 29) suggests that the octagonal-sectioned socketed axes stand at the beginning of the Irish socketed axe development. The date of the type's introduction to the British Isles cannot be determined from the North German evidence, but it is clear that a reflex movement was bringing British-Irish socketed axes of the octagonal type back to Northern Europe, to the Baltic region, in Montelius V. In Scotland they occur in late hoards (Adabrock, Childe, 1946, Pl. XII, 1: 7; Horsehope, Piggott, 1952/3, fig. 1: 1); in Wales, with 'Welsh' socketed axes (Grimes, 1951,

fig. 67–8); in Southern England and Northern France, in carps-tongue hoards (*e.g.* Grays Thurrock, *Antiq. Journal* II, 1922, fig. 2).

Continental varieties were still current in Montelius VI (Fjellerup) and Hallstatt times (Court-Saint-Etienne). The Irish hoards containing faceted socketed axes cited by Hodges tell an ambiguous story: *Ballanlis*, Co. Armagh 'with a small socket-looped spearhead typical of the Irish Middle Bronze Age'; *Charleville*, Co. Offaly with a socketed sickle, a shield palstave which we should have thought quite early in the Middle Bronze Age, and a socketed gouge, which is usually considered late; *Crossna*, Co. Roscommon, also with a gouge, and with a socketed knife of Thorndon type; *Kish*, Co. Wicklow (Raftery, 1951, fig. 199) with another socket-

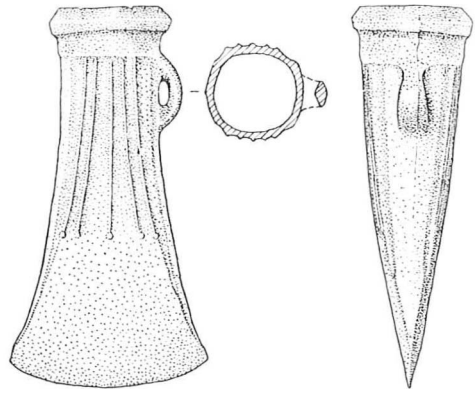


Fig. 23. Socketed axe from Monster, South Holland. 1 : 2. Mus. the Hague.

ed axe of a broader faceted type, a basal-looped spearhead, and a Thorndon knife. The Thorndon knives also have a parallel in a Montelius V hoard (see Chapter VI, p. 115).

In summary, the octagonal narrow faceted axe seems originally to have reached the British Isles from North Germany. The Wandsworth specimen is early but undated; the variety with a single socketmouth moulding, being common to North Germany and Britain, seems to represent the basic type introduced into and copied in Britain at a date not cosely definable but presumably in Montelius IV or early V.

The double-moulding and funnel-mouthed varieties represent the British-Irish variants, which were traded back to the North, at least to the Netherlands and the Baltic region, in LB 2 – Montelius V; the type being imitated in South Scandinavia. A variant traded to North Germany from the West is represented by the type with ribs emphasising the angles, current in LB 2 and afterwards.

3. *The Type with Elaborate Socket-mouth Mouldings*

Sprockhoff's type *mit profilierten Tüllenmund* is also claimed by him as one of the typical forms of his *Ems-Weser Kreis.* (1941, 83 ff., *Abb.* 38: 10; *Taf.* 38: 10, 41: 3a, 42: 5, *et al.*; distribution map *Abb.* 67). Typical examples have a prominent upper socketmouth moulding, with a large loop springing from it; and a collar below the upper moulding consisting of two fine ribs (often imitating cord), a wide moulding, and two more fine ribs. There are minor variations of this arrangement. The blade normally has a prominent arch-shaped facial facet. Their main distribution is in the Northern provinces of the Netherlands and in the adjacent Ems-land; with a thin scatter to North and East Germany (notably in the Plestlin and Vietkow

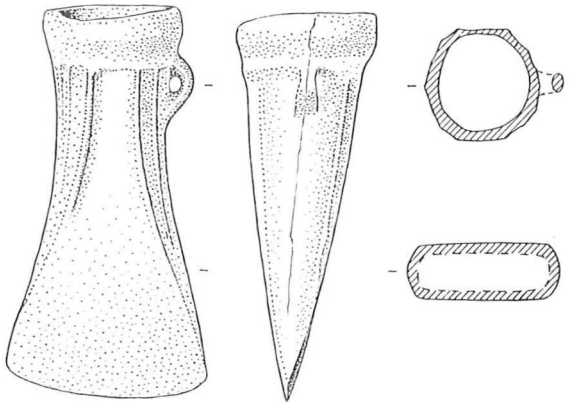


Fig. 24. Socketed axe from Wachtum, Drenthe. 1 : 2. Mus. Assen.

hoards already mentioned above) and to the west. They may perhaps all come from one workshop. Sprockhoff also noted that an Irish axe from Dungiven, Co. Derry (*Ibid. Abb.* 68) had simpler but related mouldings.

Even from Sprockhoff's map it appears that the socketed axes *mit profilierten Tüllenmund* could better be described as a Hunze-Ems rather than an Ems-Weser group; with additions to the list given by Sprockhoff of further finds from the Netherlands, Drenthe emerges as a main centre (fig. 25; Butler, 1960*c*, 1961*b*).

An example of the type, either an actual import or a close copy, occurs in the British hoard from Birchington, Kent (Worsfold, 1943, Pl. XI: 3).

The derivative Irish axes with mouldings like the Dungiven specimen include examples from Cromaghs, Co. Antrim (hoard, with Class II razor, Irish sunflower pin, socketed gouge, and objects of perishable materials; Coffey, 1913, fig. 71: 1–5, fig. 72); the hoard from Ballinderry, Co. Westmeath (Sprockhoff, 1956, Abb. 14: 6–14, with socketed knife of Thorndon type, socketed chisel, tanged chi-

sel, rings); near Belfast, Co. Antrim (with gold dress fasteners; Ashmolean Mus.); and in Scotland the Arthur's Seat, Edinburgh hoard, with two swords (Wilson, 1863, I, 351, figs. 52–2, 60). Nine examples occur in southern Scotland, according to Coles (1959/60, 44–5, Map 9).

The Hunze-Ems prototypes are dated to Hallstatt B-Montelius V by the Plestlin and Vietkow hoards. The Birchington hoard belongs to the carps-tongue phase; Hawkes and Smith (1957, 185) place it late in that phase, and towards 600. On this basis the Birchington axe was deposited a century or so later than the Plestlin and Vietkow hoards, which with their West Alpine Hallstatt B exports should not be later than c. 700.

4. *The Højby Type and British Ribbed Socketed Axes*

An axe from Højby is chosen by Broholm (DO IV 22) to illustrate one of the Scandinavian types of socketed axes characteristic of Montelius IV. The Højby type has a hexagonal cross-section, normally straight parallel sides, a single socket-mouth moulding from which the loop descends, and multiple vertical ribs or grooves on the face, the lower part of which consists of a plain rectangular facet.

The only actually imported example of this type of socketed axe known to have been found in the British Isles is the unfinished casting, in very battered condition, found in the late eighteenth century at the Carse Loch, Kickcudbrights. (Mus. Edinburgh, DE 5; fig. 26; Coles, 1959/60, fig. 4: 8).

Hodges (1956, 33) has called attention to two socketed axes in Ireland, which, though not Scandinavian in form, have vertical grooves on their faces in the manner of the Højby axes; these are from Kilrea, Co. Derry (his fig. 1: 2) and Druma, Co. Down. This type of grooving is also found on one of the axes in the hoard from Bourton-on-the-Water, Glos. (Dunning, 1932, 283, fig. 3: 3), with six other socketed axes, including the octagonal faceted type and ribbed axes.

Contemplating the 'Welsh' socketed axe in the same hoard (*ibid.*, fig. 3: 6), it would not be difficult to imagine that a connection exists between the Welsh type (defined by Fox, 1939, 390, 403–4, with list and further references) and the Højby type. The Welsh type is usually broader than the Højby type, although narrow examples also occur; and the Welsh type normally has the hexagonal section, single socket-mouth moulding and high loop, as well as the rather straight sides which characterize the Højby axes. The resemblances between the Welsh and Højby types therefore go much further than the resemblances between the Højby type and other British types of ribbed axes, such as the Yorkshire type, which always has a rectangular cross-section and the 'western' double socket-mouth moulding and low loop-placement. While the Yorkshire type is to be regarded as a development from the ribbed version of our Southeastern type, the Welsh type may per-

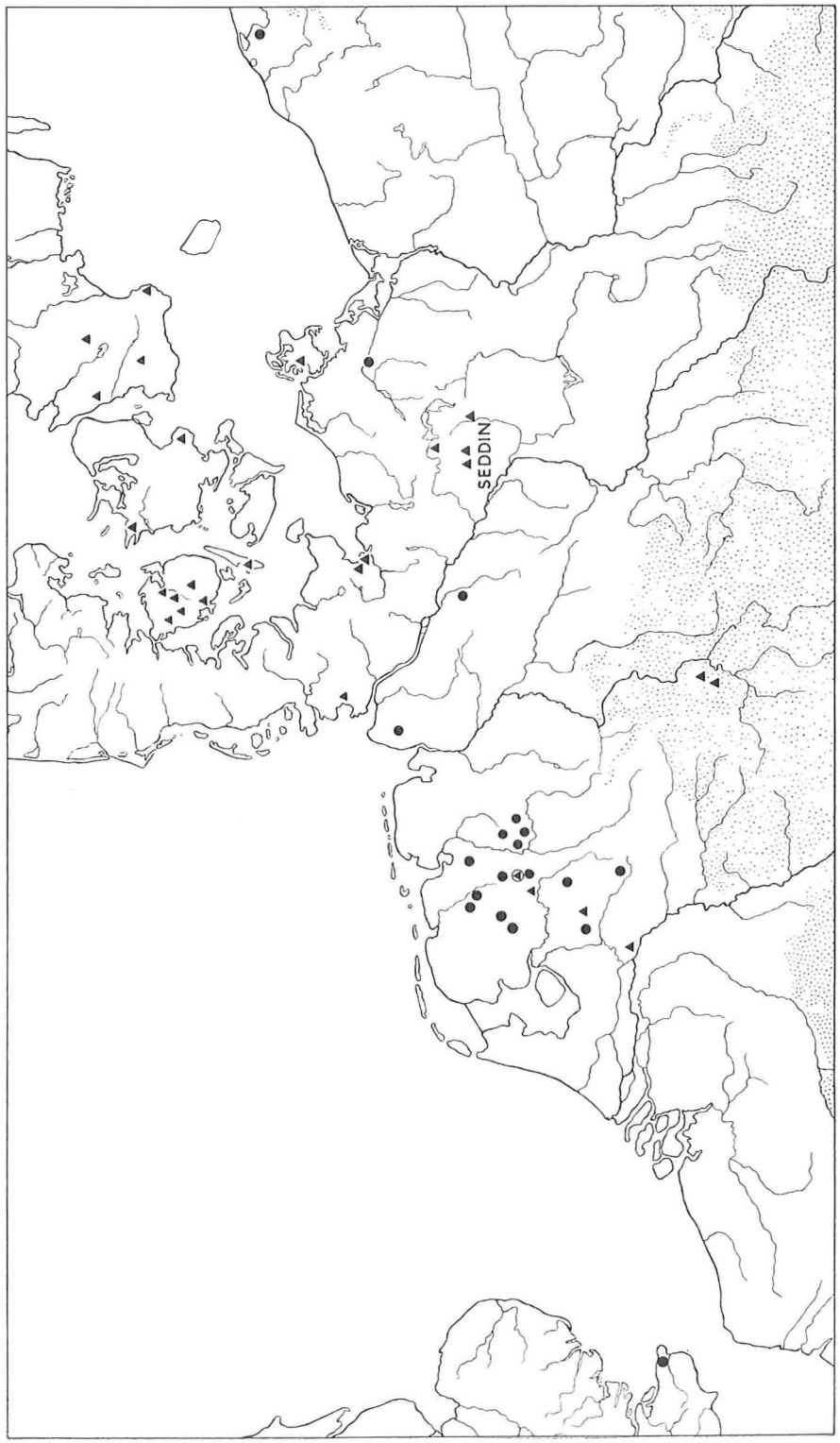


Fig. 25. Distribution of socketed axes *mit profiliertem Tüllenmund* (round dots) and socketed axes of Seddin type (triangles). After Sprockhoff, with additions.

haps take its inception from the Scandinavian prototypes attested in the Irish Sea area directly by the Carse Loch specimen and indirectly by the facial grooving on British and Irish axes cited above.

Vertical ribbing has attracted attention as a feature connecting the British Isles and Northern Europe; Sprockhoff (1941, 122, *Abb.* 90) compared or contrasted the Northern ribbed axes with the Yorkshire type as sisters facing each other across the North Sea. Piggott (1952/3, 177/8) pointed out that the distribution of Yorkshire axes was complementary to that of the Welsh type and to ribbed socketed axe types in Scotland (Henderson, 1937/8, 150 ff.) and East Anglia (Clark, 1940, 52 ff.; these include our Southeastern type and others, not to mention the ribbed palstaves). Hodges (1956, fig. 6) has mapped an Irish variety. Sprockhoff (1949/50,

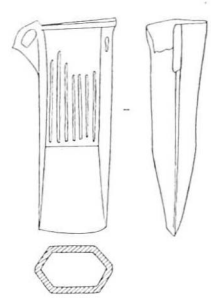


Fig. 26. Socketed axe, Carse Loch, Kirkcudbrights., Scotland. 1 : 3. National Museum, Edinburgh.

76 ff.) has illustrated a large number of ribbed Lausitz socketed axes. Ribbed socketed axes also occur commonly in Hungary and France. All this seems to tell us merely that the use of three or more vertical ribs on socketed axes was a widespread European Late Bronze Age fashion.

Similarly, rib-and-pellet ornamentation has been claimed to be characteristic of Western Europe; so we may mention finds of socketed axes with such decoration next.

5. *Socketed Axes with Rib and Pellet Decoration*

The examples of socketed axes with rib-and-pellet decoration from Northern Europe listed below are rather heterogeneous in form. Some are of the rectangular-sectioned form common in France, and probably only secondarily in Britain (Overasselt, Burge, Bergen, Heringsdorf). One is of narrow octagonal-sectioned form, with cylinder neck and biconical socket-mouth moulding (Monster, South Holland).

The Bäl specimen looks, from the very poor drawing, as if it might be of the Welsh type.

The Bergen (Rügen) hoard is assigned to Montelius V; the other examples are stray finds. Their occurrence in the Netherlands, along the Baltic coast, and even on Gotland is noteworthy.

It has, however, been recognised by Sprockhoff (1956, 95–6) that the 32 axes with rib-and-pellet decoration found in Central and North Germany (his *Karte* 11) comprise for the most part specimens of local manufacture. Our short list, therefore, includes only the specimens that appear to be actual Western exports:

Netherlands

1. *Overasselt*, Gelderland. Mus. Leiden, 1949/6.1.
2. *Monster*, South Holland. Mus. the Hague, HH 2–53 (fig. 23).

Germany

3. *Heringsdorf*, Usedom. Sprockhoff, 1941, *Taf.* 39: 1; with another socketed axe of atypical form.
4. *Bergen auf Rügen*. Sprockhoff, 1941, *Taf.* 53: 10. Hoard, Montelius V.

Sweden

5. *Burge*, Levede sn., Gotland. Hanson, 1927, Pl. 19: 104.
6. *Bäl*, Gotland. *Ibid.*, Pl. 19: 105.

6. *The Small Nordic Montelius V Type*

This is the type represented by *Minnen* 1178 and DO IV 134. The only finds of this type in the West known to the writer are one from Eibergen, Gelderland in the Netherlands (Felix 111, *Abb.* 226; Mus. Enschede) and one from Warminster, Wilts. (Index of Bronzes). Hodges (1954, 74, fig. 2: 6; 1956, 33) has called attention to two unlocalized finds from Ireland; the illustrated example has an imitation cord moulding, which suggests that it is a local copy. Hodges and others regard this type as the probable prototype the small Irish 'bag-shaped' socketed axes. A feature common to the Irish variety and the assumed prototype is the frequent presence of ribs inside the socket. This feature is, however, not entirely confined to these two types; its occurrence is difficult to detect from published illustrations! Baudou (1953, 242) has noted that these internal ribs never occur in Northern socketed axes of Montelius IV, but are almost invariably present in those of Montelius V and VI.

Conclusions: Several types of socketed axes of the British Isles appear to be derived from North European prototypes imported in small numbers. These include, after the Hademarschen type discussed in a previous chapter, the narrow octagonal faceted type, from North Germany, which was imitated and developed in South England and Ireland; probably the Welsh type, from the Scandinavian

Højby type, directly or indirectly; the type with elaborate socketmouth mouldings, from the Hunze-Ems district, a close imitation appearing in the Birchington, Kent hoard of the carps-tongue phase, and more devolved imitations in Ireland and Scotland; and the Irish 'bag-shaped' type, from the small Scandinavian Montelius V type. In the other direction, we find Southeastern socketed axes traded to the Netherlands, Northwest Germany, Northeast Germany and Poland, and South Scandinavia, beginning late in Montelius IV; some British-Irish renderings of the octagonal axes going to the Netherlands (including one bronze mould) and the East Baltic in Montelius V; and rib-and-pellet axes (perhaps more French than British) to the Netherlands, the German Baltic coast and Sweden, in Montelius V and perhaps VI.

7. *Plastic Sawtooth Ornament*

One small Irish 'bag-shaped' axe without exact provenance, preserved in the Cambridge Museum (no. 27, 621) has ornament on the faces in the form of a series of plastic pendant triangles at the base of the socket-mouth moulding. This form of ornament is exactly matched on a small group of socketed axes in the Netherlands, consisting of only half a dozen specimens, with a distribution centred on the IJssel Valley (Butler, 1961*b*, 220–1, Pl. IV, fig. 14, 20, map fig. 22 (+ signs).

The Dutch axes in question are somewhat heterogeneous in form, but appear to be of local manufacture. They form a small local group on the western edge of the territory served by our Late Bronze Age 'Hunze-Ems industry' (Butler, 1961*b*).

In the absence of evidence for the occurrence of this form of ornament elsewhere, we can use the small Irish axe in question as a support for the suggestion of contact between the Irish and the Hunze-Ems industries brought forth in section 3 above (see pp. 90–1).

CHAPTER V

SPEARHEADS

(List, p. 109; Pl. IX, XIII, XIV; fig. 27–31; Map VII)

Next to the various forms of axes, spearheads are the best-represented British export objects in Northern Europe. Again, there is evidence both for actual exports and for the imitation of British forms by North European smiths.

A. THE SPORUPLUND SPEARHEAD (fig. 27)

Unique of its type on the Continent is a spearhead found in a grave in Northeast Jutland at Sporuplund (Farre s., Sorup H., Aarhus Amt), together with a Northern tongue-grip sword and chape of Broholm's Period II. Scandinavian authors (Forssander, 1936, 222; Broholm, DB I, 93; II, 106) regard it as an import from Britain, and the resemblance of some of its features to one of the spearheads in the Arreton Down hoard (*Arch.* LXI, figs. 9, 10) cannot be denied. The latter is a one-piece cast socketed spearhead which imitates the peculiarities of the tanged spearhead with a separately cast bronze collar riveted to it (as represented by the spearhead from Snowshill, Glos. (*Ibid.*, figs. 8, 10).

The spearhead from Sporuplund is slightly smaller than the Arreton Down specimen. It also has an ogival blade with lozenge-shaped cross-section. The blade likewise meets the 'collar' in an arc, which is, however, much shallower than that of the Arreton Down spearhead. It has incised parallel lines on its blade (two lines on one side of its face, one only on the other). The 'collar' has a convex outline, while that of the Arreton Down spearhead is concave[1].

The Sporuplund socket is narrower than Arretown Down; instead of a rivet it has a headless bronze peg, still *in situ*, placed close to the base of the socket. The socket-mouth is cut off squarely; the metal is slightly thicker than that of the Arreton

[1] The best parallel for this feature is represented by the form for a socketed 'dagger-bladed' spearhead on one of the stone moulds in the find at Omagh, Co. Tyrone (Coffey, 1913, 181, fig. 1, 1A; Coghlan and Raftery, *Sibrium* 1961, 236–7, No. 27, fig. 28. The spearhead cast in this form would have, however, a high ridge down the centre of the blade.

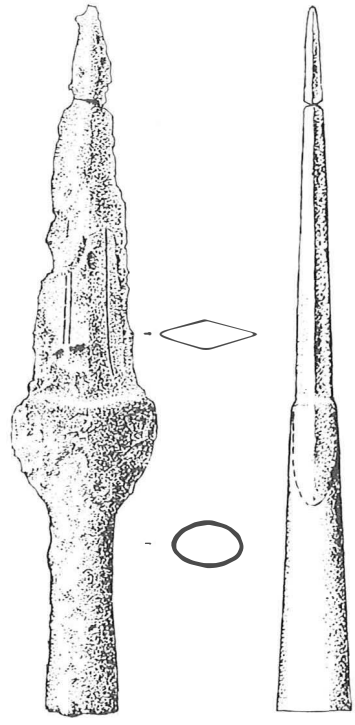


Fig. 27. Spearhead from grave at Sporuplund, Zealand, Denmark. 1 : 3. National Museum, Copenhagen.

Down spearhead; both examples agree in having sockets that are uncommonly thick for spearheads. There are no imitation rivets on the collar of the Sporuplund specimen, nor is there any decoration on the socket.

The two spearheads have much in common despite their differences, and the Sporuplund spearhead is clearly a derivative of the 'daggerbladed' Arreton Down type.

The 'dagger-bladed' spearhead, as a rare and transitional type, cannot be supposed to have had a very long life in Wessex; and it must be assumed that the Sporuplund spearhead was made not long after the time of the Arreton Down hoard itself, and probably within the same generation. One would therefore have expected such an object in a *Vor første metalkultur* context, or at the latest in Broholm I. A slightly later date of manufacture might be admitted of it were assumed that the Sporuplund spearhead was made in Ireland (as suggested by the Omagh mould) rather than in Wessex; the Omagh moulds include daggers and spearheads closely related to the Arreton Down assemblage, and should not be very far from it in time, although one of the Omagh moulds is for a looped spearhead (Coffey, 1913, fig. 5, 5A) and to that extent typologically more advanced than Arreton Down. The equation Late Wessex-Broholm II could be supported by Becker's suggestion that the Danish biconical amber beads of Periods II–III are imitations of Wessex

shale or lignite beads (1954b, 246 ff.); and his observation that the segmented faience bead from Morsø in the Limfjord occurs in a cist of *Aeldre Bronzealder* rather than Late Neolithic type (*Ibid.* 241 ff., 251). Acceptance of this view would have a number of advantages; *i.e.*, it would make the Wessex amber trade largely contemporary with the South English-Northwest French metal exports to Northwest Germany and Denmark. But it would mean spreading Wessex II over the three periods of the Northern chronology, *Vor forste metalkultur* – Broholm I – Broholm II.

B. LOOPED SPEARHEADS

1. *With loops at base of blade*

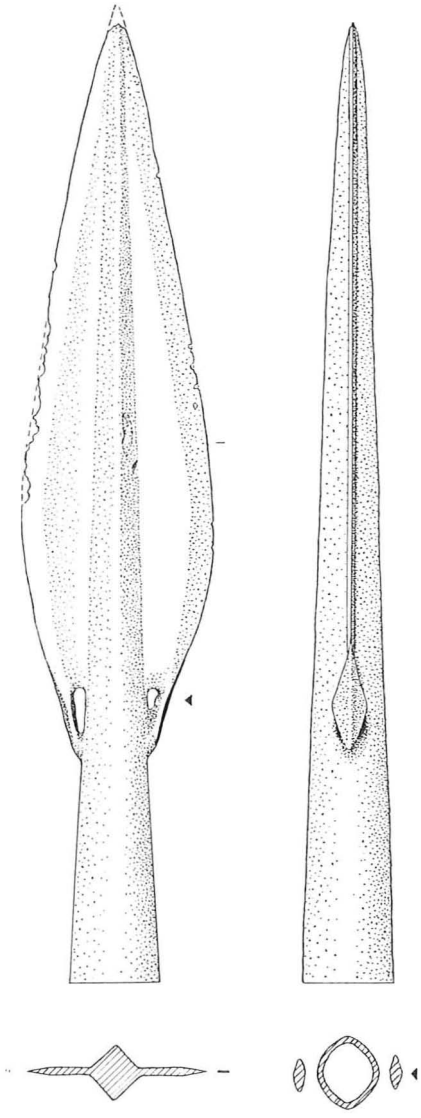
Spearheads of Anglo-Irish type with loops at the base of the blade occur, within the area of our study, in West Holstein (Liesbüttel, Aasbüttel), the Netherlands (Exlooërmond, Bargeroosterveld and Onstwedde in the North, and one possibly near Nijmegen), Belgium (Duffel, Wichelen?, Oudenaarde) and in the Ilmenau region of Northwest Germany (Obergrünhagen).

The basal-looped spearheads may be divided into those with leafshaped and those with triangular blades. Of those with leaf-shaped blade, the two smallest examples, those from Holstein, may be discussed first.

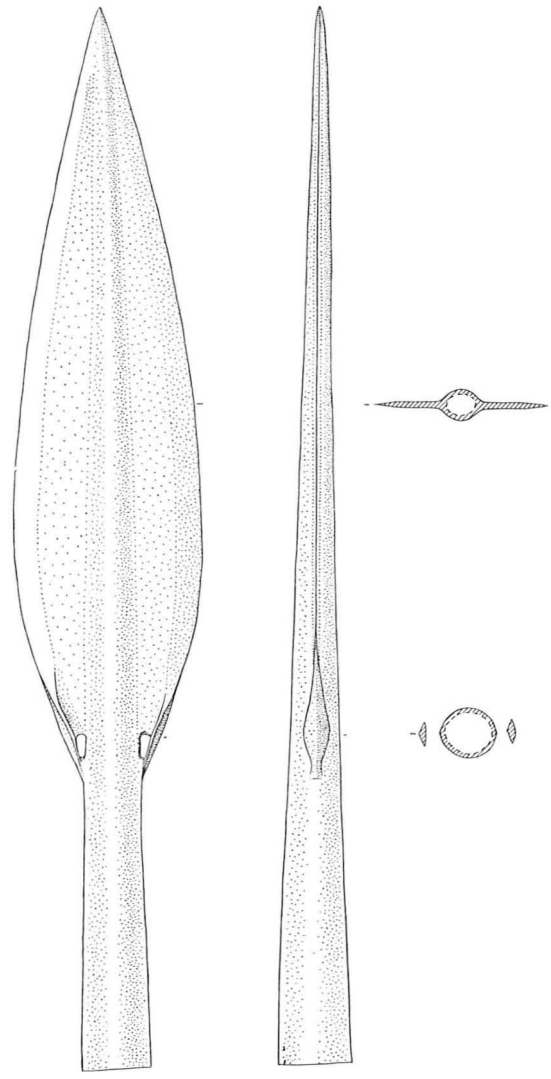
The much-discussed spearhead from Liesbüttel, Kr. Rendsburg (Pl. XIII*c*), was found in 1880, 'in the upper part of a *Hünengrab* above the principal chamber', *i.e.* a secondary deposit, presumably a grave, in a chambered barrow. Nothing more is known of the find circumstances, but it has been accepted as a closed find by Sprockhoff, Kersten and other North German archaeologists.

The spearhead is broken and battered; the tip end of the blade is missing (present length 16.5 cm) and its edges much abraded, making the exact original shape of the leaf-shaped blade difficult to reconstruct. The originally round socket-tube has been partially flattened by secondary hammering; a thin rib running along the axis of the socket-tube has been partially widened out, partially obliterated by this maltreatment. The blade has an internal bevel. The side-loops are flattened into lozenge-shaped plates.

Basal-looped spearheads with a ribbed socket (as distinguished from those with a ridged socket, *i.e.*, the socket-tube has a lozenge cross-section) are rarely found in datable contexts in Britain. One example is in the Glentrool hoard (*PSAS* LV, 29; LVI, 20); it has a narrower and more lanceolate blade than the Liesbüttel spearhead, and has lines of incised decoration around the base of the socket. Another, very battered, is in the hoard from the Isle of Islay, Argylls (O Riordain, 1936, 202 fig. 7) with 2 socketed axes, a halberd and a palstave-adze.



28*a*. Spearhead from Onstwedde, Groningen. 1 : 2. Mus. Groningen.



28*b*. Spearhead from Exlooërmond, Drenthe. 1 : 3. Mus. Assen.

The other objects in the find are (1) a bronze-hilted dirk which Kersten assigns to his Period IIA in Schleswig-Holstein, and (2) a flint dagger of Forssander's Type VI, a Northern Late Neolithic type which occasionally turns up in Period II and even later contexts. The bronze dirk is the key object for dating.

The Liesbüttel find was in one of a group of barrows lying on a ridge in the Older Moraine belt of West Holstein, between the valleys of the Stor and Eider,

in a district which, as Kersten's maps (1936) show, was one of the most heavily populated regions of Schleswig-Holstein during the *Aeldre Bronzealder*. It is a district well situated for communications with the south and west *via* the Elbe estuary, and with the north and east by numerous ancient trackways, branches of the *Heerweg* and *Ochsenweg*, leading on the one hand to Lübeck and the east, and on the other to Rendsburg, Schleswig and Jutland. Less than 10 km to the south-east of Liesbüttel lies Aasbüttel, where in 1899 another looped spearhead was found in a barrow, although without associations.

The Aasbüttel spearhead is also leaf-shaped, and with flattened loops, but the blade is flat, lacking the internal bevel of the Liesbüttel specimen, and the upper portion of the socket is sharply ridged. Its length is 16.5 cm. It was illustrated by Montelius (*Chron.*, *Abb.* 525); Kersten's (1936) *Taf.* XIX: 8 is labelled 'Aasbüttel' but is in fact another view of the Liesbüttel spearhead.

The basal-looped spearhead from Onstwedde (fig. 28*a*) in the Netherlands is like the Liesbüttel spearhead except for being somewhat larger (length 25.5 cm) and having a ridged instead of a ribbed socket.

Similar basal-looped spearheads with ridged socket, lozenge loops, and internally bevelled blade, but varying in size and relative width of the blade, from associated finds in Britain include: Stibbard, Norfolk (ABI fig. 407, B.M. BAG, fig. 30); Sherford, Somerset (Pring, *Brit. & Rom. Taunton*, Pl. III); Taunton Union Workhouse hoard (frag., Taunton Cas. Museum 24B); Langwood Fen, Chatteris, Cambs. (Fox, 1923, Pl. VII); Brading, Isle of Wight, (Arch. LXXI, 138, Pl. X). A pollen-dated example is from Methwold Fen, Norfolk (Zone VII/VIII; Godwin et al., 1932, 395 ff., Pl. XV). The Sherford and Taunton hoards belong to our Taunton-Barton Bendish phase, as does the Brading hoard with a variety of penannular bracelets of types not uncommon in this phase. Stibbard, a large hoard of unfinished castings, includes broad-bladed looped and unlooped palstaves, plain and with Y decoration, of a distinctive small and debased local variety. Langwood Fen is with the bronze shield, and possibly not a genuine association. Stibbard should not belong to the earliest phase of the middle Bronze Age, equivalent to Early M II, where looped palstaves are not represented, but might be any time after that.

The Bargeroosterveld spearhead (27 cm) has a ridged socket and flat blade, like Aasbüttel but with more elongated blade. The loops have been broken out and it is not clear whether they were of the flattened or 'string' variety.

The other basal-looped spearheads from the Low Countries and that from Obergrünhagen (fig. 29) are characterized by exaggerated size. They vary from 36 cm to just under half a meter in length, and have rather wider blades than one customarily finds on British spearheads of their class, although they are British in all other typological details. The type, generally, is that represented by Lakenheath (ABI fig. 409), except for the difference in width. The Duffel spearhead (38 cm) has a ridged socket, while those from Wichelen? (49.5 cm), Exlooërmond (42 cm) and Obergrünhagen (reconstructed as 36 cm in length) have rounded soc-

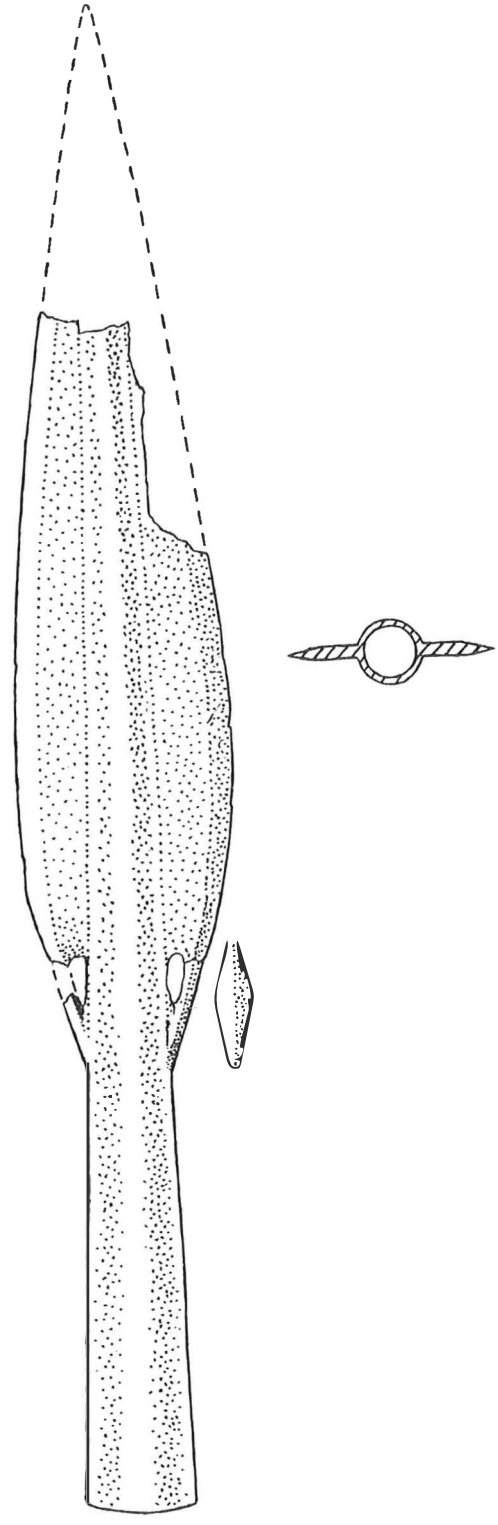


Fig. 29. Spearhead from Obergrünhagen, Kr. Fallingbostel (NW Germany). 1 : 2. After Sprockhoff, 1941.

kets. It is apparently this type of large spearhead, with rounded socket and lozenge-shaped loops, which is represented by the badly damaged and fragmentary specimen found in an urn grave at Wiesloch near Heidelberg (Pl. XIV*a*) together with fragments of a Rixheim-type sword and pottery assigned to Hallstatt A1 (Kimmig, 1940, 155, Taf. 8B, *Taf.* 41: 8, 15)[1] This would be equivalent to Montelius III in the North, and provides a clue as to the probable chronological horizon of the large looped spearheads found in the North, none of which have associations. The Obergrünhagen spearhead was, like Aasbüttel, found in a barrow, but unaccompanied. A close parallel to the Obergrünhagen spearhead from Chazelles-sur-Lyon (Loire) in France was 'probably' associated with a shield-ornamented palstave of our type IA1c (information from Miss N.K. Sandars).

Finally there are two large spearheads with triangular blade and 'string' basal loops, one found in Belgium at Oudenaarde (East Flanders) and another probably in the Nijmegen area (exact locality unrecorded; probably a local find from the Rhine or Maas, judging by its encrustation of river pebbles). These belong to the type (EII in the Hawkes classification) represented by Isleham Fen (*ABI* fig. 406). In outline they are similar to the Maentwrog spearhead (B.M., *BAG*, fig. 29, with rapiers) but the latter has flattened loops, and belongs therefore to Hawkes DII.

2. *With loops on socket*

Three small socket-looped spearheads with plain leaf-shaped blade occur in our North European area: one at Papenvoort, Gem. Rolde, on the *Hondsrug* of Drenthe; the second at 's-Hertogenbosch in North Brabant; and the third at Scowarcz (Schönwarling) on the heights above Danzig on the East Baltic.

The Papenvoort spearhead has its loops in the form of flattened oval-shaped plates; the loops of the Scowarcz spearhead are apparently similar (its loops are described as 'flat' by Sturms; they look oval in his photograph). The 's-Hertogenbosch spearhead has lost its loops; having been converted in antiquity (as shown by the surviving traces of patina) from a British looped model into a Continental pegged spearhead – the only case of such a conversion that seems to be known. The

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[1] The spearhead had been in the cremation fire; the surviving fragments are badly damaged. The side-loops in their present form are slightly expanded, and not purely 'string' loops; it is not clear whether they originally were of oval or lozenge shape. The blade has a slight internal bevel. The writer is grateful to Herr B. Heukemes (Heidelberg) for opportunity to examine the spearhead and for photographs.

The Wiesloch spearhead is not isolated as an example of a basal-looped spearhead traded up the Rhine; others have been found in the Rhine near Mainz (Laubenheimer Grund), Marbach in Bavaria, and Port (formerly known in the literature as 'Heimiswil?') in Canton Bern in Switzerland.

loops were first removed; then the lower stumps of the loops were completely ground away, and peg-holes were drilled where these stumps had been sited. The tops of the stumps do expand slightly, suggesting that they also may originally have been of the expanded-plate type. (See fig. 30).

The Papenvoort and 's-Hertogenbosch specimens are stray finds. The Scowarcz spearhead, first claimed as a British export by Kostrzewski (*Przegl. Arch.* CXII, 1923, 168) was found in a tumulus, in which two flanged axes were also found.

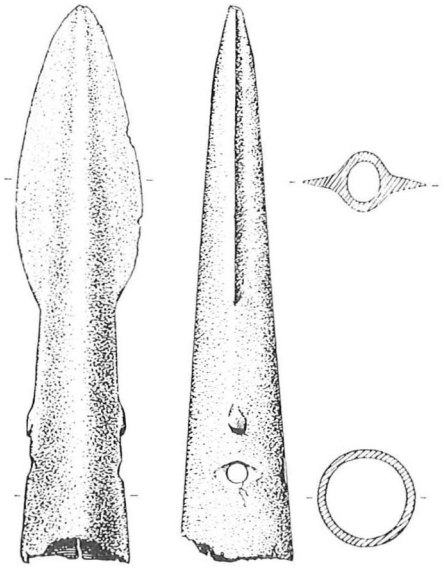

Fig. 30. Spearhead from 's-Hertogenbosch, North Brabant, originally socket-looped; the loops have been removed and replaced with peg-holes. 2 : 3. Mus. 's-Hertogenbosch.

Whether these three objects represent a single closed find is, however, not clear; Sturms (1936, 96) notes that 'the patina on these three objects is somewhat dissimilar, but generally speaking dark green; it cannot be doubted that the three pieces belong together'. Sprockhoff (1934, 2a) was less convinced; the question of association, he said, '*lässt sich leider nicht mehr entscheiden*'. The flanged axes in question are described by Sturms as of South German form; they are generally regarded as being appropriate to 'Montelius I' in Northern Europe, and Junghans, Sangmeister and Schröder (1961, 168) see no difficulty in assigning the find in South German terms to Reinecke A2. Sturms, however, placed it in Montelius II, relying on the spearhead itself as the critical dating evidence, and pointing to the Liesbüttel grave of Montelius II already discussed above. The metal of the objects was analysed by Otto and Witter (spearhead, OW 404; axes, OW 1131–2).

The spearhead has 13% tin, less than 1% lead; and is assigned to JSS Group F2 (Alpine metal!). The two flanged axes are also of bronze, and of JSS groups F1 and F2 respectively; the composition of the three objects differs in detail, and therefore fails to throw any certain light on the probability of their having been associated.

In view of these uncertainties, it would appear to be unwise to put much weight on the Scowarcz spearhead for dating purposes.

Kostrzewski's drawing of the Scowarcz spearhead shows two ribs encircling the base of the socket; Sturms' description also mentions *zwei umlaufenden Rillen* at the socket-mouth, and they show, faintly, in his photograph. Such ribs are not typical of Anglo-Irish spearheads of this type.

The Trade in Looped Spearheads

Most if not all of the looped spearheads discussed above are likely to be actual exports from the British-Northwest French province to Northern Europe; there is no evidence comparable to that which we have cited for palstaves to suggest that the fashion for looped spearheads took root in the North. The concentrations (if this term may be admitted to describe groups of from two to four) of looped spearheads are therefore particularly useful as pointers to the districts which may actually have been visited by traders, raiders or emissaries plying the routes between the English Channel region and the North. The Scheldte and Rhine mouths are obvious enough as points of entry. The group in the northern part of the Netherlands is numerically the largest. It may be explained by two equally plausible routes; by way of the Rhine-IJssel and then overland to Drenthe, or by trade along the Frisian coast, entering by the mouth of the river Hunze. The two spearheads in West Holstein are evidently to be connected with the trade to the Elbe Mouth region, where palstaves and rapiers from the West also tend to cluster. The Obergrünhagen spearhead might have arrived *via* the Elbe or from either end of the Weser. The exact find-spots depend on local and to some extent accidental factors, but all the finds occur in districts of heavy settlement, and the three German finds as well as that from Skowarcz are from barrows, which argues that they were not simply accidental losses by Western visitors but used and valued in the areas in which they were found.

Unfortunately only one of these spearheads, that from Liesbüttel, has a context of associations genuinely useful for chronology; it has been extensively discussed (notably by Sprockhoff, 1934, Childe, 1937, and Cowen, 1948, 233–4). No one would now challenge Cowen's conclusion that basal-looped leafshaped spearheads are thereby proven to go back to the Middle Bronze Age in Britain. But it must be understood that Kersten's IIA dating of the Liesbüttel spearhead does not

imply an *early* Montelius II dating. In Kersten's system (1936, 97 ff.) Period IIA in Schleswig-Holstein does not correpond with his IIa (i.e., Broholm I) in Denmark (no finds of this stage were identifiable in Schleswig-Holstein) but rather with IIb; similarly, IIB in Schleswig-Holstein corresponds with II cin Denmark. But Broholm (*DB* II, 212 ff.) has now abandoned the distinction between IIb and IIc in Denmark; both are included in his Period II. If the distinction between them is not enforceable in Denmark, where the richness of development makes finer distinctions possible, the question of whether the distinction between Kersten's IIA and IIB in Schleswig-Holstein still holds good calls for re-examination by the authorities on that area. In any event, it is plain that the Liesbüttel spearhead belongs to the period corresponding to Broholm II and not Broholm I; it falls in the same period as the Ostenfeld and Frøjk hoards with their Western palstaves.

For the next fixed-point in the chronology of the British spearhead trade to the Continent we must turn to the Wiesloch find in the Rhine-Neckar area, which shows that larger basal-looped spearheads were being exported from Britain in the period equivalent to Montelius III. The large spearheads from Obergrünhagen and the low Countries are not likely to be earlier than this; the nearest parallel in datable associations in Britain belong to our Taunton-Barton Bendish phases. Since basal-looped spearheads with expanded loopplates are not a normal feature of the Wilburton and carps-tongue industries, it may be supposed that these types had gone out of use, in the main, in the Lowland zone by the time of those industries, and the probability of the exports being datable to these Late Bronze Age phases is accordingly slight, unless the dubious Langwood Fen association (cf. p. 130 below) be taken as evidence for the late survival of the spearhead type. The large triangular-bladed spearheads with 'string' basal loops from Nijmegen and Oudenaarde are typologically the latest of the exported spearheads, and presumably equivalent in Northern terms to Montelius IV.

C. IMITATIONS AND BORROWINGS

While there is no evidence for the imitation of Anglo-Irish looped spearheads in Northern Europe, Sprockhoff has called attention to the occurrence of unlooped spearheads in Germany which possess features which he regards as derived from Western spearheads by imitation or borrowing. A spearhead from the hoard at Neuhaldensleben (Pl. V*a*) (Sprockhoff, 1941, *Taf.* 28: 2–5), which contains two imported Western palstaves discussed previously, has a sharply ridged socket and internally bevelled blade, both features often found on British basal-looped spearheads. The Neuhaldensleben spearhead may well be an imitation of a British spear-

head, if indeed not an actual import, along with the palstaves, from the British Isles; although it must be admitted that the ridged socket is a not uncommon feature of Northern spearheads from Broholm I onwards, and need not in itself be a purely British feature. Hachmann (1957) claims the Neuhaldensleben spearhead as of Northern manufacture (Valsømagle type).

A long thin rib running down the length of the socket, such as occurs on the imported Liesbüttel spearhead in Holstein, is also found as one of the identifying features of the spearheads of the Ilmenau culture known as Lüneburg Type II spearheads (Tackenberg, 1932, 63 ff.; *Schumacher Festschrift*, 141 ff.). Sprockhoff has suggested that the socket-rib of the Ilmenau spearheads is a borrowing from the British spearheads of Liesbüttel type (1941, 79). This has been doubted however, by Tackenberg (1949, 50 ff.) who points out that the socket-rib is the only feature which the British and Lüneburg spearheads have in common, and who prefers to believe that the Lüneburg socket-rib is an independent local invention, imitating a casting-seam down the centre of the blade. Improbable as this sounds, a spearhead with a casting-seam in exactly this position is in fact illustrated by Brøndsted (*Danmarks Oldtid*, II, fig. 111). On the other hand, the socket-rib has a long prior history in the British Isles (appearing, for example, on one of the Omagh spearhead moulds, Coffey, 1913, fig. 2A) and Sprockhoff's derivation is chronologically possible; the Ilmenau Type II spearheads first appear late in Montelius II but are especially common in III. With spearheads as with palstaves, there was in general a great deal of borrowing back and forth across the North Sea.

A more striking case of imitation appears after the end of the Middle Bronze Age, with the adoption in both provinces of the peculiar technique of casting spearheads with a hollow blade. In Britain the hollow-bladed spearhead (Class VB in the Greenwell-Brewis classification) appears in the Wilburton Fen hoard (Clark, *VCH* Cambs, I, 281, fig. 20), and other typical Late Bronze Age hoards. Two sub-types can be distinguished. One, which may be called VB1, the 'half-hollow' variety, resembles the normal Class V leaf-shaped spearhead in general appearance, differing only in having its blade partially hollow. It cannot always be recognized from published illustrations unless a cross-section is given. The second variety (VB2) assumes a quite distinctive form; the hollow blade wings become much thicker, so that the cross-section is lozenge-shaped or nearly so, and the socket becomes very short. VB2 appears to have a more limited distribution than VB1, being largely confined to South England; only one find is known in Wales (in the Guilsfield hoard, Grimes, 1951, fig. 70: 7) and one in Ireland (Bogthaduff, Co. Roscommon, NM Dublin, P. 1951: 55).

In Northern Germany (especially in Mecklenburg), Denmark and South Sweden are found analogues to the British Type VB2 in technique and general form, although there are differences of detail between the typical Northern hollow-bladed

spearheads (which are regarded as a characteristic form of Montelius IV; Broholm, DB IV, 37; Sprockhoff, 1937, 24–5; Baudou, 1960, 13, 160 (list), *Karte* 5, *Taf.* III: IVA; Ørsnes, 1958) and the British ones. The Northern spearheads have a different blade outline, and often have two curving ribs on the socket, a feature not found in Britain. Yet the similarities justify the assumption that the Northern and British series are closely related, and there are a few examples in the North which provide a more intimate link between them. Thus a spearhead found in Scania (Vittskovle sn.; fig. 31) fairly closely resembles one from Wilburton Fen, and others from the Thames at Richmond (Greenwell and Brewis, 1909, fig. 45) and Fenny Bentley, Derbyshire (B.M. BAG, fig. 21). Another hollowbladed spearhead from Scania (Skurups sn., fig. 31) has a ribbed ornament on each blade wing suggesting imitation of British spearheads of the lunate-openings type, which at

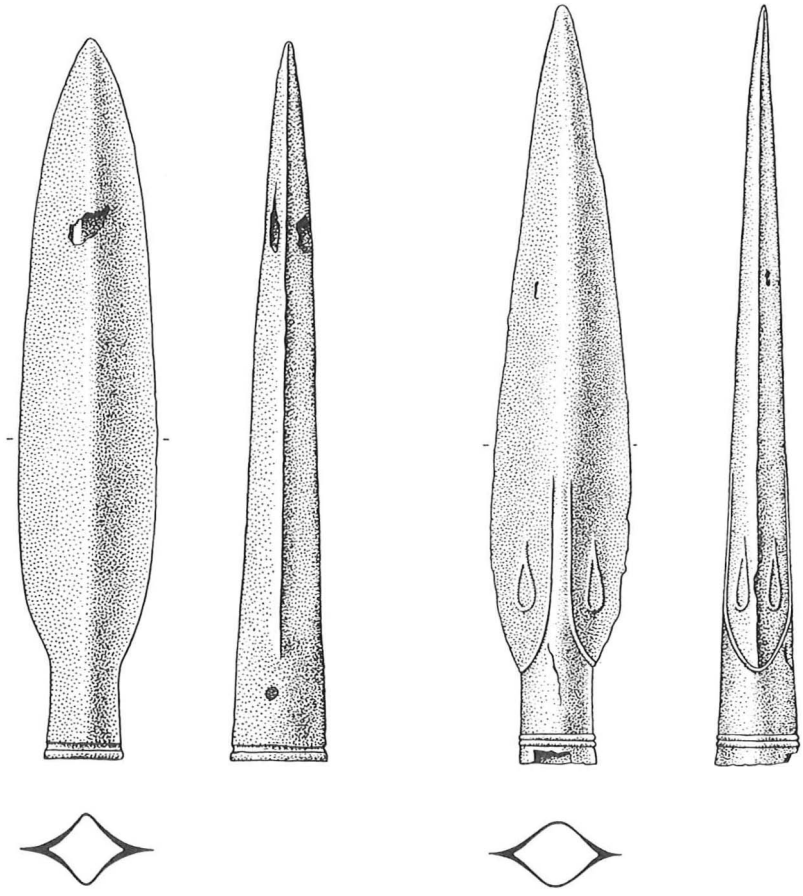

Fig. 31. Hollow-bladed spearheads from: 1 Vittskovle sn. and 2 Skurups sn.; both Skåne, Sweden. 1 : 2. Mus. Lund.

Wilburton Fen and elsewhere are contemporary with hollow-bladed VB2 spearheads in Britain. These features, as well as the similarity of technique, which can hardly be accidental, suggest contact between South England and Scania in the Nettleham-Wilburton phase-Montelius IV.

Spearheads with the 'half-hollow' feature analogous to British type VB1 also occur in Northern Europe (a probable British export was dredged from the Elbe at Harburg; Mus. Harburg, 49440), but the type has not been studied on the Continent and its distribution in space and time is therefore unknown.

In the British Isles, 'half-hollow' spearheads occur in a wide variety of forms in the Wilburton phase and also in comparatively late hoards such as Stoke Ferry, Heathery Burn and Dowris. Some examples of the long, narrow Boyle type (*Arch.* LXI, Pl. LXXIII: fig. 51) represented at Dowris, and in the Huelva hoard in Spain, are 'half-hollow'.

Another Montelius IV spearhead contact between Britain and North Germany is represented by a form of spearhead with a leaf-shaped blade which has its widest part close to its base, and then curves in sharply to the socket, as in the hoard from Bargfeld, Kr. Uelzen (Bath, 1953, *Taf.* XXXI: 12b). Bath (*Ibid*, 82) tells us that it is not a typical Ilmenau form. Sprockhoff (1956, *Abb.* 64) illustrates some large examples of the same type from Montelius V: two from the Lesum at Burg Lesum (near Bremen) and one from Küstenkanal, Kr. Aschendorf (on the Ems). Spearheads with a blade of this characteristic shape are not uncommon in Britain. Some spearheads with blades of this form have loops on the socket; others have 'protected' loops inside the blade (*e.g.*, B.M. *BAG*, fig. 22); unlooped specimens are not unknown (*e.g.*, Cookham, Berks., B.M. 1905/7, 13/1). The Bargfeld spearhead might, from the illustration, well be a British export; its socket, however, is partly broken off so that we cannot tell whether it had loops. Another, possibly from a grave, is from Leitzkau-Göbel, Kr. Loburg, Saxony (Von Brunn, 1954, 10, *Taf.* 11: 5). A spearhead with a similar blade form, but with a facetted socket, was found in another M IV hoard at Bad Oldesloe, Kr. Stormarn (Sprockhoff, 1937, *Taf.* 6: 17). It appears to be a hybrid between the British form and the 'facetted' type which, according to Sprockhoff, comes to North Germany from an unidentified source farther south (*Ibid.*, 26; Hingst, 1959, *Taf.* 72–82).

LIST OF LOOPED SPEARHEADS IN NORTHERN EUROPE

(*cf.* Map VII)

I. With loops at base of blade

Germany

1. Kr. Rendsburg. *Liesbüttel*. Present length 16.5 cm. Ribbed socket, lozenge loops, internally bevelled blade. Grave find (Kersten M IIA) with bronze dirk, flint dagger Type VI. Mus. Schleswig, K.S. 12860. Kersten, 1936, 65, Taf. XIX: 1–3, 8 (8 incorrectly labelled 'Aasbüttel').
2. Kr. Rendsburg. *Aasbüttel*. 16.5 cm. Ridged socket, flat blade, lozenge loops. Found in barrow (no associations). Mus. Schleswig, K.S. 10607. Kersten, 1936, 65; Montelius, *Chron.*, Abb. 525.
3. Kr. Fallingbostel. *Obergrünhagen*. 36 cm. Round socket, bevelled blade, lozenge loops. Found in barrow (no associations). Fig. 29. Sprockhoff, 1941, 78, 82, Abb. 64.

Netherlands

4. Gem. Odoorn. *Exlooërmond*. 42 cm. Round socket, lozenge loops, internally bevelled blade. Mus. Assen. Fig. 28*b*. Van Giffen, 1938, *Abb.* 27: 1.
5. Gem. Emmen. *Bargeroosterveld*. 26.5 cm. Ridged socket, flat blade, lozenge loops. Mus. Assen. Van Giffen, 1938, *Abb.* 27: 2; Butler, 1961, fig. 48.
6. *Onstwedde*. 25.5 cm. Ridged socket, internally bevelled blade, lozenge loops. Mus. Groningen, 1918/V.1. Fig. 28*a*. Glasbergen, 1957, Pl. IX: 2.
7. Near *Nijmegen?* 37.5 cm. Triangular flat blade, string loops, round socket. Mus. Nijmegen (ex. Kam Coll.), no. 15 (not mapped).

Belgium

8. Prov. Antwerp. *Duffel*. From the Nethe. 38 cm. Ridged socket, internally bevelled blade, lozenge loops (cast). Mus. Brussels B. 2903.
9. Prov. O. Vl. *Wichelen?* 49 cm. Round socket, internally bevelled blade, lozenge loops. Mus. Brussels, B. 2967. Pl. IX*b*. Mariën, 1952, Fig. 213: 2. Bull. Mus. Roy, d'Art et d.Hist., 1931, fig. 6: 1. De Laet and Glasbergen, 1959, Pl. 31.
10. Prov. O. Vl. *Oudenaarde*. Pl. IX*b*. 45 cm. Triangular blade with ridges, round socket, string loops. Mariën, 1952. Fig. 213: 3. Bull. Mus. Roy. d'art et d'Hist., 1931, fig. 6: 4. De Laet and Glasbergen, 1959, Pl. 31.

II. With loops on socket

Poland

11. Danzig Heights. *Skowarcz* (Schönwarling). Pl. IX*b*.
    Flat blade, oval? loops. Found in barrow, uncertainly associated with two low-flanged axes. Sturms, 1936, 29, Taf. 29: 8. Sprockhoff, 1934, 29, Taf. X. Kostrzewski, 1923, 168.

Netherlands

12. Drenthe. Gem. Rolde. *Papenvoort*. 12 cm. Flat blade, oval loops. Mus. Assen, 1923/II.1. Van Giffen, 1938, *Abb.* 27: 3.
13. North Brabant. *'s-Hertogenbosch*. Flat blade, loops anciently removed and replaced by peg-holes. Mus. 's-Hertogenbosch. Fig. 30. Butler, 1961, 54–5, fig. 1.

NON-LOOPED BRITISH OR BRITISH-INFLUENCED SPEARHEADS CITED IN TEXT

Denmark

Aarhus Amt. Sporup s. *Sporuplund*. 18.5 cm. 'Dagger-bladed' socketed spearhead resembling Arreton Down type. Grave find (Broholm II). *NMC* B. 7096–8. Fig. 27. Broholm, *DB* I, 93: II, 106, Pl. 18.

Germany

Saxony. *Neuhaldensleben*. Spearhead with ridged socket, internally bevelled leaf-shaped blade. Hoard (with two Britannico-Sequanian palstaves, Bohemian palstave). Pl. V*a*. Kossinna, 1928, Taf. 32: 10–15. Sprockhoff, 1941, 78 ff., Taf. 28: 2–5.

Kr. Uelzen. *Bargfeld*. Spearhead with broad-based leaf-shaped blade. Hoard (M IV). Bath, *NNU* 1953, 82, Taf. XXXI: 12b.

Kr. Stormarn. *Bad Oldesloe*. Spearhead as Bargfeld, but with faceted socket. Hoard (M IV). Sprockhoff, 1937, Taf. 6: 17.

CHAPTER VI

DAGGERS, RAPIERS, KNIVES AND RAZORS

(Lists, pp. 114–5; fig. 32, 33; Maps VIII, IX)

A. GROOVED OGIVAL DAGGERS AND RAPIERS

A British, or at least Western European, origin has often been claimed for the grooved ogival dagger from Virring in Jutland (Forssander, 1936, *Taf.* XL) and the very similar specimen from Deutsch-Nienhof, Kr. Rendsburg. A British origin has likewise been suggested for a fragmentary blade found in peat at Østerhoved Mose in Jutland.

That the Virring-type daggers are British in origin appears doubtful to the present writer. Admittedly, these blades are very near relatives to the British and Irish grooved ogival daggers of Ap Simon's 'longer' sub-type (1954, 44 n.), of which the unlocalized dagger from Ireland, Raftery, 1951, fig. 134, may be cited as an example not unlike the Virring and Deutsch-Nienhof daggers in outline, decoration and rivet-arrangement. Ap Simon has pointed out that this sub-type is very close to the Swiss grooved ogival daggers (cf. Kraft, 1926; Flanagan, 1961).

The majority of the Swiss daggers have six rivets, but four-riveted examples also occur. But the four-riveted Virring and Deutsch-Nienhof daggers are also very close to Swiss prototypes. They are slightly narrower in the lower part of the blade than most of the Swiss daggers. In cross-section they are a flattened pointed oval; the Virring dagger has a not very clearly defined medial ridge on the upper part, the Deutsch-Nienhof specimen has a slightly raised midrib, scarcely 1 cm wide at the hilt end and tapering down until it disappears about one-fourth way down the blade This form of midrib can be paralleled in Switzerland (e.g. Liddes, Kt. Wallis, Mus. Zurich) but not in Britain. Of distinctively British or Irish features (such as the dome-shaped midrib, hatched triangle decoration in an arc below the hilt-plate, ribs along the edges of the blade etc.) there is no trace on the Northern daggers. Although a dagger very similar in size and proportions to Virring (the hilt-plate is damaged but it appears to have had four rivets; present length 23.6 cm, compared to 25.5 cm for Virring) comes from the Thames in Surrey (private collection; Index of Bronzes), a parallel derivation from Switzerland would account for the resemblances. Since the British and Northern daggers are closely derived from the same source, it is however probable that they are

quite contemporary with each other. A West French origin for the Virring and Deutsch-Nienhof daggers, is to be doubted. Giot (1960, 36–8) gives the impression grooved ogival daggers are rare in Brittany. The French examples sometimes cited as parallels for Virring (e.g. Villeneuve St. Georges, De Mortillet, 1903, Pl. LXXIV 841; Collection Picketty, Lantier, 1948, Fig. 18: 26) are actually full-length rapiers and presumably later in date, though clearly in the same family.

More likely to be of Western European manufacture, but not British is the Østerhoved Mose blade published by Broholm (1935, 257–8, fig. 1). Only the lower end of the weapon survives; from its dimensions (the fragment is 36.6 cm long and 5.6 cm wide) it is clear that it is not a dagger but a rapier of exaggerated proportions. The tang-like projection is simply the survival of the thickened midrib, the thinner edges having been broken or corroded away. Both its size and the distinctive formation of the midrib – dome-shaped in cross-section in the area enclosed by the grooved lines, becoming a thin ridge below – correspond exactly with the broad rapiers of Sandars' Atlantic type, as at Plougrescant (C du N). The type is represented by several finds in Brittany, one of them (Castello) a hoard with eight examples, and seemingly manufactured in that province; some examples have metal hilts with a drooping lower edge, a distinctively Western European feature (cf. Holste, 1942, with distribution map of rapiers with this hilt form).

The origins of the blade form of the Atlantic rapiers can be traced to eastern and central Europe. A sword allegedly found at Pella in Macedonia (Holste, 1953, *Taf.* 15: 8) has a blade resembling the Atlantic rapiers, although the metal hilt has some affinity with Hungarian swords (Holste groups it with the Apa type). Daggers with similar midribs are found in Switzerland; full fledged Atlantic rapiers come from the Rhone near Lyon, Beaune, the Seine at Paris and the Waal at Nijmegen. Baroque ceremonial versions (cf. Plougrescant) have been found at Beaune in eastern France (stray) and Ommerschans in Overijssel (hoard; Butler and Bakker, 1961). The same midrib formation occurs occasionally on daggers and narrow rapiers in the British Isles. Finally there is the remarkable short sword from Karlevi on Öland, the midrib form of which resembles the Atlantic rapiers, but with a leaf-shaped blade recalling Hajdú Sámson and a metal hilt the nearest analogy to which is Trassem (Behrens, 1916, *Abb.* 6).

Since the only significant concentration of rapiers of size and form comparable to the Østerhoved specimen is in Brittany, is seems probable that the Østerhoved blade is a Middle Bronze Age import to Jutland along the Atlantic route. Its dagger prototypes are attributed to Reinecke A2; the fullfledged rapiers, on the basis of the Pella-Apa connection, would begin in the Earliest Tumulus horizon of Holste. A typical Atlantic rapier also appears in the Middle Bronze Age hoard of Tréboul in Brittany (Briard, 1956); the baroque end of the development is dated by the Ommerschans hoard to the time of the Pantalica phase in Sicily.

B. TRAPEZE-HILTED AND RELATED RAPIERS

A few finds of Anglo-Irish rapiers occur in Northern Europe.

Three of these rapiers form a geographical group in North Germany, two in the Lower Elbe area and a third near the coast between the estuaries of the Elbe and Weser. One from Ölixdorf, Kr. Steinburg[1] (fig. 32: 3) with a three-ribbed blade of a type not uncommon in South England, lies near the river Stor which flows into

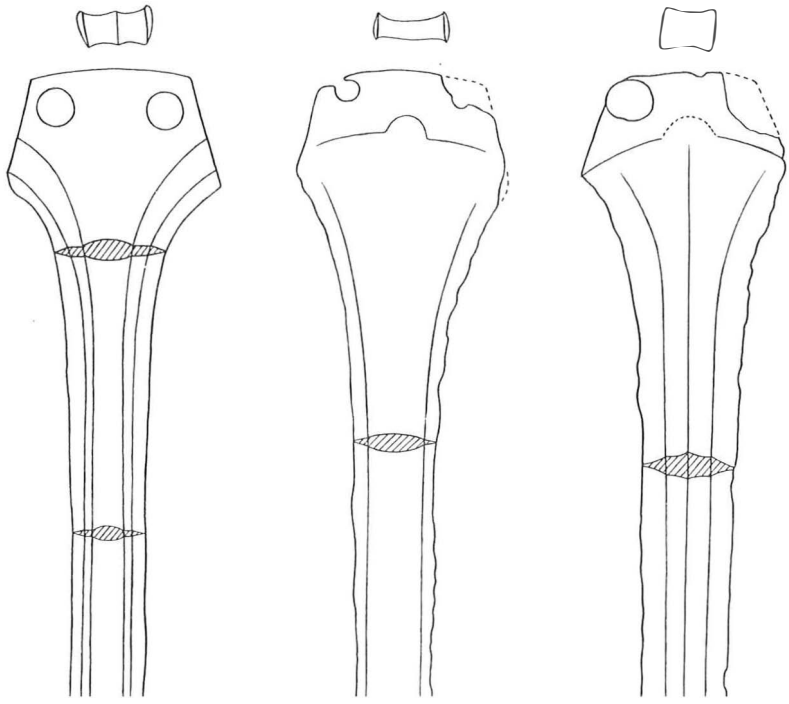

Fig. 32. Rapiers from North-Germany. 1 Westerwanna; 2 Ruschwedel; 3 Ölixdorf, Kr. Steinburg. 1 : 3. Museums stade (1, 2), Schleswig (3).

the Elbe estuary from the north; another from Ruschwedel, Kr. Stade (fig. 32: 2), just south of the Elbe, with a prominent rounded midrib, was found in a grave in a barrow, though without other associations. The rapier from Westerwanna, Kr. Hadeln, has a rounded midrib flanked by two grooves which broaden out to become wide inwardly bevelled facets on the hilt-plate (fig. 32: 1).

All three of these rapiers have trapeze-shaped hilts with two rivets. The Ölixdorf and Ruschwedel rapiers preserve the outline of the lower edge of the hilt,

[1] A Montelius IV hoard from the same place, published by Sprockhoff (1952, 118 ff. Abb. 1) has, apparently, no connection with the rapier.

which had the triple-arc form known from the metal-hilted Kanturk and Mont St. Aignan rapiers. Hilt-marks of this form are observable on many British trapeze-hilted rapiers.

Another rapier, found in Westphalia, at Greffen, Kr. Warendorf, appears less typically Anglo-Irish in details, but Sprockhoff (1941, 61, *Taf.* 33: 1) regards it as a product of Irish influence if not an actual import, comparing it with the well-known rapier from Lissane. Rapiers of Anglo-Irish types also occur in the Netherlands (*Emmen*, Drenthe, 3 ridges on blade, but rather short; *Museum Nijmegen*, without exact provenance, with rounded midrib; *Maastricht*, atypical hilt form; *Lobith*, Gelderland, long and narrow, four notches. The first two are very British-looking, the second two somewhat deviant).

The use of the Rhine-Westphalian route is suggested by these and the Greffen find.

These Continental rapier finds unfortunately offer no help for chronology, being all unassociated finds; though the Ruschwedel barrow grave is likely to have belonged to the Middle Bronze Age of the area, which in the Stade district has a Northern rather than a North German character. The British trapeze-hilted rapier is presumably to be derived from the Tumulus Bronze Age type with a similar hilt form, although usually with a different form of midrib and smaller rivets. The trapeze-hilted rapier from Mont St. Aignan (Seine-Inf.), associated with palstaves and a metal-hilted rapier with the three-arc hilt form, provides a link between the Tumulus and Anglo-Irish series. British associations include the hoards from Maentwrog (*B.M. BAG*, fig. 29, with basal-looped spearhead with triangular blade); Crediton, Devon (Inventaria, *GB.* 4, with a palstave of our type IIA3a and another of distinctive Cornish-Devon type, related to those of the Somerset industry of the Taunton phase); and in Scotland the Glentrool hoard, which also has Somerset connections.

LIST OF RAPIERS OF ANGLO-IRISH FORM IN NORTHERN EUROPE (TRAPEZE HILT, TWO RIVETS)

(*cf.* Map VIII)

1. Kr. Steinburg. *Ölixdorf*. Mus. Schleswig, K.S. 20265a. 3 ribs on blade; three-arc hilt outline (fig. 32: 3).
   Kersten, 1939, 388, *Abb.* 111a (p. 100).
2. Kr. Stade. *Ruschwedel*. Museum Stade 1119. From a grave in a barrow. Rounded midrib, three-arc hilt outline (fig. 32: 2).
3. Kr. Hadeln. *Westerwanna*. Sprockhoff, 1941, *Taf.* 33: 3 (fig. 32: 1). Rounded midrib flanked by grooves.
4. Drenthe. *Emmen*. Dredged from the Mussel Aa. Short ('Kurzschwert'); 3 ribs on blade. Felix, 1945, *Abb.* 256.
5. *Netherlands*. No exact provenance. Museum Nijmegen, no. I (ex Kam coll.). Rounded midrib. Felix, 1945, *Abb.* 257.

Atypical

1. Kr. Warendorf, *Greffen*, Mus. Essen. Sprockhoff, 1941, *Taf.* 33: 1.
2. Gelderland. *Lobith.* From the Rhine. Museum Leiden, e. 1925.1.2. Long and narrow; four notches. Midrib form not indicated. Felix, 1945, no. 241, *Abb.* 250.
3. Limburg. *Maastricht*. Atypical hilt form. Felix, 1945, no. 246, *Abb.* 255.

C. SOCKETED KNIVES

Two socketed knives of British-Irish origin have been published by Sprockhoff (1956, 14, 77, *Abb.* 4). One, a stray find, is from Tostedt, Kr. Harburg (*Ibid.*, *Abb.* 4: 1); the other from a Montelius V hoard at Böck, Kr. Randow (*Ibid.*, *Abb.* 4: 2).

Both specimens belong to the Thorndon type (Hodges, 1956, 38, 51–2, dist. map fig. 4; cf. the Thorndon hoard, Suffolk, *Inventaria* GB. 11, assigned to LB 2). Knives of this type are common in South England, especially in the Thames Valley and East Anglia, and in Ireland; specimens are also known from France.

D. TANGED RAZORS

The possibility that British tanged double-edged razors were exported to Northern Europe was first raised by the present writer, with I. F. Smith (1956). We were then concerned to point out the connection between British razors and those of the Central European Tumulus Bronze Age[1], which possessed tanged razors from Reinecke B1 onwards, and thereby to break through the chain of misconceptions which had led to the erroneous dating of all such razors, together with the things associated with them, to LB2. It was also suggested that the narrow-tanged (Class IB) razor from the rich Sögel grave at Drouwen in Drenthe (*Ibid.*, 22–4, 49, no. 13, with further references; fig. 34: 1) might well be a British export. Two other long-tanged specimens from graves on the North Frisian island of Amrum were also cited as possibly of British origin or inspiration (*Ibid.*, 22, fig. 3: 6, 7; now also Kersten and LaBaume, 1958, 125, *Taf.* 59: 13, and 131, *Taf.* 85: 19. The first of these can now be seen, from the new illustration, to be much less razor-like than we formerly supposed, and is to be withdrawn from our list.

More recently, further examples of early double-edged razors have been published both in the British Isles and in Northern Europe. Those in the British Isles

[1] Tumulus Bronze Age razors additional to those listed in Butler and Smith, 1956, include: (1) Geroldshausen, Kr. Würzburg; inhumation grave; fig. 33: 7; H. Müller-Karpe, *Bull. Pal. Ital.* N.S. XIII, 69–70, 187–206, fig. 5; (2) Batzhausen, Ldkr. Parsberg, Oberpfalz; presumably from grave in one of the tumuli there; Torbrügge, 1959, 141, *Taf.* 29: 21.

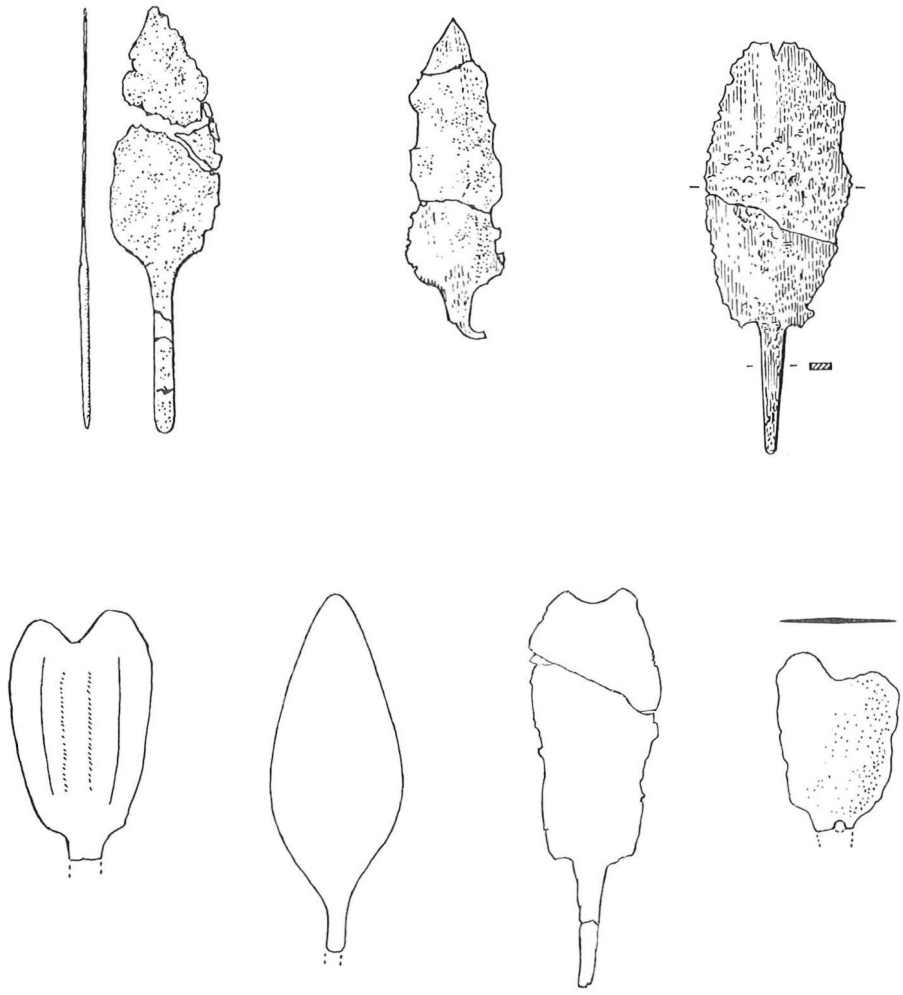

Fig. 33. Tanged razors from: 1. Drouwen, Drenthe (after Glasbergen); 2 Nim, NE Jutland (after Sylvest) (= Pl. XIII*a*); 3 Ehestorf, Kr. Bremervörde (after Nowotnig); 4 Mus. Cloppenburg; 5 Amrum, North Frisian Islands (after Olshausen); 6 Gasteren, Drenthe; 7 Geroldshausen, Kr. Würzburg (after Müller-Karpe). 1 : 2.

include the specimens from Strathern, Leicestershire (in grave with Wessex-type pygmy cup; *Inventaria* GB. 21) and Kilmore, Co. Westmeath (Prendergast, 1960, 5 ff., fig. 2a, b). In Denmark, a good specimen, though with damaged tang, was found in a rich warrior's grave in East Jutland, at Nim (fig. 33: 2; Sylvest, 1957, 44 ff., fig. 2e; I am grateful to Dr. Sylvest and to P. Kjaerum for a full-size outline drawing of this razor). The grave is dated to Broholm II. Another rich grave of the same period, but this time in the district between the lower Weser and the lower Elbe in Northwest Germany, at Ehestorf, Kr. Bremervörde (fig. 33: 3; Nowothnig,

1958, 152 ff., *Taf.* I: 3, *Abb.* 1b) contains a fine tanged razor, found with remains of its original leather sheath. It has angular shoulders and a slight V-notch.

Mention should also be made of the tanged razor with slight round notch at the butt, but without a midrib, from Zeijen, Gem. Vries, Drenthe (fig. 33: 6; Van Giffen, 1949, *Afb.* 22a, no. 76).

This specimen, which is severely corroded, and the edges of which have been abraded, lie imbedded in plaster in the Assen Museum, numbered but without a corresponding inventory entry. Reference to the Find Book for 1917 (BAI, Groningen) and the original excavation plan shows, however, that it is certainly the specimen excavated by Van Giffen in the prehistoric cemetery at Zeijen; it was not actually found in a grave, but within a rectangular enclosure-ditch of Early Iron Age date (with which it need not necessarily have any connection), together with sherds and stone objects. In the Museum are preserved under the same number, however, only a single wall sherd of coarse pottery of indeterminate type and a fire crackled scrap of worked flint. Part of the site-plan, with a marginal miniature drawing (adequate for identification), was in fact illustrated by Van Giffen, in connection with later excavations on the same site (Van Giffen, NDV 1949, *Afb.* 22, no. 76). Unfortunately it is not clear whether the razor came to the site in question with the Tumulus or with the Urnfield folk, both groups having buried their dead there.

The very rarity of these double-edged razors in Northern Europe suggests that they were never part of the repertory of the smiths in the area, and encourages the belief that the specimens found represent imports. The Drouwen, Zeijen, Ehestorf and Nim specimens are surely to be connected with the British rather than with the Tumulus Bronze Age razors on the basis of their size and proportions and the shape of blade and tang. Three of these specimens come from rich warrior's graves, which date their beginnings as early as Sögel times (equated by Hachmann, 1957, with Reinecke A2) and also show their use in Northern Period II.

Western European razors of Class II were apparently also exported on occasion to Northern Europe. A bifid razor was found by Van Giffen (1945, 105, no. 27d, *Afb.* 15A), in the Urnfield at Gasteren, Gem. Anloo, Drenthe. This razor has a broad V notch at the butt; its tang has an atypically carinated outline, and at the base of the tang is a pair of diagonal sideward projections. Van Giffen interpreted these lugs as the stumps of a ring-handle, such as occurs on Central European Urnfield razors which were occasionally imported to the district. The projections are not, however, curved; they are not clearly broken off; and the end of the tang continues on beyond them – all features which argue against the ring-handle interpretation. We should therefore rather connect the projections on the tang of the Gasteren razor with the lugs found in the same position on the razors of Hodges' Class IV (Hodges, 1956, 42, list p. 55; Evans, *ABI* fig. 257–8). These Class IV razors are, however, leaf-shaped and not bifid. Even better as a parallel for the Gasteren razor's lugs are, however, the diagonally set lugs which are a feature of

one Nordic type of single-edged knife characteristic of Montelius IV (Sprockhoff, 1937, *Taf.* VI: 10; Broholm, DO IV 33; newest example, *Ausgrabungen und Funde* VI, 1961, 133, *Abb.* 6a). It may be that the Gasteren razor was made by a smith familiar with this type of Nordic knife, although admittedly specimens of the knife-type in question are so far unknown in the district. Yet in other respects the Gasteren razor resembles Western European bifids. It is not, however, a specimen of the fully developed Atlantic bifid type, since it has no midrib, no hole in the blade, and a rather broad notch. The Gasteren grave which contained the razor, the richest grave in the cemetery, belongs to a stage which locally can be equated with early Hallstatt B and late Montelius IV, and may thus be more or less contemporary with a Western European bifid exported in the other direction to Sicily in the Cassibile stage (Hencken, 1955)[1]. To the same stage at Gasteren belong urns which, as Waterbolk (1962, 29) has pointed out, bear a close resemblance to the East Anglian globular urns of Ardleigh type.

The blade of a large bifid razor (9.5 × 7 cm), with an ornamented midrib, was found in a Central German stonepacked cist on the Sehringshöhe (Rudloffsplan II) near Helmsdorf, Mansfelder Seekreis (Rauch, 1911, 86–7, *Taf.* XIII: 10). The razor, which has lost its tang and part of the blade, bears, according to Rauch (cf. also Nowothnig, 1958, 166, *Taf.* I; 1) decoration on the midrib consisting of barely visible small diagonal strokes. The razor was found on the paved floor of the 3 meters long cist. Near it was a roll-headed bronze pin (an astonishingly long-lived type), Rauch, *Taf.* XIII: 6; there were no other grave goods. An adjacent cist of very similar construction contained, however, a pottery bowl, a bronze penannular bracelet with slightly expanded, meeting ends, and a bronze spearhead (*Ibid.*, Taf. XIII: 5, 9). These cist graves belong to the 'Unstrut group' described by Von Brunn (1954); the Helmsdorf graves are, according to him, to be assigned to Montelius IV.

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[1] The Cassibile razor may be compared with the Iberian specimens represented in the Huerta de Arriba hoard (Province of Burgos), *Inventaria* E. 2, 2: 11–14.

CHAPTER VII

SWORDS

(List, p. 119; fig. 34; Map X)

A. FLANGE-HILTED SWORDS

Finds of British and Western flange-hilted swords in Northern Europe have been studied by Cowen (1952, 135 ff., 144 ff. (list), Pl. XV–XVII). He classifies them as follows:

U-type
Badegow near Crivitz, Mecklenburg-Schwerin; '*North Brabant*', Netherlands.

V-type
'*North Brabant*'.

Wilburton-Ewart transition: Höver, Kr. Uelzen, Hanover (grave?).

Late Ewart (mostly showing Hallstatt influence)
Gentbrugge, East Flanders, Belgium; *Nijmegen*, Gelderland, Netherlands; *Bacharach*, Rhine Province; *Valdorf*, Lkr. Herford, and *Minden*, Westphalia; *Beenz*, Kr. Templin, Brandenburg; *Kirke Søby*, Fyn, Denmark (hoard, Montelius V). Fragment possibly of this type: *Hellwitt*, Sønderborg A., Als, Denmark.

Carps-tongue (from Atlantic France)
Nijmegen, Gelderland; *Catlenburg*, Kr. Northeim, Hanover; Elbe valley *near Dresden; Stendell*, Kr. Angermünde, Brandenburg (with added Northern antennae-hilt); *Wojciechowice*, pow. Jedrzewow, Kielce, Poland (hoard, Montelius V). (For fragments in Rhineland hoards of Hallstatt B, see Cowen, 1955).

A sword closely resembling the specimen of Ewart type from Bacharach has meanwhile been illustrated from the Rhineland; it comes from *Marienbaum*, Kr. Moers (Landesmuseum Bonn, 54: 563).

Von Uslar, *Bonner Jahrbuch* 157, 1957, 413, *Abb.* 16, erroneously describes it as a 'carps-tongue' sword; Kiekebusch, 1959, 9, *Taf.* I: 12, calls it a 'typical Hallstatt sword', although she re-illustrates the remarkably similar Bacharach specimen beside it, *Taf.* I: 11. Her *Taf.* I: 13, more Hallstatt-like than the other two, is without exact provenance.

The chronological problems connected with these swords were dealt with by Cowen in a series of studies (1951, 195 ff.; 1952, 129 ff.; 1955, 52 ff.). In Cowen's view the earliest British leaf-shaped, flange-hilted swords were derived by importation from Western Germany early in Hallstatt A, and were very soon imitated in

Britain. The beginning of British exportation to the North, represented by the Badegow sword, should have occurred, in Cowen's view, before the end of Montelius III – in time to allow the slotted tang of the British swords to be imitated on the swords of the Lower Elbe type (Sprockhoff's Type IIc), which are now regarded as a characteristic form of the Ilmenau Culture in its later phase, corresponding with Montelius III. The Lower Elbe swords are short, not leaf-shaped, and generally quite dissimilar to the British sword-type in question; it is a matter of the borrowing of a single feature only. The case thus parallels that of the alleged borrowing by the Ilmenau Culture from Britain of the socket-rib for its Type II spearheads, as described above (p. 106). Cowen concedes the possibility, though he doubts the probability, that the slotted sword-tang originated on the Lower Elbe rather than in the West.

In fact, no leaf-shaped sword is datable by associations in Northern Europe until Montelius IV, and the force of Cowen's endeavour to show their presence in Montelius III by way of the pommel-tang on Northern swords of the parallel-sided Spandau type has been weakened by Von Brunn's suggestion (1958, 17) that the Northern pommel-tangs need not be derived from imported copies of the Erbenheim type. Deprived of the Northern Montelius III *terminus ante quem*, we cannot tell whether the initial diffusion of leaf-shaped swords to the North and West occurred in Montelius III-early Ha A or Montelius IV-late Ha A. An indirect approach is possible through the leaf-shaped swords with non-flanged hilts, which Hodges (1956, 37, with dist. map fig. 3) suggests are a reaction of native smiths to the earliest incoming leaf-shaped swords. At Southend-on-Sea, Essex, one of these and a fragmentary blade was associated with a looped palstave of our 'East Anglian' variety (unpublished; Index of Bronzes); at Penard, Glam. (Grimes, 1951, No. 535, fig. 71: 8–12), with an atypical socketed axe, a plain leaf-shaped spearhead, and bronze tanged arrowheads, none of which seem closely datable, though the socket-mouth moulding of the Penard axe suggests derivation from our Taunton type. The Penard arrowheads have parallels in some of the Central European sword-graves illustrated by Cowen (1955, *Taf.* 19, Wollmesheim; *Abb.* 8, Hennef-Geistingen); Kimmig (1940, 101) cites others, mainly in Hallstatt A, although they occur also in earlier and later contexts, and have no specific dating value. As far as these two hoards go, they suggest that the early leaf-shaped swords in Britain were coming into use about the time of our Taunton-Barton Bendish phase, about the turn of Montelius III–IV; the early Western swords exported to Northern Europe should be a bit later, in Montelius IV. The Höver sword, according to Cowen (1952, 136) would be late Montelius IV or early V on the basis of its association with a Northern sword of narrow-tang type. The Late Ewart swords, dated to Montelius V on the basis of the Kirke Søby hoard, reflect, according to Cowen, the influence of Hallstatt swords, and should not therefore be earlier in Central

European terms than Ha C; yet the Kirke Søby spearhead was claimed by Vogt as derived from Ha B[1]. Although Cowen's typological argument appears irrefutable, the chronological implication – the partial contemporaneity of Ha B and Ha C – is not accepted in Central Europe (Von Brunn, 1958, 18). The same chronological problem arises in connection with the carps-tongue swords, which are clearly dated to Montelius V in the North and Hallstatt B in Central Europe.

The distribution of the Late Ewart swords on the Continent suggests the use of the same route across the Lower Rhine valley and Westphalia to Central Germany that was used for Irish axes and halberds in the Early Bronze Age; although there is no concentration in Saxo-Thuringia at the far end. The distribution of the carps-tongue swords, though different in detail, harmonises with that of the Late Ewart swords. Beyond Central Germany we get a thin scatter to East Germany, Poland and Denmark; Western socketed axes reach the same regions, as did isolated examples of other products. Further discussion of the meaning of this trade with the East may be reserved for Part II (see pp. 226 ff.).

B. TANGED SWORDS

The well-known hoard from Dulduff, Kilkerran, Ayrshire (Anderson, 1886, 153; Leeds, 1930, 5 ff., fig. 2), which contains fragments of a cauldron, and socketed axes, also has two fragments of a sword which has never been illustrated or described. They represent the upper portion of a tanged sword (fig. 34). Of the tang, a length of only 1 cm survives; it is narrow and has a rectangular cross-section. The blade is of lozenge-shaped cross-section, the faces being quite flat. The sides of the blade are gently curved, tapering from rounded shoulders. Both fragments together measure 24 cm; the width at the shoulder is 4.4 cm.

Exactly similar swords, with shoulders rounded like the Dulduff specimen or more angular, with, according to Broholm, a shoulder width up to 5 cm, are very common in Scandinavia and adjacent parts of North Germany. Broholm (DB IV, 28 ff.) claims 90 specimens for Denmark, while Sprockhoff (1952a, *Karte* 3) maps 75 or more for North Germany, which are strongly concentrated in a roughly triangular area with its corners in Schleswig-Holstein, near Danzig, and in the vicinity of Magdeburg along the Elbe. The Scandinavian specimens are most densely concentrated in the Danish Islands and Scania, with a relatively thin distribution in Jutland and in South Sweden apart from Scania. Some have decorated blades; many have fitted metal hilts. They are most common in Montelius IV, but

[1] The Kirke Søby and related spearheads are discussed by G. Jacob Friesen (*Die Kunde*, N.F. VIII, 1957, 214 ff.)

go on into V. The earlier form has a narrow, rectangular-sectioned tang; the Kilkerran sword belongs to this type. The later form has a broader tang, tending to be pointed-oval in section. The earlier type is confined to Montelius IV in Denmark, but Sprockhoff implies that in North Germany it may occur in Montelius V too. The Kilkerran sword may therefore have been made in Montelius IV or V; in any case, it was old and battered when deposited at Kilkerran.

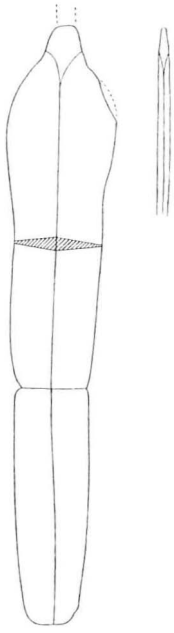

Fig. 34. Fragment of tanged sword, Dulduff, Ayrshire, Scotland; from the hoard. 1 : 3. National Museum, Edinburgh.

The hoard is dated by its cauldron-staples, of Leed's Class A2; Hawkes and Smith (1957, 183 ff.) assign Class A cauldrons to the seventh century. The socketed axes are of the faceted variety. From Anderson's account (*op. cit.*) it appears that these objects presented to the National Museum at Edinburgh, formed only part of the hoard.

Another tanged sword, unpublished, was called to the writer's notice by Mr. H. W. M. Hodges. This, a complete specimen, was found in the Lower Bann half a mile above the Cutts, Colerain, Co. Derry. Its blade is lozenge-shaped in section; the sides narrow sharply just below the shoulder, and then run nearly straight and parallel to the tip. The shoulders are strongly convex, with a notch or broken-out rivet-hole on each shoulder. A dome-shaped button fits over the end of the tang, and is attached to it by a thin pin which projects from the tang tip and through a central hole in the button; a feature which occurs on more then one variety of sword (*e.g.* the Mörigen sword, *Minnen*, 1209), and is not particularly common

on tanged swords. The rivet-arrangement resembles that of the large dagger from the Montelius III cist grave in the 'Bussanhögen', Halland (*Minnen* 1006).

Another unpublished tanged sword (B.M. 63.1–22,114) comes from the Thames at Kingston. Its shoulder is straight and inclined at an angle of 45 degrees, as on many Northern tanged swords (cf. Sachsenwald, Kr. Lauenburg, Kersten, 1951, *Abb.* 53: 2). The blade is lozenge-shaped in cross-section, but the edges are bevelled, and there is a high narrow midrib down the centre which broadens out at the shoulders, a feature not typical of Northern tanged swords. Tentatively we classify it as of Northern origin or inspiration.

C. OTHER NORTHERN SWORDS

Here we may merely refer to Cowen's discussion of certain Northern swords at one time or another alleged to have been found in the British Isles (Black Gate Museum, Newcastle; British Museum ex Brent Collection; Yorkshire Museum, York, ex Kendall Collection; Dublin Museum), which all lack convincing evidence of British provenance (Cowen, 1933, 199 ff.; 1952, 138–9). His statement that 'no sword of northern origin, nor even one showing northern influence, has ever certainly been found in Britain' (1952, 138) requires, however, modification in view of the tanged swords here cited.

CHAPTER VIII

CHISELS AND GOUGES

(Fig. 35)

A. LUGGED CHISELS

The lugged chisel (trunnion celt, or as Maryon prefers, stake) in the hoard from Voorhout, S. Holland (fig. 11d) in company with palstaves of our 'Welsh' type and other objects which connect it with the Ilsmoor horizon in North Germany, raises afresh the question of the dating of this metal-worker's tool in the British Isles.

The Voorhout chisel, with nearly parallel sides and distinct projecting lugs, agrees in form with many British and Irish examples of the type[1], and appears otherwise to have no close parallels in Europe north of the Alps[2]. On typology, location and associations the Voorhout chisel may be claimed as an export from the British Isles.

A lugged chisel with its cutting edge at right angles to the lugs occurred in the hoard from Westbury-on-Trym, Glos. (Megaw and Hardy, 1938, R. 37, p. 238, fig. 11) with three decorated castflanged axes. Although no precise parallels are known for its transverse cutting edge, it appears that the tool was known in principle in Britain before the end of the Early Bronze Age; so there need be no surprise as to the early Middle Bronze Age dating of the Voorhout specimen. The type may well have reached the British Isles from the East Mediterranean together with other well-known influences from that quarter in the Wessex period; an example

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[1] Some 15 examples are known in Ireland and 10 in Britain (see list below). This does not include the type of chisel with very narrow tang separated from the blade by a moulding or lugs such as B.M. LPA fig. 11: 1, a type frequently found in LB 2 hoards. A stray example of the latter type was found at Beckdorf, Kr. Stade (Sprockhoff, 1941, *Taf.* 28: 11).

[2] A different form, in which there is no actual lug, but merely a sharp nick in the sides formed by two curves meeting at an angle, is the more common type in the East Mediterranean. (Maxwell-Hyslop, 1953); related lugged chisels appear in the Unětice bronze industry in Bohemia and Saxo-Thuringia, e.g. Leubingen (Hofer, 1906, *Taf.* 2: 25), Smedrov (Richly, 1894, *Taf.* XXXIII), Southwest Germany (Godensberg, Kr. Fritzlar, Holste, 1939, 44, *Taf.* 17: 7) and the North (e.g. Linden, Kr. Norderditmarschen, Kersten, 1936, *Taf.* V: 1). Some of these are flanged. Other parallels are cited by Holste, *Ibid.;* for the North see Kersten, 1936, 71 (chisels of his Form I) and Hachmann, 1957.

from Asine in Greece, from a Late Helladic context (Frodin and Persson, 1938, 311, fig. 214: 2; Maxwell-Hyslop, 1953, 69 ff.) is the best Eastern parallel to the Voorhout form. At Balneil, New Luce, Wigtownshire, a small lugged chisel appears with a bone crutch-headed pin and a faience quoit-pendant, both types with Wessex connections, with a cremation in a tripartite cinerary urn.

Later Middle Bronze Age and Late Bronze Age associations of lugged chisels in the British Isles include from Broxton, Cheshire, (with two looped palstaves and a basal-looped spearhead); Meole Brace, Shropshire (with two looped palstaves); Bishopsland, Co. Kildare (connected with our Taunton-Barton Bendish phase, see

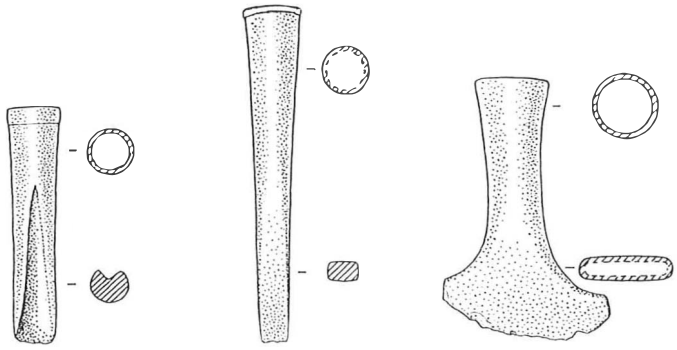

Fig. 35. Gouge and two socketed chisels, Deurne, North Brabant. Probably a hoard. 1 : 2. RMO Leiden.

below, p. 223: Yattendon, Berks. (*LBA* founders' hoard); Lusmagh, Co. Offaly (hoard of metal-workers' tools, including socketed gouge and other late types). The find from Farley Heath, Surrey, with a lugged chisel rather like the Voorhout specimen, palstaves, a spearhead and socketed axe, is described (*BM*, *LPA*, 45) as 'not certainly a hoard'.

It appears therefore that the Voorhout-type lugged chisel was in use in Britain from the beginning of the Middle Bronze Age until the end of the Bronze Age.

LIST OF VOORHOUT-TYPE LUGGED CHISELS IN THE BRITISH ISLES

England

1. Cheshire. *Broxton*. Hoard. *ABI* 169, fig. 197.
2. Berks. *Yattendon* nr. Newbury. Hoard. *Arch*. LXI, 138, fig. 97: Evans, *PSA* (2), VII, 480 ff.
3. Kent. *Harbledown*, nr. Canterbury. Rochester Mus.
4. Surrey. *Farley Heath*, Albury. Possible hoard. *VCH* Surrey, 1, 240; *B.M.*, *LPA*, 45.
5. Glos. *Westbury-on-Trym*. Transverse cutting edge. Hoard. *PSA* XVIII, 239; Megaw and Hardy, 1938, R. 37, p. 238, fig. II.
6. Cambs. *Cambridge*. Fox, *ACR*, 56, Pl. VII.
7. Shropshire. *Meole Brace*. Edgebold Brickyard. Hoard. *Ant. J.* V, 409, ff., figs. 1–3.

Wales

8. Montgomerys. *Talerddig. Ant. J.* V, 51.
9. Denbighs. Probably Conway Valley, nr. Llandudno. *Ibid.*

Scotland

10. Wigtowns. *Balneil.* Urn grave. *PSAS* L, 303.

Ireland

11. Co. Kildare. *Bishopsland.* Hoard *PPS* XII, 1946, Pl. XIII.
12. Co. Offaly. *Lusmagh.* Hoard. *B.M. LPA*, fig.12: 6.

(For stray finds in Ireland, see Hemp, *Ant. J.* V, 51 ff.; Hodges, 1956, 41, 51, dist. map. fig. 2).

B. SOCKETED GOUGES

Socketed gouges are very common in the British Isles (Mac White, 1944b) and rare in Northern Europe. Here we merely list the North European examples known to the writer. As Sprockhoff remarks (1953, 102) the question of their origin, whether in the West or in the West Central European Urnfield Culture, remains to be clarified.

Netherlands

1. *Stiphout*, North Brabant; treble moulding. Hoard, with Southeastern socketed axe with ribbed wings and other lost socketed axes. Felix 387, *Abb.* 242.
2. *Deurne*, North Brabant. Hoard? Single moulding. Fig. 35. Felix 68, *Abb.* 241. With two identically patinated socketed chisels. RMOL, Gt. D. 8–10.
3. *Rossum*, Gelderland. Dredged from the Waal. Museum Arnhem, GAS 1958-7-8. Single moulding.

North Germany

4. *Seddin*, Kr. Westprignitz. Single moulding. Sprockhoff, 1941, *Taf.* 52: 6.
5. *Münster*, Westphalia. Double moulding. *Ibid.*, *Taf.* 52: 7; Hoffman, *Westfalen* XXI, 1936, 368, *Taf.* 26. Stray find in urn cemetery.
6. *Zubzow*, Rügen. Single moulding. Ibid., *Taf.* 52: 8.

Denmark

7. *Hjerup*, Kjerte s., Baag H., Odense Amt (Fyn). Single moulding. DO IV 421a.

CHAPTER IX

HAMMERED BRONZEWORK: SHIELDS AND CAULDRONS

A. SHIELDS

In the first chapter of his *Handelsgeschichte* (1930, 1 ff.) Sprockhoff demonstrated that the Bronze Age shields of the British Isles and of Northern Europe were two branches of a single family, to which he gave the collective name 'the Northwest European round-shields'. Its origin he then placed in the British Isles (cf. also Sprockhoff, 1928 and 1941, 100–3). More recently, following upon the discussion of the origins and chronology of Herzsprung shields launched by Hencken (1950, 295 ff.) and MacWhite (1951, 98 ff.), Sprockhoff (1954, 73 ff.) has outlined a new view in which Central Europe figures as the original home of the shield-family; a radial diffusion subsequently bringing Central European shield-types to the British Isles and Northern Europe, as well as to the Iberian peninsula and the Aegean.

To examine the detailed consequences of this conception for the British Isles and Northern Europe, we must turn back to Sprockhoff's 1930 study, which remains the standard account of the shield-material north of the Alps[1]. There Sprockhoff divided the half-a-hundred 'Northwest European' shields into seven types. Typologically the earliest is his Nipperwiese type occurring mainly in South Germany (cf. Reinecke, 1956, 23 ff., on the Bamberg shields), but with two outliers in North Germany, in the Lower Oder (Nipperwiese) and Lower Elbe (Schiphorst) regions respectively. Nipperwiese shields were apparently known to the Bohuslän rock-engravers (most recently, with many illustrations, Göteborg Museum, 1956), and to the decorator of the famous Wismar horn (Althin, 1945, *Abb*

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[1] Shields listed and described with references by Sprockhoff (1930, 8 ff.) will here be cited without references, or referred to by 'Spr.' followed by his catalogue number; except for those about which there has been important more recent literature, or new and better illustration. While this work was in press appeared the fine article on British shields by J. M. Coles (P.P.S. XXVIII, 1962, 156 ff.). Coles argues forcefully that none of the shields here discussed ought to be dated earlier than the eighth century (HaB3-LB2-MV); rejecting Pilsen as a doubtful association and discounting the Northern attribution of shields to Mont. IV. Only new evidence could show whether he has not somewhat too harshly dealt with the indications for earlier beginnings.

78; Sprockhoff, 1956, *Abb.* 60a, 60b: 6). The incised figures on the Wismar horn, including the shield-carrying warriors, have been denounced by Althin (*Ibid.*, 144 ff.) as a modern forgery, but Oldeberg, Hundt (1952, 409) and Sprockhoff (1956, 249 ff.) (1947, 18 ff.) uphold their genuineness. Oldeberg dates the ornament to the transition Montelius II-III; which would equal Reinecke D on the correlations now in favour, and support the early dating of the Nipperwiese shields; Sprockhoff believes the Wismar piece is *jungbronzezeitlich* in age, as does Ørsnes (1958).

The shield from Pilsen in Bohemia (Spr. 11) found in a hoard now dated to Reinecke D or early Hallstatt A (Bohm, 1936, 13 ff.; Sprockhoff, 1954, 73 ff., *Taf.* 9), was classified by Sprockhoff both as a Nipperwiese shield and a Herzsprung shield; it now takes its place as a representative of the earliest phase of the entire Herzsprung development. More developed Herzsprung bronze shields have been found in North Germany, Denmark and Sweden. Finds since 1930 include the Svendstrup shield (DO IV 107), which is quite like those from Herzsprung; a larger and more elaborate example from Taarup Mose on Falster (Becker, 1947, 91 ff., fig. 1); and a fragment of a shield like the Taarup Mose one in a Montelius V hoard at Skydebjerg on Fyn (Albrechtsen, *Fynske Minder* I, 73 ff., figs, 1, 5). The last is especially valuable because it fixes the date of the most developed of the Central or North European Herzsprung shields; the entire development in this area is thus bracketed between Pilsen, D or early HaA, and Skydebjerg, Montelius V[1]. Whether all these shields are of Central European manufacture, or whether production was also carried on (perhaps by immigrant Central European craftsmen) in the area of North Germany where the products of Von Merhart's *Leistenbuckel* school[2] are most densely concentrated, is not for us to decide.

While no bronze Herzsprung shields are found in the British Isles, the Clonbrin leather shield and the wooden shield-moulds from Ireland are all of the Herzsprung

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[1] Hencken (1950) compares one of the Herzsprung shields from 'Denmark' (no exact provenance) with the earliest of the Aegean Herzsprung shields, Mount Ida (Crete) Shield 67, (Ibid., Fig.8) which he dates to the first half of the eighth century, or possibly the last half of the ninth. This Mount Ida shield is a miniature representation, on a full-size Orientalizing shield.

[2] Von Merhart (1952, 38 ff.) distinguishes three styles of bosswork: a *Gleichbuckel* style, using bosses all the same size, mainly Earlier Urnfield; a *Punktbuckel* style, in which the bosses are of two sizes, as on the Jensovice-Kirkendrup cups (to von Merhart these were mainly 'Later Urnfield', but to recent writers the Jensovice-Kirkendrup horizon is late Ha A-M IV); and a *Leistenbuckel* style, using bosses and ribs, mainly Montelius V, going on into VI. One of the 'Denmark' shields is in *Gleichbuckel;* the Sorup shield to be mentioned later is in *Punktbuckel;* the two shields from Herzsprung are *Leistenbuckel* work. The Taarup Mose shield and the Skydebjerg fragment have bosses of *three* different sizes. The style of the Yetholm shields – a strict alternation of rings of equal-sized bosses with ribs – is rather distinct from any of these Continental styles.

type[1]. In Sprockhoff's older theory these were the prototypes of the Central or North European Herzsprung shields; in the newer view they are derivatives. Hencken (1950) has made a distinction between Herzsprung shields on which the characteristic indentations in the ribbing are of U shape and those with V-shaped indentations; the U-variety being Central and North European, the V-variety Aegean-Iberian. Ireland has both varieties. In Hencken's view this meant a dual origin for the Irish shields, the V variety coming round the Atlantic route from the south, the U variety coming from Scandinavia. The V-shield from Clonbrin has close resemblances to the shields represented on the tomb-slabs in Iberia (MacWhite, 1954), but also to the Central or North European shields. Sprockhoff placed the Clonbrin shield in the same group with Pilsen; but it may be suggested that its rib-arrangement – an inner ring with an interruption, two outer rings with indentations – is really strikingly like that which forms the central motif of the shields from Herzsprung, Svendstrup and Nackhälle (which form a homogeneous little group) and of the Taarup shield.

The Nackhälle shield is traditionally of Montelius IV, but its 'whole birds' have been compared with those on the Prenzlawitz amphora which is Montelius V, and those on the St. Kanzian helmet-fragment which is late Hallstatt B; and the *Leistenbuckel* ornamentation of the Svendstrup and Herzsprung shields has its parallels mainly in North German Montelius V; the Taarup shield is M V in any case. The use of thin doubled ribs in the *Leistenbuckel* group and on its shields also finds an echo in Ireland; the wooden shield-mould from Annadale, though without bosses, has similar ribbing.

Four of Sprockhoff's shield-types – the London, Coveney, Harlech and Yetholm types – are mainly or exclusively British in distribution, although two of them (London and Harlech) are apparently represented on Bohuslän rock-engravings. The Coveney, Harlech and Yetholm types appear to be very similar in details of manufacture, but differ in ornamentation; the Harlech type being ornamented only with concentric ribs, the rare Coveney type with ribs arranged as meanders, and the Yetholm type with concentric ribs alternating with rings of equal-sized bosses. Typologically, Sprockhoff saw the Harlech shields as a development of the Nipperwiese type, and in this he was undoubtedly right, although there is an unbridged gap between them. Whether the missing links were Continental or British only future finds can show.

[1] Clonbrin, Co. Longford (Sprockhoff, 1930, Taf. 3a. and often elsewhere; Annandale, Co. Leitrim (*Ibid.*, Taf. 3b), Cloonlara, Co. Mayo (Mahr, 1937, 383, Pl. XXV; Hencken, 1950, fig. 22); Churchfield, Co. Mayo (O'Riordain, 1946, 161, Pl. 14: 2); Kilmahamogue, Co. Antrim (Jope, 1950, 62 ff., Pl. 8: 16). For the pollen-dating of the Cloonlara shield-mould (of Hencken's U-variety) see most recently Mitchell, 1956, 214 ff., 238–40. Its horizon is mid-way within Mitchell's very long Zone VIIIB, and apparently earlier than that of the Canbo bronze sword; but the shield would have been dug in from a higher level.

Most important in our present context is the fact that two shields which Sprockhoff assigned to the Yetholm type have been found in Denmark, both on the island of Falster. One of these, from Lommelev Mose (Pl. XV*b*) (Spr. 2; also Broholm DB III, M. 25; DO IV 106) is closer to the British Yetholm shields than it is to those of any other type; yet the arrangement of the rib-and-boss ornament of the Lommelev shield differs from the British standard. It has two rings of bosses between each pair of ribs, and the boss-rings are not continuous, but interrupted by radial free lanes, making a kind of star pattern. These features suggest Continental rather than British manufacture. The other Danish Yetholm shield, from Sørup Mose, Elskilstrup (Pl. XV*b*: right) (Spr. 4; also Broholm, DB III, 181, 184, M. 24) differs only in very minor particulars from the shield found at Lough Gur, Co. Limerick in Ireland (Pl. XVI*b*) (Spr. 41; also Mahr, 1939, Pl. 9: 1)[1]. The Sørup shield has seven ribs, the Lough Gur shield six; both have six rings of bosses. On the hypothesis that a small number of ribs and boss-rings is early in the Yetholm sequence, (cf. Hodges, 1956, 44) the Sørup and Lough Gur shields stand at the beginning of the Yetholm type. All other shield-finds of the Yetholm type are, of course, in Britain, where it is the most common shield-type.

The Lommelev shield was found in the bog only a short distance from a hoard of bronzes (lures, tanged swords) assigned to Montelius IV, but the shield-find was a year later, and its association with the hoard is not claimed. The Sørup shield was, however, clearly associated with another shield, which is the only known example of Sprockhoff's Sørup type. Its cross-pattern is in *Punktbuckel;* and since the cups and other vessels ornamented in this technique are normally Montelius IV the dating of the Sørup hoard to this period is to that extent supported.

Since the validity of the Langwood Fen, Cambs. association of a Yetholm shield with a basal-looped spearhead has been challenged (Hawkes and Smith, 1957, 149n), the Sørup find appears as the only really useful dating-clue for the Yetholm shields. Sheet-metal work in the Yetholm style appears to be rare on the Continent, but a fragment (not from a shield; its rolled edge is straight) in the well-known hoard from Pfeffingen in Württemberg (Behrens, 1916, 32 ff., *Abb.* 10) has the same alternation of ribs and boss-rows; since the hoard is generally assigned to late Hallstatt A, and contains imported Montelius IV bronzes, it tends to confirm the dating of the Sørup find. As far as it goes, this evidence suggests that the introduction of bronze shields to Britain may have occurred in LB 1, and therefore before the time of the cauldrons and buckets in LB 2, as set forth by Hawkes and Smith (1957). It seems likely that the Yetholm shields from Lommelev and Sørup were made by members of the same group of travelling shield-makers who

[1] Raftery, 1951, Fig. 176: 2, is erronously captioned as the Lough Gur shield.

presumably introduced the type to Britain, and perhaps the Harlech and Coveney types too. They plied their wares mainly in Britain; only two bronze shields have been found in Ireland (Athenry, Co. Galway; Lough Gur), compared to some 35 in Britain – the majority of these in the eastern half of the island. The distribution pattern thus differs markedly from that of the buckets, which are about equally divided between Britain and Ireland, and even more from that of the cauldrons, which are predominantly Irish (distribution maps Hawkes and Smith, 1957, figs. 4 and 10). Perhaps bronze shields were never made in Ireland at all. The Herzsprung shields seem to have come to Ireland at more or less the same time as the Kurd buckets; and the fact that these shields were imitated in Ireland only in the wood-and-leather technique, and not in bronze, may also point to the absence of bronze-shield makers in Ireland. In any case, the Sørup find provides one of the most important of our contact-finds (or at the very least a valuable parallelism) between the British Isles and Northern Europe in the Late Bronze Age.

B. THE ABILDHOLT CAULDRON

Unique in Northern Europe is the Irish cauldron, fragments of which were recovered from a bog at Abildholt in Ringkøbing Amt, Northwest Jutland, in 1942. The find has been fully described by Becker (1949, 265 ff., fig. 1–4).

The cauldron, discovered by peat-diggers, was reported to have been virtually complete, but only fragments were preserved. The ovoid bottom of the vessel could be reconstructed; the remainder is missing except for one of the staples with its ring-handle, and the second handle-ring. None of the shoulder was recovered; but part of the rim is enclosed within the staple (Pl. XVI).

These are, however, enough to show that the cauldron was of Leed's Class A (Leeds, 1930, 1 ff.). The staple, with three ribs and lateral projections corresponding to those on some Irish Class A cauldrons, is cast directly onto the rim, without cast cross-bars or plate separating the handle from the rim; it therefore belongs to Leed's A1 group, the typologically simplest form[1]. The handlerings are, however, hexagonal in section and deeply fluted, a type hitherto associated with cauldrons of Class B. The Dulduff cauldron, of sub-class A2 (Leeds, *Ibid.*, Pl. IV: 2, 3) has rings which are hexagonal in section but not fluted. The association of a Scandi-

[1] As pointed out by Becker. Hawkes and Smith, (1957, 182–3) assign it to A3; but what they apparently take for the plate spanning the rim is in fact, according to Becker's account, a repair-plate, inserted and riveted in place at this point to mend the damage caused in casting on the staple; the hot metal having burnt through the thin rim. It was exactly this type of damage that necessitated the invention of the A2 and A3 forms.

navian tanged sword with the Dulduff cauldron (Chap. VII, B) represents a curious *quid quo pro.*

Abildholt (Borbjerg s.), lies about 17 km east of Holstebro, near a small tributary of the river Storaa, not far south of the Limfjord. The cauldron was found without datable associations. Hawkes and Smith (1957) date Class A cauldrons to the seventh century. To connect the Abildholt cauldron with the amber trade seems almost too obvious to be worth mentioning; amber finds become common in Ireland in this period (MacWhite, 1944a, 122 ff.).

CHAPTER X

FERRULES

(fig. 36; Map X)

A British origin was suggested by Sprockhoff (1941, 96, *Abb.* 78; 1955, fig. 4)[1] for the long, blunt-ended, slightly conical ferrule found in a Montelius V hoard at Kronshagen near Kiel, Kr. Rendsburg. In form it resembles the British type well known from the Nettleham hoard (which Sprockhoff illustrates, 1941, *Abb.* 79, after Hawkes) and others. Ferrules of Montelius V in Sweden (Mörbylanga sn. Öland, and Gronhult, Vanga sn., Scania; (Montelius, *Minnen* 1228–9) and Denmark (Pyrup, Svendborg A.; DO IV 132 with rounded head) are also approximately of the British form, but have incised ornamentation resembling that current in West Alpine Hallstatt B. Sprockhoff distinguishes the British type from another conical type of ferrule, ultimately of East Alpine origin, which, brought northward to Central Germany, became one of the characteristic forms of his *Kulturkreis an der Mittelelbe* (Sprockhoff, 1937, 30 ff., *Abb.* 9, *Abb.* 21, *Taf.* 6: 3). They occur characteristically in the group of *Steinpackungsgräber* in the Saale Mouth district, which have been the subject of a monograph by Von Brunn (1954*a*). These ferrules, usually quite short but occasionally attaining a length of about 21 cm, are chiefly distinguished from the British type by having a pointed end instead of the blunt end found on the British specimens; the latter are normally long. The chronological horizon in which the Central German ferrules appear is equated by Von Brunn with late Montelius III and Montelius IV, corresponding with early and late Hallstatt A respectively. A Welsh hoard from Ffynhonnau, Breckn. (Savory, 1958, 27–8, fig. 3) contains two ferrules resembling the longer specimens of the Central German form, as Köthen Grab 1 (Von Brunn, *Ibid.*, 7, Taf. 2: 2, 3), and Kolno (*Ibid.*, 10, *Taf.* 9: 9, 12), which are assigned by Von Brunn to Montelius IV. The Ffynhonnau hoard also contains an imported Hallstatt A single-edged Urnfield knife, two native looped palstaves, and the fragment of a leaf-shaped sword (we are grateful to Dr. Savory for a photograph of this find). This suggests the possibility that the British ferrules are to be derived from Central Germany; with the Ffynhonnau hoard constituting an excellent contact-find. The palstaves

[1] See also Sprockhoff, 1955, 88 *Abb.* 4.

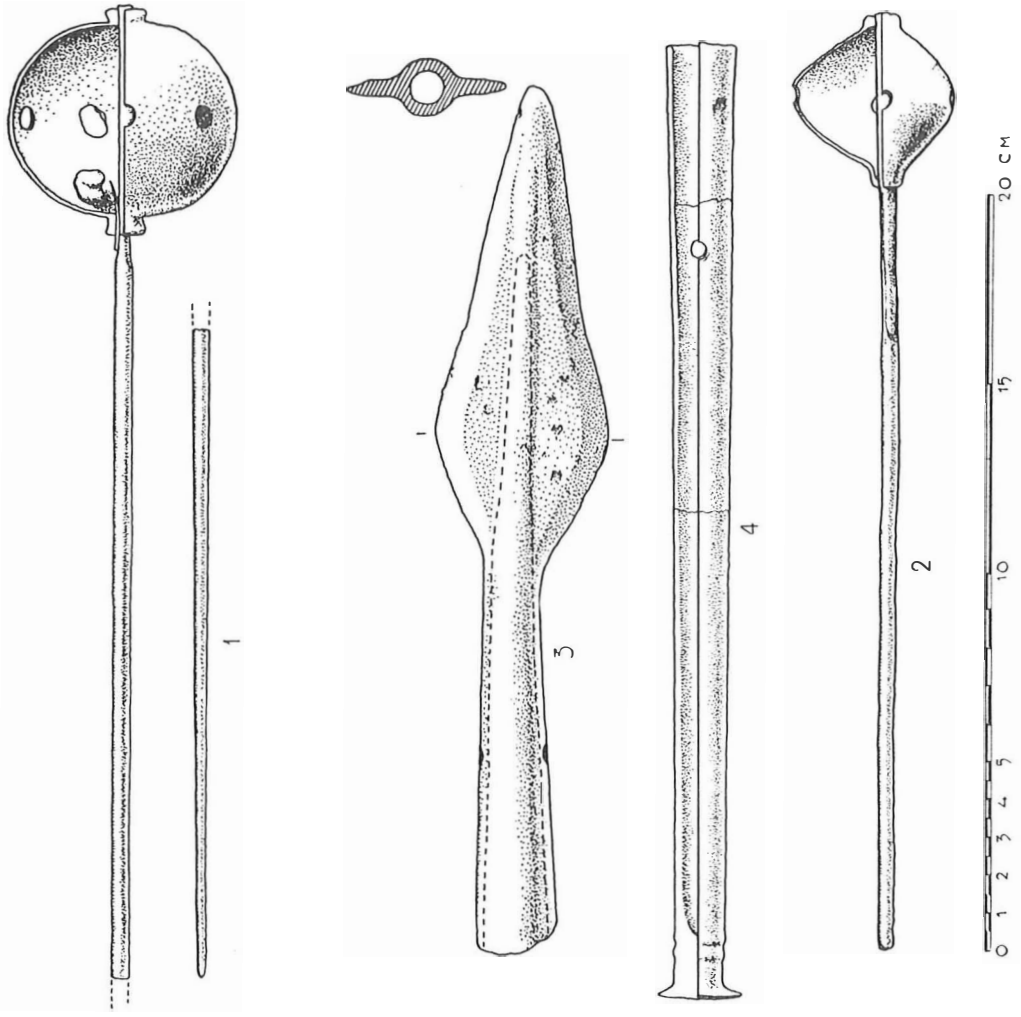

Fig. 36. Hoard from Heerde, Gelderland. 1 : 2. After Elzinga.

(blade-width intermediate between our Classes I and II; narrow midrib; slightly projecting stop-ridge) are of a variety well represented at least in the Cambridge region (Fox, 1923, 55–6, Pl. VII: 7); it is the type represented in the Downham Fen hoard (*Ibid.*, Pl. VIII: 2), with rapier and socketed sickle, and the Grunty Fen hoard (Von Hügel, 1906/8), though here with trident ornament. The British ferrules are associated mainly with the Wilburton industry; as in the Wilburton hoard itself, and at Nettleham, Lincs., and Guilsfield, Mont. (Grimes, 1951, fig. 70–1).

A ferrule probably of the British type (the base is missing, so that its original form cannot be determined; the present length is 18.5 cm) was found in the Nether-

lands, apparently at Bruggelen, Gem. Apeldoorn, Gelderland. This object was reported to the Arnhem Museum, and described (Elzinga, 1957–8, 11 ff.) in company with a hoard of four objects (including another ferrule) found at the estate of 'De Dellen' in Gem. Heerde, some 25 km farther north); but according to Elzinga's investigation the first-mentioned ferrule was a separate find, having nothing to do with the hoard from Heerde. The Bruggelen specimen must, therefore, be treated as a stray find. The ferrule from Heerde has a shaft of the same form, but close to its base there are two encircling ribs, and the base itself is in the form of a disc. The hoard also contains two large pins with hollow, perforated globe heads, of West Alpine inspiration, and a pegged spearhead with flame-shaped blade and long socket (fig. 36).

CHAPTER XI

TWISTED BRONZEWORK: NECKRINGS AND BRACELETS

(List, p. 141; Pl. XVII; fig. 37; Map XI)

The derivation of British twisted bar neckrings and bracelets from Northern Europe was suggested by Evans (*ABI*, 379), and he has been followed in this by Hawkes (1942, 46–7) and Mrs. Piggott (1949, 110) in preference to Fox's suggestion of a Central European origin for them.

Comparison of the British and North European twisted ornaments indicates that a Danish or North German origin is extremely probable for the British neckrings, and presumably also for the twisted bracelets which are usually found in the same contexts in Britain, although the workmanship of the bracelets does not correspond so well with those of Northern Europe. The Irish twisting of gold is on the whole separate and distinct, but a few points of contact may be found with the North European tradition of twisted goldwork, which allow a tentative suggestion that the Irish twisted goldwork may also be of Northern inspiration.

The earliest twisted metal objects in Britain – the pins with twisted stems found occasionally in Wessex Culture graves – are of course imports from the Central European Unětice bronze industry, and were not manufactured in Britain. The only known possible example of British Early Bronze Age twisted metal-work is the curious 'standard' from Wilsford in Wiltshire (Ashbee and Ap Simon, 1954, 326 ff.) with its twisted horns, but since it is a unique object (apart from the distant parallels ranging from 3rd Millenium Anatolia to Sutton Hoo cited, *op cit.*) its British manufacture is by no means to be taken for granted.

A number of gold twisted earrings from Ireland (Armstrong, 1933, Pl. XVIII; 418–22) have early East Mediterranean connections and have been used, together with the well-known twisted gold spiral ornament from Troy, to argue for a direct derivation of Irish twisted gold work *via* the Atlantic route, independently of Continental Europe[1].

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[1] Cf. Childe, 1937, 21; Maryon, 1936, 3 ff.; Hawkes, 1961. Note also the loosely twisted earring in the Lüneburg Earlier Bronge Age (Montelius II) grave at Bleckmar, Kr. Celle: 'Wittenberg', Grave 4, Inhumation V (Piesker, 1958, *Taf.* 16: 18). This appears to be of the 'bar-twisted' type of Hawkes.

In Central Europe twisted ornaments – not only pins, but occasionally neckrings and bracelets – appear in the Early Bronze Age. A loosely twisted ingot torque has been found in Austria. Twisted gold bracelets have been found in Reinecke A2 contexts in South Germany at Regensburg (*Germania*, 1938, 7 ff., Abb. 1) and Trassem (Behrens, 1916, 19, Abb. 6: good photograph *Real*, VIII, Taf. 83). These have sometimes claimed as Irish exports; there are however no close Irish parallels to their form (they are thick in the centre and taper markedly towards the terminals). In the Tumulus Bronze Age twisted bronze bracelets of a standardized penannular form with plain rounded terminals are common, but the twisted neckring is apparently rare in Central Europe until the Urnfield period, when a kind of twisted neckring with terminals rolled in the fashion of the Early Bronze Age ingot torques becomes fashionable. These Central European products do not make as satisfactory prototypes for the British twisted ornaments as the Northern types to be discussed below.

A. TWISTED BAR NECKRINGS

The Northern twisted bar neckrings of the *Aeldre Bronzealder* have been listed and classified by Kersten (1936, 36 ff., 120). His Form I is characterised by terminals which are rolled into spirals. These neckrings are thin and very tightly and finely twisted; only four examples are known, all in Denmark, and are dated to his period IIb. One was worn by the famous lady from the Borum Eshøj treetrunk coffin.

His Form 2, with hooked terminals, is quite common. Kersten cites 33 finds, beginning in Period II but mainly in III; of which 16 are in Denmark, 14 in Schleswig-Holstein, and one each at Harburg and in the Bardengau. The form is also known in the Ilmenau Culture (Kersten, 1951, 60, Abb. 36: 7, 39: 1) and in Mecklenburg; in East Germany, examples appear in grave finds at Slate, Kr. Parchim (*Ausgrabungen und Funde* 1958, *Abb.* 33), at Weitgendorf in Brandenburg (Bohm, 1935, 68, Taf. 20: 14) and Glendelin, Kr. Demmin in Pomerania (Kersten, 1958, *Taf.* 30: 344A and 344C (6); but the North German finds have not been comprehensively listed. In the *Aeldre Bronzealder* Form 2 neckrings appear very often in women's graves. Although predominantly an *Aeldre Bronzealder* type, the Form 2 neckrings also appear occasionally in finds, widely distributed in Denmark and North Germany, of Periods IV and V (cf. Boudou, 1960, 54) usually in votive

[1] The conventional term 'torque' is applied to such a wide variety of objects, both twisted and untwisted, that we prefer to use the longer but more specific designations, corresponding to Kersten's *gedrehte Halsringe* and *Armringe*. Ribbon torques are unknown in Northern Europe and do not enter into the present discussion.

and founders' hoards. More advanced types of twisted neckrings, such as those with cast imitations of twisting, and neckrings with expanded decorated terminal plates, often occur in the same finds, although these types are absent from the finds of Periods II and III. Thick cast neckrings with hooked ends, often with incised decoration on the smooth terminals, also begin in Montelius IV in Denmark and North Germany. The comparative rarity of Form 2 neckrings in the Northern Late Bronze Age must, however, be emphasized; far from its being typical in Montelius IV, as several British authorities have assumed, the type is not even mentioned in Sprockhoff's comprehensive study (1937) of the North German hoards of that period, and is barely mentioned by Baudou (1960, 54).

By far the greater number of British twisted bar neckrings (List 1) are closely comparable in form and details of workmanship with Kersten's Form 2. Neckrings of this kind are twisted from a square-sectioned bar, with terminal portions left untwisted (sometimes the terminals are left square in section; at other times they are rounded off), and with the ends bent to form interlocking hooks at right angles to one another[1]. They vary in thickness from as little as 2 mm to as much as 20 mm, and in diameter from 14 to 20 cm. On the average, the Northern neckrings tend to have longer smooth terminal portions than the British, but there are many Northern specimens with short terminals, and a few British neckrings (e.g., Barton Bendish, Inventaria *GB.* 7 2 (2), No. 7) have long terminals.

Many of the British neckrings in this category have been described in the literature as 'cast', but the criteria by which this is judged are not often stated. Some of those described as cast appear to the present writer to be genuinely twisted[2], but judgment is best left to those with adequate technical qualifications. In any event, most of the British neckrings in List I compare closely in appearance with the Northern torques of Kersten's Form 2, and do not bear obvious signs of a cast imitation technique; the British and the Northern Form 2 neckrings were to all appearances made by the same method.

Unique in Britain is the neckring from Hollingbury Hill, which is without hooked ends, the smooth terminals being cut off abruptly. A hoard of four similar neckrings was found at Dave (Namur) in Belgium (Mariën, 1952, 269, fig. 253). A single example is in a Montelius IV hoard from Steenodde, Nebel, Amrum (Sprockhoff, 1937, 20; Kersten and La Baume, 1958, 148, *Taf.* 80: 18–22); another is illustrated

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[1] One hook is normally turned outward, but rare examples are known with an in-turned hook: Batheaston, Somerset; Barton Bendish, Norfolk; Plaitford, Hants.; Oldenburg (bog find, M V); possibly Beckdorf, Kr. Stade (grave, M III), illustrated as in-turned, but the neckring is broken and the original position in the grave is not quite certain (*NNU*, 1933, 39 ff.; information from the excavator).

[2] E.g. Hollingbury Hill, Sussex, and Barton Bendish, Norfolk. Cf. '*Bronzetechnik*', *Real.*, II, 172.

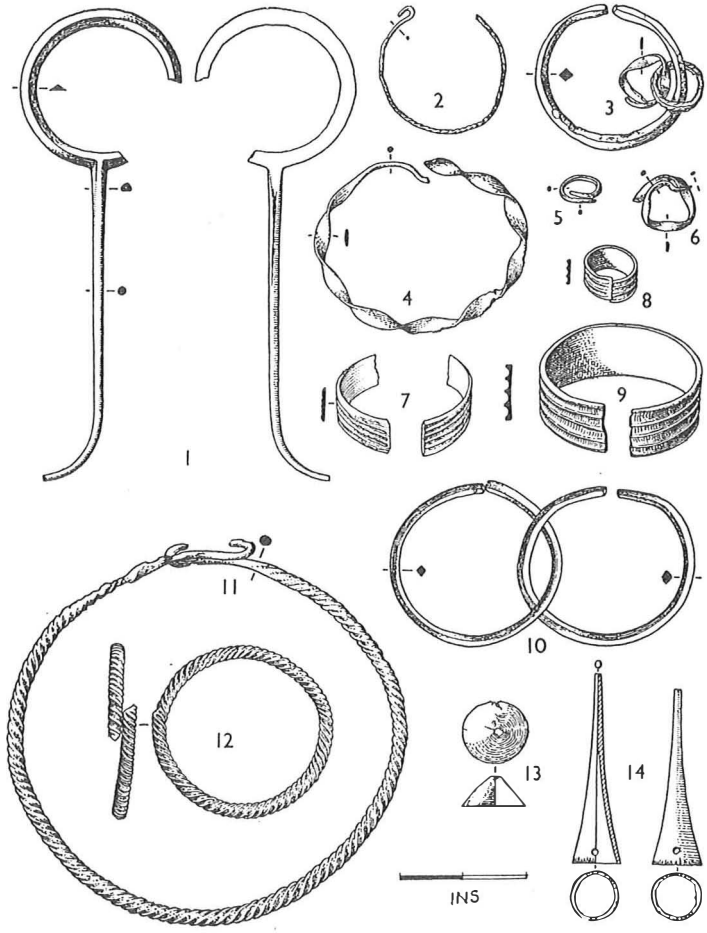

Fig. 37. Ornaments from the Somerset hoards. After M. A. Smith.

by Sprockhoff (*Ibid.*, *Taf.* 20: 13) from a Montelius IV hoard from Deetz, Kr. Zerbst. Sprockhoff groups these neckrings with his class of neckrings 'with smooth tapering terminals' (*Ibid.*, 1937, 44, 91, *Karte* 22, *Taf.* 20: 11, 14: 6). He shows that the type is especially concentrated in Saxo-Thuringia, spreading from there to Mecklenburg and the Lower Elbe-Ilmenau region, as well as in other directions. While the greater number of datable examples are in hoards of Montelius IV, at least two (one of them in Mecklenburg) are in good Period III graves; several others (including one from a grave at Arneburg, Kr. Stendal, which also included a Glentrool-type pin; see Chap. XII) are also assigned to Montelius III in his list.

A small number of British neckrings are characterised by greater thickness, an obviously cast technique, and thick blunt hooks. These we may call the West Buckland type (Nos. 10, 17, 18, 20 in list below). In a general way they are ana-

logous to the Northern thick cast torques which begin in Montelius IV, but the workmanship is not closely comparable; the short undecorated terminals of the British specimens being distinctive, and indicating manufacture in Britain. These are likely to be later than the other British torques; as is also suggested by the association of one with a double-looped palstave (West Buckland, Somerset, *ABI* fig. 87).

Since the most common British type of twisted bar neckring is indistinguishable from many Northern examples of Kersten's Form 2, and the type is rare elsewhere, it seems evident that the type was introduced into Britain from Denmark or North Germany. This type is current in the North from Period II to V, although its greatest incidence is in Period III; at which time the best parallels to the Hollingbury Hill neckring were beginning to appear in Central and North Germany, although *their* main incidence is in Montelius IV.

Some of the British neckrings comparable to Kersten's Form 2, and the Hollingbury neckring, may be actual imports; most are probably local imitations by smiths who had learned the technique from the Northerners. Their concentrated distribution in South England, and especially in Somerset, seems to imply that torque-manufacture was a feature of the Somerset industry of the phase represented by the Taunton Union Workhouse, Edington Burtle and similar hoards. It may be noted that the Form 2 neckrings are among the simplest of the Northern types and require the least skilled workmanship.

The *Sussex Loops*, a contemporary type, provide a further hint that torque manufacture was practiced in South England; for many of the Sussex Loops are made of square-sectioned bars of a length and thickness which suggests that they were originally fabricated with the intention of making them into twisted neckrings. It appears as if a Sussex workshop initiated a local fad or fashion by converting half-fabricated neckrings into a peculiar and clumsy sort of bracelet, probably crudely imitating the form of an imported bracelet of Barton Bendish type (see p. 143). Finally, the West Buckland type of neckring, comparatively rare, must represent the late products of the Somerset neckring-makers, a parallel evolution to the Northern thick cast types.

The limited distribution and consistent associations of the British neckrings suggest that they represent a comparatively shortlived fashion in South England. It is especially noteworthy that none of the neckrings appear in association with swords or standardized Late Bronze Age socketed axes[1]. In fact the only association with a socketed axe is with our Taunton type in the Union Workhouse hoard, while associations with palstaves are common. One neckring appears with a rapier at Glen-

[1] A related twisted bracelet appears, however, in the LB 2 founders' hoard from Winfrith Newburgh (Lulworth), Dorset (Drew, 1935, 449 ff., Pl. LXIX).

trool. Several of the finds appear to be ritual deposits with one or more neckrings and palstaves, sometimes in barrows, though none are known to be grave finds.

At Plaitford in Hampshire a twisted neckring was found with a looped swollen-necked pin; fragments of Deverel-Rimbury globular urns were found a few yards away. (Hawkes, 1942, 44 ff., Pl. VI, figs. 10–11). The neckring and bracelets from Ebbesbourne Wake were found in a lynchet and were therefore contemporary with or later than a Celtic Field system.

In South England the twisted neckrings are a characteristic feature of our Taunton-Barton Bendish industry, with which the Glentrool hoard in Galloway should be contemporary. The Annesborough hoard in Ireland included a Roman fibula along with a twisted neckring, a trident-ornamented looped palstave and plain bracelets. The deposit had been disturbed by tree-roots, and it is by no means impossible that the fibula was an accidental association; the other objects would all be consistent with the normal associations of the neckrings in Britain. The neckrings from Glentrool and Annesborough, and that from Villers-sur-Authie across the Channel, might be exports from Somerset or alternatively direct importations from Northern Europe.

LIST OF BRONZE TWISTED NECKRINGS IN THE BRITISH ISLES

(*cf.* Map XI)

Cambs

1. *Burwell Fen.* Stray. 16 cm × 5 mm. Ashmolean 1927/2395. *ABI* 378.

Dorset

2. *Haselbury Bryan.* Hoard. 19.5 cm × 10 mm. With bracelets with overlapping ends. *B.M.* 92/9–1/326. Proc. Dorset *FC* LVI (1934), 131–2 (photo).
3. *Holywell*, Evershot. Hoard. 2 neckrings (one 19.3 cm × 7 mm). With penannular bracelets with lozenge section. *B.M.*, 54/8–17/2. *PSA* 1, 234; *B.M.*, *L.P.A.* fig. 13: 2.
4. *Tarrant Monckton.* Hoard (neckrings only). 5 neckrings, 14 to 17 cm., 5 to 7 mm. *B.M.*, 92/9–1/321–5. *B.M.*, *B.A.G.* (1920), 55.

Hants

5. *Plaitford*, Bowers Farm. Hoard. 2 neckrings, 23 cm, 19 cm. With looped swollen-necked pin. Winchester Mus. *PPS* 1942, 44 ff., Pl. VI.

London

6. Thames at *Westminster. B.M. B.A.G.* 55.

Norfolk

7. *Barton Bendish*. Hoard. 2 neckrings, 18 cm × 9 mm, 20 cm × 8 mm. With palstaves, large quoit-headed pin, twisted bracelets. Inventaria, *GB*. 7.
8. *Methwold*. Catsholme Hall. Stray. Cambridge Mus. Index of Bronzes.

Somerset

9. *Cothelstone House*. Stray. *SAS* 1 (ii), 43.
10. *Chillington Down*, nr. Crewkerne. Stray. 19.5 cm × 10 mm. Taunton Cas. Museum. P Som A & *NHS*, L1, pt. 2, 148 (photo opp. p. 144); LV, 70–1.
11. *Edington Burtle*. Hoard. 13 cm × 4.5 mm. With ribbon torque, large quoit-headed pin, knobbed sickles, ribbed bracelet, finger ring, palstaves, etc. P Som A & *NHS*, V, 91, fig. 6; XLVIII, Pt 1, 84, pt v, 93. Taunton Cas. Museum.
12. *Batheaston*, Monkswood (St. Catherine's Valley). Hoard. 3 neckrings (15.5 × 4 mm, 16 cm × 5 mm, (incomplete) × 2 mm). With knobbed sickles, large quoit-headed pins, twisted and plain penannular bracelets, Glentrool knife, etc. *PSA* (2), XV, 358. Arch. LXXI, 138, Pl. XI. P Bath *NHAFC* VIII (1897), 147 ff. Pump Room, Bath.
13. *Pen Pits*, nr. Penselwood. 2 frag. neckrings (9 mm, 7.5 mm). *ABI* 377. P Som *ANHS* VII, pt 1, 27, fig. 1. Taunton Cas. Museum.
14. *Spaxton Parish*, Quantock Hills. Hoard. 2 neckrings (one 22.5 cm × 17 mm). Arch. XIV, 94, pl. XXIII; LXI, pl. XIV, fig. 92. Phelps, *Hist. Som.*, II, 173, Pl. XXI.
15. *Taunton*, Union Workhouse. Hoard. 16 cm × 7 mm (fig. 97-100-5). With large quoit-headed pins, palstaves, Taunton-type socketed axe, socketed hammers, razor Class 1, twisted bracelet, knobbed sickle, finger ring, spearhead, etc.
    Arch. J. XXXVII, 94. Pring, Brit. and Roman Taunton, Pl. 1: 3, p. 49. Taunton Cas. Museum.
16. *Wedmore*, nr. Heath House. Hoard. 2 neckrings, (18 cm × c. 10 mm, 15 cm × 6 mm). With ribbon torque. Arch J VI, (1847), 81. J. Arch. Assn. XXI, pl. XII: 2, p. 232. Arch. LXI, 108–9, fig. 3. *ABI* figs. 466–7, 469.
17. *West Buckland*. Hoard. Neckring ca. 22 cm. Arch. J. XXXVII, 107. *ABI* fig. 468. With 2-looped palstave, ribbed and bossed bracelet (*ABI*, figs. 87, 481).
18. *Somerset* (probably). Stray. 20.5 cm × 9 mm. Som. *ANHS* XXVIII, pt 1, 77. Taunton Cas. Museum.

Sussex

19. *Hollingbury Hill*, nr. Brighton. Hoard. Neckring 17.5 cm × 7 mm; terminals plain (without hooks). With palstave, Sussex loops, spiral finger rings. *B.M.* 1853/4–12/13. *SAC* II, 267. Arch. J. V, 323. *ABI* 76, 378, 386, 390. Arch. XXIX, 372. Curwen, *Archaeology of Sussex*, 2nd Ed., 202, 214–5.

Wilts

20. *Ebbesbourne Wake*, Elcombe Down. Hoard. with 16 bracelets. *B.M.* *W.A.M.* LIII, 106 (photo).
21. *Wilsford*. Barrows near Lake. 3 neckrings; not certain whether all found together. 1 Blackmore Museum, 1 Farnham Museum. *ABI* 377. *WAM* XXVIII, 261, XXXVII, 156. Goddard's List No. 289–91.

England

22. *Find-spot unknown*. 22.5 cm × 16 mm. *B.M.* 1910/6.19/1.

Scotland: Kirkcudbrights

23. *Glentrool*. Hoard. Neckring fragmentary, terminals missing. 3 mm. With palstave, rapier, 2 tanged razors, spearhead Hawkes D3, tanged knife, pin with disc head and sideloop, amber and glass beads. Edinburgh Museum. *PSAS* LV, 29; LVI, 20; VIII, 38, nr. Childe, *Prehistory of Scotland*, 149–50; Coles, 1959–60, 2 ff., Pl. I.

Ireland: Co. Armagh

24. *Annesborough*. Hoard. Neckring (terminals missing); fragment of second neckring. With palstave, penannular bracelets, Roman fibula. *PRIA*, XXXII, C, 173.

B. BRACELETS

British twisted bronze bar bracelets occasionally are found in the same hoards as the neckrings discussed above, and are evidently contemporary with them. The workmanship of most of the British twisted bracelets is, however, lacking in distinctive features which would enable direct comparisons to be made with Northern or Central European bracelets. The British twisted bracelets are usually fairly thick, and are most often simply cut-off sections of twisted bars, without carefully finished terminals, bent into penannular form. They have an improvised look about them, and are probably to be regarded simply as a by-product of the neckring industry.

An exception is, however, constituted by the doubled-wire twisted bracelet from the Barton Bendish hoard, which is a distinctive type with Continental roots. The Barton Bendish bracelet is made of thin wire bent double. The two strands are twisted in opposite directions, and their ends are bent back into hooks which attach to the loop.

Parallels for the Barton Bendish bracelet are however widely scattered in space and time. Bracelets quite similar, but without the hooks, occur both in the North and in Central Europe; the examples known to the writer are:

1. Switzerland. *Wabern*, Gem. Köniz, Kt. Bern. In hoard of 137 bracelets, including Tumulus Bronze Age and Urnfield types. Tschumi, 1953, 26, 259, *Abb.* 33. Dated by Kimmig to Ha A.
2. Schleswig-Holstein. *Steenodde*, Nebel, Amrum. Hoard, with twisted neckring like Hollingbury Hill, bracelets with incised decoration. Assigned by Sprockhoff (1937, 20) to Montelius IV. Kersten and La Baume, 1958, 60, 148, *Taf.* 80: 18–22.
3. Saxony. *Lausa-Weixdorf*, Ah. Dresden. 2 examples in hoard dated by Radig (*Mannus* XXIV, 89, *Abb.* 3) to Montelius V, though containing older types; M IV according to von Brunn, 1954a, 53, n. 132.

Similar but with *spiral* terminals, and in *gold:*

Schleswig-Holstein. *Steenodde*, Nebel, Amrum, *Hügel* 1, *Mittelgrab*. Dating uncertain; Possibly Period II. Olshausen, 1920, 12 ff. *Abb.* 3: Kersten, 1936, 162, No. 348; Kersten and La Baume, 1958, 103–4 (here *Grabhügel* Ao, *Grab* 1), *Taf.* 56: 16.

Similar to Barton Bendish, including hooks; but larger in size:

Brandenburg. *Herzfelde*, Kr. Templin. Hoard dated by Bohm to Montelius III. Bohm, 1935, 135, No. 43, *Taf.* 23: 2, 4–7, 15.

Other examples in France and Switzerland are cited by C.M.Piggott (1949, 114) from hoards at Venat (Charente)[1], Manson (Puy de Dôme), Dreuil (Somme), Savoy and the Swiss Lakes. *Untwisted* bracelets of similar form from the Heathery Burn cave and Llangwyllog in Anglesey are also cited; and the Sussex Loops, although of thicker, rectangular-sectioned bars, are also in the same family.

Since our Taunton-Barton Bendish phase has contacts with the West Alpine area, East Germany, Schleswig-Holstein and Northwest France, it is arguable that the Barton Bendish bracelet type was introduced to Britain from any of these areas. Wabern and Herzfelde show that the possible prototypes for the Barton Bendish bracelet exist at an earlier date than was formerly recognized, and one need not necessarily date the Barton Bendish bracelet by the latest examples.

C. GOLD BRACELETS AND NECKRINGS

In Ireland the rarity of bronze twisted bracelets and neckrings is more than compensated for by the abundance of these types in gold. Although most of the Irish examples of these are of peculiarly Irish forms and techniques, like the ribbon torques and the torques with cruciform cross-section, there are a small number of gold torques that are related in workmanship to the North European types. Neckrings of Armstrong's 'screw-twisted' Type 3 (1933. 20) with hooked terminals, such as his Pl. XII 84, 86, and possibly the example, known only from a poor illustration, from Scalby near Scarborough, Yorks, (Elgee, 1930, 175, fig. 56), are simply gold copies of the bronze neckrings of Kersten's Form 2, and are most

[1] Cf. *Inventaria* F. 6 (3), fig. 60. Bohm cites parallels in Hungary, including one from the hoard of Luszanka, Com. Savos (Hampel, *Altertümer*, *Taf.* 49, fig. 4).

economically explained as the product of Somerset influence on the Irish gold industry, though the possibility of direct contact with Northern Europe cannot be excluded. A gold hooked-terminal ring (it is somewhat too small to be a neckring, and is classified by Kersten as a bracelet, but is related to the neckrings in form) was found in a Period II grave at Hövede, Kr. Norderditmarschen in Schleswig-Holstein (Kersten, 1936, *Taf.* XVII: 3), and another is known from a grave of Period III at Schwichtenberg, Kr. Demmin (Kersten, 1958, *Taf.* 34: 366), and might be an export from Ireland, but apparently locally made bronze examples of the same form (Kersten's *Armring Form* E8) also occur in the North.

Another contact between Ireland and the North is provided by the pair of gold twisted bracelets from St. John's, Co. Carlow (Armstrong, *Ibid.*, Nos. 82–3, Pl. 61, Pl. XIII: 105, 110). These are very similar in workmanship to the Northern bracelets of Kersten's Form E9, penannular bracelets with short plain terminals. Many Northern examples have their terminals rounded in section, but examples with square-sectioned terminals like those from St. John's are also known in the North. Since the type is rare in Ireland and is common in the North, both in bronze and gold (Kersten lists 37 finds from Denmark and Schleswig-Holstein, of which two finds are dated to Period II and 19 to Period III), and bronze bracelets of similar form have an earlier history in the Tumulus Bronze Age, it is difficult to claim the Northern examples as an Irish form.

Rather, the St. John's bracelets may be Irish copies of Northern bracelets, if not actually imported pieces of Northern workmanship. The ribbed bracelets in the St. John's hoard[1] (if they are not, as Wilde suggested, the sides of gold boxes, like Armstrong, *Ibid.*, Frontispiece, 485–8) might also be regarded as imitations of the North European ribbed bronze bracelets, which also occur in South England (cf. C.M. Piggott, 1949, 120 ff.). Kersten's E9 bracelets are regarded as a characteristic form of Montelius III.

The rarity of good closed finds makes it difficult to establish whether the twisted gold-work with Northern analogies represents the earliest twisted gold-work in Ireland. It could be supposed that the technique of twisting metal was acquired by the Irish goldsmiths from Northern Europe, either directly or *via* Somerset, and that the specialized Irish techniques like the cruciform-section torque were developed on this basis. The ribbon torque has its earliest *terminus ante quem* in the bronze examples in the Wedmore and Edington Burtle hoards in Somerset, which belong to the Taunton-Barton Bendish phase; the earliest dating for an Irish gold torque of 'Tara' type is provided by the Grunty Fen find in Cambridge, with palstaves of our Type IIA3 (trident) which need be no earlier (Von Hügel, 1906/8, 96 ff.).

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[1] Armstrong, *Ibid.*, Nos. 377–8, Pl. X: 58–9.

There are no examples of Irish twisted goldwork which are datable to an earlier period than this; the most probable date for the St. John's hoard on the basis of the Northern parallels to the bracelets would be Montelius III. It may be recalled in this connection that the Bishopsland hoard (O Riordain, 1946, 161, Pl. XIII), found not far from the Wicklow gold-producing area, contains a vicelike object which would be suitable for gripping the end of a bar to be twisted into a neckring or bracelet.

CHAPTER XII

PINS

(Map XII)

As has often been pointed out, the bronze pin was not an indigenous article of costume in the Early Bronze Age in the British Isles, its place being taken to some extent by buttons and in part by pins of bone, a survival of Neolithic traditions. Bronze pins found in Britain are often actual imports or copies of imported types; only a few distinctively British pin types have been recognized. The importance of the imported pin types as indicators of cultural connections and trade and as clues to chronology has been stressed in articles such as the 'Picardy Pin' paper of Hawkes (1942) and the Blackrock article of Mrs. C. M. Piggott (1949). Hawkes has especially emphasized the contribution of the Tumulus Bronze Age of Central Europe to a group of pins found in South England and the adjacent districts of Northern France; while his suggestion of a North European contribution to the pin-costume of South England has been further developed by Mrs. Piggott. The influence of the Northern sunflower pin in Scotland and Ireland has long been recognized.

It is somewhat curious that not a single example of the Northern or North German two-piece fibulae, a type so characteristic and common in the North from Broholm's Period II onward, has ever been found in the British Isles.

The only possible exception would be the fragmentary two-piece fibula from the Ixworth collection in Suffolk, (Clarke, 1939, 30–1 pl. V), a collection formerly accepted as local finds by Sir Cyril Fox and Rainberd Clarke, but now (cf. Fox in the 1948 reissue of *Cambridge Region*, App. IV, p. A 16, n. 3) regarded as suspect. Half of the leaf-shaped bow is preserved, with a bronze wire spiral at the end; the pin is missing. The face of the bow has an incised pattern consisting of a series of lines parallel to the edges, and in the centre an hour-glass pattern of parallel incised lines. The leaf-shaped form of the bow is common to both the earlier Lüneburg and the earlier Spindlersfeld types of fibulae; the hour-glass pattern however, occurs only in the Spindlersfeld type; the spiral catch plate is also in line with the horizontal axis of the pin, and not turned downward as on the Lüneburg pins. (Sprockhoff, *Marburger Studien*, 205 *ff.*). The Ixworth pin most closely resembles the earlier (Montelius III) examples, and is not unlike one of the pins from the Spindlersfeld hoard itself (*Ibid.*, *Taf.* 82: 18). Sprockhoff tells us that in Montelius III the Spindlersfeld pins with hour-glass pattern occur only in a very limited region of North-east Germany, east of the Havel rectangle. It is from here, then, that the Ixworth pin is likely to have

come. But pins of this family with the hourglass pattern also occur in Moravia, Austria, and even on the Middle Rhine (*Ibid.*, *Taf.* 86, Nos. 15, 8, 11, 5, 6). Unfortunately, nothing is known of the history of the Ixworth pin, and it cannot be regarded as a certainly prehistoric import to Britain, despite the arguments for accepting the Hallstatt fibulae in the find as genuine (cf. Fox, 1923, 74–5, Ridgeway and Smith, 97).

It is to Brandenburg and to Montelius III that attention has been directed for the possible origin of a small group of single piece pins found in the British Isles, those with disc heads and side-loops. Janssen in a study of side-looped pins in 1935 called attention to the connection between some Brandenburg pins and a few in the British Isles, and Hawkes and Mrs. Piggott have adduced others which may have been influenced by this Northern German group.

Janssen showed that the pin with horizontally pierced sideloop (which he distinguishes from the 'East German' pins with vertically pierced loop, a separate family) had reached North Germany from Central Europe by Montelius II, and Denmark by Montelius III.

Of the looped pins with disc head he distinguishes several varieties; the most important of which for us is a type with plain disc head, straight unpierced and undecorated shaft, and the sideloop placed low on the shaft (a Central Europe group, mostly Hungarian, is like these except for having its loop placed directly beneath the head). Janssen cites three of these (cf. Map XII):

1. Kr. Westhavelland. *Marzahne.* Janssen, 1935, *Abb.* 5; Bohm, 1935, *Taf.* 10: 19.
2. Kr. Stendal. *Arneburg.* Janssen, 1935, *Abb.* 7.
3. Kr. Salzwedel. *Zethlingen. Stendaler Beiträge* III, 1910–14, 78.

The Marzahne grave is dated by Janssen to Period II. Arneburg (with a HaA 'Urnfield' knife *mit umlappter Griffzunge*, etc.) and Zethlingen are grave finds dated to Period III. The looped pins from Denmark and Schleswig-Holstein (ten examples of which are cited by Janssen, none of which are later than Montelius III) have conical, biconical or other head-forms or differ in other ways from this group. For chronological purpose it is important to note Janssen's conclusion that although some varieties, especially with more elaborately moulded heads, seem to survive into the Iron Age in Central and Eastern Europe, there is no evidence for the survival of *any* of the forms of looped pin in Northern Europe after Montelius III.

Pins which compare closely with the Brandenburg pins of Marzahne type are limited in Britain to the one example from the Glentrool hoard in Kirkcudbrightshire. Two such pins are known from Ireland, but without exact provenance: one in the British Museum, and another in the Ashmolean (1927/2853). Since the combination of simple disc head with undecorated, unswollen shaft and sideloop placed low on the shaft does not seem to occur in Central Europe, there is a good case

for regarding the Glentrool and the two Irish pins as imports from Brandenburg, at a time not later than the end of Montelius III. The Glentrool hoard contains objects of Middle Bronze Age character, related to those of the Taunton-Barton Bendish plase of Southern England.

The pins with sideloops and/or disc heads found in South England and Northern France all have features which connect them more directly with Central European types than with the North. Pins with both sideloops *and* disc heads include two cited by Mrs. Piggott (1949, 112) one from Dorchester, Dorset (*Ibid*, fig. 3) and the other from Rushall Down, Wilts (*Devizes Mus. Cat.*, II.B.16). The Dorchester pin is a large one with a slightly swollen shaft which is elaborately incised in the Tumulus fashion, a sideloop, and a lozenge-shaped plate attached to its side opposite the loop. Its large disc head is decorated with a cast pattern in relief, consisting of a small central spike surrounded by two concentric circles, a circle of small circles, and a circle of small spikes. This astonishing pin does not seem to have an exact analogy anywhere, but combines features from a variety of sources. The *shaft* may be derived from Professor Hawkes' Picardy group of Tumulus-inspired pins; the decoration is rather degenerate, the swelling of its shaft is not pronounced, and it has no perforation in the neck. The *sideloop* connects it with the Glentrool and Irish specimens already discussed and with several pins in the Picardy group. The *disc head with spikes and circular mouldings*, though not exactly parelleled elsewhere, has some partial analogies. Circles of spikes appear on the Rushall Down pin (which has a plain shaft and a sideloop) and on a number of pins from Central Europe (Limberg-Heidenstedt, Lower Austria; Willvonseder, 1937, *Taf.* 49: 3, pp. 115, 266. Only the head and a small portion of the shaft survive); Sukorin, near Hluboka, Bohemia (Schranil, 1928, 125; *Taf.* XXV: 21); Upper Palatinate (no exact find spot given; Naue 1903, 1, 33, *Taf.* XL, fig. 9); Hungary (Hampel, 1892, *Taf.* CLXXV: 1). The example from the Upper Palatinate was found in a grave dated to Reinecke C or Holste's Late Tumulus, and is presumably an import from farther east. A boss and circle pattern like that on the Dorchester pin (but with no spikes or small circles) was found in an urn grave at Hanau (Lehrhofer Heide, Grab 7) in the valley of the Main, dated by Müller-Karpe (1948) 'zu Beginn der Urnenfelderzeit' (Reinecke D/Ha A). He cites earlier parallels farther east, and a similar pin found with a sword with triangular hilt-plate in Upper Italy which confirms the Hanau dating. The head of the Dorchester pin combines the elements of the Limberg and Hanau pin-heads, which thus gives us an ancestry for the Rushall and Dorchester pin-heads in Central Europe at the inception of the Urnfield period. The *lozenge side-plates* on the Dorchester pin must, as Mrs. Piggott has shown, be regarded as a purely native British feature. They occur on two pins with disc heads and perforated undecorated swollen-necked shafts, one from Lakenheath and the other from Ingleton. Yorks. (C. M. Piggott, 1949, fig. 4). Both are

stray finds. But such a side-plate also occurs on a large pin from Hanley Cross, Sussex. The shaft is plain; the head is disc-shaped with a conical boss in the centre. It was found in a barrow with 'the dusty remnants of a skeleton', a pair of Sussex Loops, and a native large loopheaded pin (*Sussex Arch. Coll.* II, 265–6; plate, No. 1–3). These lozenge side-plates, it has been suggested, derive from the similar shaped plates which often occur on British looped spearheads. The central boss is the only other feature we have not met before; its ultimate prototypes appear to be in the *Spindelkopfnadel* of Eastern Germany and late Tumulus pins such as occur at Hagenau and in Switzerland, South Germany, and Holland. In Northern France the disc-headed pin with boss is found in the Caix hoard; the central boss also occurs on Irish disc-headed and sunflower pins.

Thus the pin finds which we have discussed fall into two groups: one probably of Northeast German origin, localized in Brandenburg, and unlikely to be later than Montelius III, and a second of Central European origin, which as Hawkes has emphasized is predominantly late Tumulus in character, with a little Urnfield influence. The two streams meet in South England at a time when other incomings from these same regions can be demonstrated, *i.e.*, the period of the Blackrock and related hoards which we term the Taunton-Barton Bendish phase.

'NORDIC' PINS

The influx of 'Nordic' pin-types to Scotland and especially to Ireland in the Late Bronze Age is a striking feature of the period. Sunflower pins are most common (some thirty examples); disc-headed pins, cup-headed and funnel-headed pins, and Northern varieties of swans-neck pins occur less frequently (Hodges, 1956, 42 ff., 53–4, fig. 5; Coles, 1958–9, 1959–60).

Of the sunflower pins, Hodges distinguishes two classes: *Class I*, with heads possessing a small hemispherical boss and concentric circle ornament, and *Class II*, with a larger, conical boss. The latter may have concentric circle ornament, radial patterns, or no decoration. The Class I pins, which are closest to the Scandinavian type DO IV 163 (the pin from Ballyshannon, Co. Donegal, B.M. *LPA* fig. 13: 6, is very little removed from the typical Nordic pins) occur mainly in Northern Ireland; the Class II pins, a purely Irish variety, have a more widespread distribution in the island. The Scandinavian prototypes are almost all of Montelius V, though a few examples occur in IV and VI (Broholm, DB IV, 80; Baudou, 1960, 78, Type XXV, B2b, *Taf.* XVI). The Irish imitations occur not infrequently in hoards, sometimes together with related disc-headed pins and amber (see Hodges' hoard-list, 1957, 60 ff.: Cromaghs, Derryhale, Booleybrien, Knocknalappa, Tullach,

Newport), the bronzesmith at Jarlshof in Shetland had sunflower pins in his repertory (Curle, *PSAS* LXVIII, 1934, 279 ff.).

From Hodges' sunflower Class I list must, however, be deducted the mainly Scottish pins of Orrock-Tarves type (C. M. Piggott, 1947/8, 306 ff., Coles, 1958/9, with dist. map fig. 2). These have heads like the sunflower pins but also a swans-neck; these must represent a fresh incoming during Montelius VI. The Scottish pins are all of bronze. The example with an iron shaft from an Iron Age A pit at Fengate, Peterborough (Hawkes, 1943, 197 ff., fig. 1), was shown by Hawkes to be derived from the North German area about the transition of Wessenstedt to Jastorf A in the fifth century; Coles would start the Scottish series in that century or the late sixth.

The pin-head from the Edinburgh hoard (ABI fig. 464; for the associated swords see Brewis, 1922/3, fig. 54) has its concentric rings grouped in a manner which suggests influence from an East Swedish group which according to Baudou belongs to the end of Montelius V and the beginning of VI (Harnevi, Uppland: Moberg, 1941, Taf. III; cf. *Minnen* 1330–2, and Hansson, 1927, figs. 156, 178, 186; Baudou, 1960, 79, Type XXV B2c). Coles suggests that this pin had a swans-neck originally.

The Irish *cup-headed pins* seem to have their closest parallels in Sweden (*Minnen* 1315–17); Baudou, 1960, *Taf.* XVII). Hodges lists cup-headed and coneheaded pins together; four examples are listed for Ireland (including examples in the Derryhale and Maryborough hoards; at Derryhale with sunflower pins, disc-headed pins, Thorndon knife, etc.; Coffey, 1913, 82; at Maryborough with socketed gouge, amber, etc.). *Cone-headed pins* also occur at Heathery Burn, Durham (Greenwell, 1892, 88 ff.; most recently, with dating to seventh century, Hawkes and Smith, 1957, 149 ff.) and in the hoard from Point of Sleat, Skye (*PSAS* XIII, 326, LIV, 129; Coles, 1959–60, 111–2).

Thus it appears that the Northern pin-complex began to reach Britain and Ireland during LB 2 – Irish LB 3 – Montelius V, with further incomings in Montelius VI.

CHAPTER XIII

JANGLES

(List, p. 154; Pl. XVII; Map XIII)

Sets of jangles have been found twice in the British Isles and also in several instances in Western France (see list below). They belong to a type not uncommon in the Danish Islands and in the adjacent regions of South Sweden, Mecklenburg and Pomerania. They have lately been discussed by Thrane (1958), under the name 'rattlependants'; cf. also Rynne, 1962.

In the hoard from Parc-y-Meirch, Denbighshire (long known in the literature as the Abergele hoard, but corrected in the republication by Sheppard, 1941, 1 ff.) there are two sets of jangles, each consisting originally of six oval discs with beaded rims and projecting loops, by which they are suspended from interlocking rings.

The Lissanode find (recently published for the first time by Rynne, *op cit.*). consists of three slightly oval discs, attached by loops to a small ring. Although they are very similar in shape to the Parc-y-Meirch discs they lack the beaded rims. The Lissanode jangle set was part of a hoard, said to have contained 'stirrups and bridles' now lost.

The round or oval form of jangle disc appears to be characteristic of the Western Baltic area. Two forms ought to be distinguished among them. In Form I the disc is round or oval in outline, and the hole for suspension is entirely within the perimeter of the disc itself; while in Form II the suspension loop projects beyond the rim of the disc. The British and French jangle-discs are all of Form II. Several of the Parc-y-Meirch discs have their loops turned at a right angle to the plane of the disc face.

Discs of Form I have been found in Denmark at Egitslevmagle (Høve, Sorø Amt, and Fangel Torp); in Sweden, at Ekes and (in miniature form) Svartarp; in Schleswig-Holstein at Hellwit; and in a number of North German finds (Sprockhoff, 1956, II, 145, *Taf.* 59, *Karte* 46).

Disc of Form II, varying slightly among themselves in details but corresponding on the whole quite closely to the Parc-y-Meirch type, are known from Danish finds at Holsteinborg, Fangel Torp and Jordhøj, and from the North German hoard of Niederlandin, Kr. Angermünde. Some of the discs from Fangel Torp and Holsteinborg (Pl. XVII*b*) are virtually identical with the Parc-y-Meirch discs; and

others differ slightly in details. In South Sweden, discs from Eskelhem and Trelleborg differ form the Parc-y-Meirch type in that their suspension loops are larger and more circular in shape. The Northern jangles are related to, but dissimilar in detail from, the Central European pendants which were developed in so many varities by the Urnfield Culture (cf. Kossack, 1954), and which were occasionally imported to and imitated in Northern Europe.

The jangle discs of our Forms I and II are almost always attached to rings, and often occur in hoards together with horse-trappings, including bridle bits and sets of the concave, cymbal-like discs described in the German literature as *Phaleren* or *Pferdeschmuckplatten* (Von Merhart, 1956). In the Høve find the jangles were actually attached to bridle bits; the Svartarp find consists of a bronze model of a dangling from its cheeks.

Much smaller jangles of similar form have occasionally been found attached to other types of objects. These are of interest because their suspension loops are at right angles to the discs themselves, as on some of the Parc-y-Meirch jangles. A Danish find from near Kolding has such miniature discs attached to a massive ribbed 'armlet'; precisely similar discs were suspended from a bronze terminal for a leather belt found at Albersdorf, Kr. Süderditmarschen in West Holstein.

The best parallels for the Parc-y-Meirch discs are those from the Danish Islands. Rimless discs like the Lissanode and Azay-le-Rideau specimens are known from several finds in Pomerania (Alt-Ristow, Kösternitz, and Körlin, in Kr. Schlawe), though these are of Form I rather than Form II. In view of the detailed similarity of the Western jangles to the Danish ones of Form III, the Parc-y-Meirch and Lissanode discs and the French specimens must be regarded as actual imports (or local copies of imported specimens) from the Baltic area.

All four of the Danish hoards in which jangle discs occur are assigned by Broholm to Montelius V; the Kolding 'armlet' and the Albersdorf belt terminal are also Montelius V types, and the North German jangles are assigned by Sprockhoff (1956, 106) mainly the same period, although occasional examples belong to Montelius IV or VI. The Swedish discs may be either Montelius V (Ekes, Svartarp) or VI (Eskelhem); but all the Swedish jangles are less like the Parc-y-Meirch discs than the Danish ones.

The Parc-y-Meirch hoard, recently discussed briefly by Piggott (1952/3, 183) in connection with hoards containing objects associated with horse-drawn vehicles in the British Isles, has been assigned to LB3; Hawkes and Smith (1957, 190) date it c. 650–600. The looped bronze buttons with dot-and-concentric-circle ornament on their face in the Parc-y-Meirch hoard (Sheppard, 1941, Pl. Va, no. 83–91) are perhaps also imports from the North, or at least copies of Northern buttons. The French hoards cited below belong to the carps-tongue complex.

LIST OF JANGLES OF NORTHERN TYPE

(*cf.* Map XIII)

British Isles

1. Denbighs. *Parc-y-Meirch* (Abergele). Hoard. Sheppard, 1941, 1 ff.
2. Westmeath. *Lissanode*, nr. Moate. Rynne, 1962, 383–5; NM Dublin. Mentioned Mahr, 1937, 382.

France

3. *Azay-le-Rideau* (Indre-et-Loire). Founders' hoard. Dubreuil-Chambardel, 1923, 42–6, figs. XVII-XIX. *Gallia Préhistoire* II, 1959, Pl. 5: 65.
4. *Villeneuve-St. George* (Seine-et-Oise). Dredged from the Seine. De Mortillet, 1881, fig. 982.
5. *Code*, comm. de Chedigny (Indre-et-Loire). Hoard (carps-tongue). Moreau et. al., *Bull. les Amis du Musée Préhistorique du Grand-Pressigny*, IV (1953), 28 ff., fig. 2, 10; *Gallia Préhistoire* III (1960), 109 ff., esp. 117 ff., fig. 7: 11.
6. *Ploneur* (Brittany). Hoard. With palstaves (!), rectangular knife. *Arch. Camb.* 3rd S., VI (1860), 137.

Denmark

7. Sorø Amt. V. Flakkeberg H. *Holsteinborg*. Hoard, M V (Pl. XVII*b*). (Form very similar to Parc-y-meirch). Broholm, DB, III, M. 126.
8. Odense Amt and H. Fangel s. *Fangel Torp*. Hoard, M V.
   Broholm, DB III, M. 163; Aarbøger 1915, 137 ff.
9. Vejle Amt. Brusk H. *Kolking* (near). Hoard, M V. Miniature jangles suspended from rings attached to massive 'armring'. Transversely looped like some from Parc-y-meirch, but smaller.
   Broholm, DB III, M. 205.
10. Sorø Amt. V. Flakkeberg H. *Hove*. Hoard, M V. Jangles suspended by ring from bridle-bit. Broholm, DB III, M. 127; DO IV 216.
11. Falster. Gundslev s. *Skjerne*. Madsen, 1876, fig. 17.
12. Zealand. *Jordhoj*. In tumulus. Madsen, 1876, Pl. 16.

Sweden

13. Västergötland. Åsle sn. *Svartarp*. Hoard, M V. Model of horse's head, with jangles suspended from cheek-piece of bridle-bit. Oldeberg, II (1943), 213, fig. 401; Hommerberg, 1946, 137 ff., *Bild* 137–8.
14. Skåne. *Trelleborgs Mose*. Hoard. Discs on ring.
15. Gotland. *Eskelhem*. Hoard, M VI. Moberg, 1941, Taf. IV, 68, n220 (with further refs).
16. Gotland. Bro sn. *Ekes*. Hoard, M V. 3 jangles on looped toggle. Montelius, *Minnen* 1234 (with further refs.).

Germany and Poland

(listed and mapped by Sprockhoff, 1956, 106–7, with dist. map *Karte* 46)

Alt Ristow, Kr. Schlawe; *Flemsdorf*, Kr. Angermünde; *Kallies*, Kr. Dramburg; *Karstädt*, Kr. Ludwigslust (grave); *Kl. Butzig*, Kr. Flatow; *Kl. Drebnau*, Kr. Fischhausen (hoard); *Körlin*, Kr. Schlawe (hoard); *Köstemitz*, Kr. Schlawe (hoard); *Lenzersilge II*, Kr. Westprignitz (hoard); *Niederlandin*, Kr. Angermünde (grave); *Prauster Krug*, Kr. Danziger Höhe; *Pyritz* (hoard); *Rekau*, Kr. Putzig (hoard); *Roga*, Kr. Neubrandenburg; *Ruthen*, Kr. Parchim (hoard); *Schönebeck* b. Freienwalde, Kr. Saatzig (hoard); *Schönwalde*, Kr. Stolp (hoard); *Schwachenwalde*, Kr. Arnswalde (hoard); *Stolzenburg*, Kr. Uckermünde (hoard).

Miniature jangles

Helwitt, Kr. Sonderburg, Schleswig-Holstein (Schwantes, 1939, Abb. 639); *Albersdorf*, Kr. Süderditmarschen (*Ibid.*, Abb. 646; Sprockhoff, 1956, *Taf.* 71: 3; (hoard, M V).

CHAPTER XIV

BRACELETS

Two varieties of bracelets found in the British Isles, apart from the twisted bracelets discussed in the chapter on twisted ornaments, may owe their appearance in Britain to influences from Northern Europe. The two types are ribbed bracelets and bracelets with incised decoration.

A. RIBBED BRACELETS

Ribbed bracelets in Britain were listed and discussed by C.M. Piggott (1949, 118 ff., annotated list p. 120). From her list of eight British finds, one could separate, as deviant types, the fragmentary bracelet from West Buckland, Somerset, with its cast boss ornament, and the one from Cornwall, with its broad central midrib; these seem to belong to a different tradition than the remaining six, which are characterised by close-set narrow ribs. Of these, the Ramsgate type, one is in Kent, three in Wiltshire, and two in Somerset. The Ramsgate specimen comes from the same inhumation grave as a pair of bracelets with incised pointed-oval motifs, to be discussed below. Of the Wiltshire specimens, two (South Lodge and Thorny Down) come from Late Bronze Age enclosures, and the third, from Lake, was a barrow find; twisted neck-rings come from the same barrow group, although whether in association with the bracelet is not known. The Somerset examples are from the Batheaston (Monkswood) and Edington Burtle hoards (cf. M.A. Smith, 1959, 149 ff., fig. 2: 7, 9).

The ribbed bracelets of Ramsgate type all have parallel sides except the South Lodge Camp specimen, which has sides which converge slightly toward the terminals. The ribs are normally cast, except at Monkswood where they seem to have been made by tooling (see below, p. 157). Where terminals are present they are smooth and undecorated, and with straight ends. An exception is the Lake bracelet, which has its ends rolled in opposing directions so that they interlock – a feature for which it is difficult to cite parallels. The number of ribs varies from five to eleven. The Ramsgate bracelet, with eleven ribs, has its two outermost ribs and the central rib slightly higher than the others; a feature which Holste (1939, 67)

tells us occurs in his Eastern group in Hessen and in North Germany, but not often in South Germany. This feature also occurs in Denmark.

In origins the ribbed bracelet goes back to the *manchette* bracelets of the Unětice culture; the type continues in several varieties throughout the Tumulus Bronze Age[1], and, more rarely, into the Urnfield period. In Eastern France Dechelette includes ribbed bracelets not unlike the British examples among the typical forms of his Period III, which includes Tumulus and Earlier Urnfield elements, but not Later Urnfield types.

The ribbed bracelet appears in Northern Europe as an import from Central Europe in the Pile stage, and becomes naturalized during Period II. Kersten (1936, 48 ff.) distinguishes two families, his B group, with ends that narrow and then expand into a club-shaped terminal (*Ibid.*, *Abb.* 4) and a C group, with more or less straight sides and ends (*Ibid.*, *Abb.* 5). No examples of the B group are known in Britain, and it is to the C group that we must look for parallels to the Ramsgate type. The simplest form, C1, is simply a Tumulus Bronze Age form adopted in the North in Period II. The more developed Northern forms, Kersten's C2 and C3, are parallel-sided and have parallel ribs, and to that extent compare closely with the Ramsgate type, but they normally have terminals which are transversely ribbed or otherwise decorated (a feature unknown in Britain). C4 is a larger and somewhat heavier form with the outer ribs exaggerated into flanges.

Thus the British bracelets most closely resemble the Northern C2–C3 groups, though they lack the terminal decoration of the latter. C3 is a rare type, indeed there is only one example in the North but it is typologically important because it has the slightly expanded outermost ribs seen on the Ramsgate specimen. It comes from Hedehusum on the Island of Föhr and is a grave find dated to Montelius III (Kersten, *Ibid.*, 51, 128). C2 is a very common form, and Kersten cites 24 finds, overwhelmingly in Period III. In the Ilmenau Culture, Sprockhoff listed thirteen finds (1937, 104 ff.) in support of his *Karte* 31, a map of the characteristic Ilmenau forms; the ribbed bracelet is his *Abb.* 19: 8. Nine of the thirteen finds are in Kreis Uelzen. Detailed classification is not given; but Sprockhoff has specifically compared the Ramsgate bracelet with his Ilmenau type (1941, 86; cf. C. M. Piggott, *op. cit.*). The later phase of the Ilmenau Culture (Kersten, 1951, now terms it the Ilmenau Middle Bronze Age) corresponds with Montelius III; we are unable to discover in the Danish or North German literature any suggestion that such bracelets appear in Montelius IV contexts except for a belated example in a hoard tentatively assigned by Von Brunn (1952, 267 ff., fig. 1a) to the Late Hall-

[1] Schaeffer illustrates some possible prototypes for the British bracelets from Königsbrück (1926, 73, fig. 35: 4, IV A, fig.) and Harthouse (*Ibid*, fig. 56: 3, II L), in Tumulus graves in the Forest of Haguenau.

statt A-Montelius IV horizon from Kloschwitz, Kr. Plauen. See especially his pp. 283, 278.

If these bracelets came to Britain either from the Scandinavian area or from the Ilmenau, it must be presumed that they had arrived in the British Isles by the end of Montelius III at the latest. Indeed, a recently re-discovered hoard in the Netherlands appears to provide an unexpectedly precise *terminus ante quem* for their appearance in southern Britain. The hoard in question is a peat find from Ommerschans in the province of Overijssel (Butler and Bakker, 1961). It contains a broken portion of an object with tooled ribbing like that of the Somerset ribbed bracelet in the Monkswood hoard. The Ommerschans object is admittedly not curved but flat; yet it is difficult to imagine what the object, given its size and form, could be unless it were intended to be bent into bracelet form; in which case it would provide an excellent parallel for the Monkswood specimen. The Ommerschans hoard also contains, *inter alia*, a chisel like the Somerset one from Sparkford Hill (M. A. Smith, 1959, fig. 1: 7), and a giant ceremonial rapier or sword of 'Atlantic' type, exactly like the one from Plougrescant. Most interesting from the dating point of view in the Ommerschans hoard is a razor of a type otherwise known only in the Pantalica phase of Sicily, an early specimen of Peroni's A group. Such a razor should date from the very beginning of the Pantalica phase; which according to current views should occur either in the century before 1200 B.C. (if we follow Peroni's division of the Pantalica material) or the century after (if we follow Müller-Karpe).

B. DECORATED BRACELETS

This type was also discussed by Mrs. Piggott (1949, 118 ff.). The bracelets in question are those from the Ramsgate find (a pair, associated in a chalk-cut grave with an inhumation burial and the ribbed armlet mentioned above); a pair from Portsmouth, found with two similar but undecorated bracelets and a looped palstave with slight blade flanges (our type IB2a) (*Arch.* LXXI, 139, fig. 4); and a pair from Liss, Hants. (ABI fig. 475)[1]. These bracelets all have a pointed-oval motif, which is one of the features of bracelets found very commonly in the Ilmenau Culture. Numerous examples of the Ilmenau bracelets are illustrated by Kersten (1951, 56 ff., *Taf.* 39 ff.); their distribution is mapped by Sprockhoff (1937, *Karte* 31).

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[1] Evans suggested that the Liss bracelets may have been associated with the ornamented cast-flanged axe (ABI fig. 17) also found at Liss. The discrepancy in their conventional dating is however considerable.

While the round cross-section of the Ramsgate bracelets does not appear to be characteristic of the Ilmenau type, Sprockhoff, who examined the Ramsgate pair in the British Museum, specifically called attention to their Ilmenau affinities; remarking in 1941 (82) that they are '*ohne die Vorbilder aus dem Ilmenaugebiet gar nicht denkbar*'. Both the Ilmenau bracelets and the Liss and Ramsgate bracelets must on the other hand be somehow related to those from Vernaison (Rhône) illustrated by Déchelette (*Manuel*, II, fig. 119: 5).

The Portsmouth bracelets differ somewhat from these, having pointillé as well as incised lines in their decoration, and panels of cross-hatching. These features are remarkably closely paralleled on a bracelet from the hoard from Steenodde, Nebel, Amrum already cited in our chapter on twisted neckrings and bracelets above, which Sprockhoff (1937) assigned to Montelius IV. This and another related bracelet from the same hoard are apparently not Ilmenau bracelets; they seem to be imports to the North, though Sprockhoff does not discuss them in detail, and their exact source is undetermined. Similar bracelets occur in Breton Middle Bronze Age hoards, *e.g.* Bignan in Morbihan (Marsille, 1921, 77, Pl. VI), with axe-blades presumed to be of palstaves and rivets which from the peculiar tilt of their heads are likely to be from rapiers; Taillay, I-et-V (Giot, 1960, 153, fig. 45); Guipry, I-et-V (Briard, *Travaux Rennes*, 1961, 22 ff.). The bracelets from the Villers-sur-Authie hoard (with a Form 2 twisted neckring and other objects) have simpler patterns but appear to be in the same family.

CHAPTER XV

AMBER AND FAIENCE

(List, pp. 164–5)

A. AMBER

During the Bronze Age the amber trade provides a major continuing link between the British Isles and Northern Europe. While it is possible that some raw amber was acquired on the beaches of eastern Britain[1] and the Netherlands, there is no evidence to show that this source was actually exploited during our period, and we follow the prevalent archaeological assumption that British amber finds are to be attributed to importation primarily from North Jutland. There is abundant evidence that North Jutland amber was collected and utilized even in the Mesolithic, and a number of large merchants' hoards in that area – one of them, from near Skive, containing nearly 13,000 beads – show that the fossil resin was systematically collected for trade purposes during the Early Neolithic. During the Northern Middle Neolithic, the amber trade extended eastward to the Danish islands, Bohuslän and Bornholm, and amber occurs in numerous grave finds of Single Grave and Funnel Beaker folk. By the Late Neolithic the trade had extended to Central and Southern Europe along the Amber Routes defined by de Navarro (1925), and, in the view of Northern archaeologists, it provided the principal means of payment for the metal imports that were the essential basis of the rich Northern Bronze Age.[2]

The amber routes to the West have never been systematically studied. It appears certain that some amber began to come westward during the Northern Middle Neolithic, though not in great quantities. Struve (1955, 66, 79) is able to cite only ten amber finds associated with the Single Grave and Bell Beaker cultures in

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[1] 'Plenty of amber has been dredged up by fishermen in the North Sea, and plenty has been found washed up on the coasts of Norfolk and Suffolk, notably between Cromer and Aldborough' (D'Almame, *Antiquity* 1931, 105).

Thurnam (1871, 500 ff.) mentions finds of raw amber on the coasts of Yorkshire (Holderness) and as far north as Aberdeenshire.

[2] Recent studies of the Northern amber trade are by Becker, 1947, 294 ff., with maps fig. 57–8; 1933, 91 ff., 114–5; also 1950, 1 ff.

Schleswig-Holstein, and four in the rest of Northwest Germany. In the Netherlands, Bursch in 1933 listed nine finds of amber with Beakers. Most of these are with late Beakers of Veluwe type, but in at least one case (Odoorn: Van Giffen, *Bauart*, 1930, 166) with a Beaker burial regarded by Van der Waals and Glasbergen (1955, 21, 32, 39; No. 24) as early in the sequence in the Netherlands. Most of these finds in the Netherlands are on the Veluwe.

In Britain, amber occurs very rarely with Beakers. Such finds are known at Driffield and Acklam Wold in Yorkshire; the Fissure Cave, Grindon, in Derbyshire; and Ardiffery in Aberdeenshire.

At Driffield, three dome-shaped amber V-bored buttons were found in a rich Beaker grave in a cist, with a crouched skeleton said to have been wrapped in a linen covering (Elgee, *Arch. Yorks.*, 54; *BM LPA*, fig. 15). The Beaker is described by Brailsford as of AB type; the neck has zones of diagonal hatching divided by cordons, with two separate bands of decoration on the lower part of the body. There is a slight foot. The tanged dagger associated with it is also a hybrid, having a single rivet in the centre of the tang, like the one from Sittingbourne, Kent[1]. A wrist-guard was provided with bronze rivets covered with gold; an unusual bit of luxury. Finally there was the skull of a hawk.

Ardiffery in Aberdeenshire provides another rich Beaker grave with amber. Two Beakers (both of Crichton-Mitchell's Type CA) were found in a cist grave in a tumulus, with a necklace of twelve beads of jet and four (unworked) of amber, a wrist-guard, a flint axe, seven barbed-and-tanged arrowheads, a flint knife and a flint flake. The burials are described as being of an adult male, a boy of twelve, and a dog. (*PSAS*, XXII, 366; Crichton-Mitchell, 1934, No. 8–9, with further references). One of the Beakers is decorated in the tri-zonal manner characteristic of Van der Waals and Glasbergen's Beakers with contracted zones, which they regard as developed Bell Beakers immediately preceding the emergence of the Veluwe Beaker. The type appears to originate in Drenthe and to spread to the Veluwe, and the Dutch authors suggest that they are the immediate prototypes of the British C Beakers, crossing the North Sea directly to Northeast Britain. C14 determinations suggest a date of about 1800–1700 for this development in the Netherlands (Van der Waals and Glasbergen, 1955, 37). We suggest below that the development there can be equated chronologically with the Upper Grave phase of the Single Grave culture, and that the invasion of Britain dates from about this time.

Since the V-bored button is widely associated with the Beaker cultures in Eu-

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[1] A dagger with a single rivet, somewhat reminiscent of the Driffield blade, comes from a Unětice grave at Aspenstedt, Kr. Halberstadt in Saxony (*JMV* XXXIX, 1955, 71, Abb. 26). Another is from Ireland (Jamestown Bridge, Co. Roscommon/Leitrim, N.M. Dublin, W 175); still another from the Netherlands (Lettensche Berg, near Ede, Gelderland; with amber V-bored buttons; see p. 165); see also Piggott in Fox *Festschrift*, 1963, 73–4, fig. 16.

rope, and was made wherever Bell Beaker-using people lived, in materials locally available such as stone, bone, amber and jet[1], we cannot be certain whether the above-mentioned beads represent imports of finished buttons or whether they were locally made. With the V-bored button from Acklam Wold, however, the case is different. While the normal V-bored button is cone or dome shaped with a rounded base, the Acklam Wold button is pointed-oval in plan. Such buttons appear to be a distinctively Northern type, represented only in Scania, Denmark and Schleswig-Holstein. One amber V-bored button of this form was found in the classic porthole stone cist at Skogsbo (Forssander, 1936, *Taf.* XXIV), and another in a stone cist at Hammarlöf in Scania (*Minnen*, 656) together with Late Neolithic slate pendants. In Schleswig, a pointed-oval V-bored button was found in a passage dolmen at Albersdorf, Kr. Süderditmarschen (Aner, 1951, 5–6), where it was apparently secondary; a fragmentary flint dagger seems to have belonged to the same deposit. A Danish example comes from a grave at Troelstrup in Aarhus Amt, together with a midrib dagger that does not look particularly early (Broholm, *DB* I, *Grav* 28). The bead type is assigned to the Late Neolithic by Glob, Aner (1951, 6) and Becker (1954b, 246 ff.); a related example comes from a Sögel grave in Denmark (Høghøj: Hachmann, 1957, 185, *Kat. Nr.* 35, *Taf.* 10: 10–17).

Since the Acklam Wold bead agrees both in form and material with its Northern counterparts, it seems most probable that it is an actual import, datable to the Northern Late Neolithic.

It was found at the bottom of an oval primary grave pit in Barrow 124 (Mortimer, 91, fig. 213) together with a contracted male skeleton, a Beaker (fragment illustrated by Mortimer), a large leaf-shaped flint dagger, a conical jet V-bored button, a jet pulley-ring, a bone pin, a lump of pyrites, a decayed oval-shaped wooden object and some flints (*ibid*, figs. 209–217). It is therefore an excellent representative of the A Beaker culture in Yorkshire. The Beaker fragment has a band of short vertical rouletted lines immediately below the rim; below this are horizontal bands of finger-nail impressions bordered by lines. Mortimer adds that the base was ornamented 'in the form of a cross, produced by three rows of faint impressions with a notched tool'.

Jet imitations of the pointed-oval amber V-bored button are known in Yorkshire and elsewhere. Mortimer illustrates examples from Painsthorpe Wold Barrow 200 (with a contracted male skeleton, two other jet V-bored buttons, pig and other animal bones; *ibid*, 120, figs. 288–290) and Garton Slack Barrow 81 (on the chest of a young female in an oval grave pit; below which, in the same pit, was a dismembered burial with a C Beaker; Abercromby, I, No. 146, Mortimer, fig. 608).

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[1] Recent surveys are by Arnal, 1954, 255 ff., and by Hayek, *Památky* 1957.

The Painsthorpe and Garton Slack pointed-oval buttons each have two pairs of V-borings, and may be regarded as imitations of the imported type[1]. Another jet example, with one set of borings, may be cited from Culduthel, Inverness, found in a cist with a contracted female skeleton, a bronze awl, a necklace of disc and biconical beads of jet, and an obsidian flake (Low, *PSAS* LXIII, 1928–9, 217 ff., figs. 5, 6).

At Blinmill, Rothienorman, Aberdeenshire, two small amber beads were found in a cist grave in a cairn, together with a Beaker-Food Vessel hybrid, a jet spacer necklace, a fragment of bonze, and burnt bones (Childe, 1946, 107, No. 42; cf. *PSAS* VI, 203).

Amber finds attributed to the Wessex Culture are remarkable both for the frequency of their occurrence (no less than 40 of the 99 Wessex Culture graves listed by Piggott, 1938, contain amber) and for the extraordinary workmanship represented. Alongside simple beads and V-bored buttons, there are the dagger pommel inlaid with gold nails from Hammeldon Down, the possibly lathe-turned cups from Hove and Clandon, the gold-bound amber discs, the spacer-plate necklaces, and the halberd pendants; pointing, as Piggott and others have shown, to trade connections with Saxo-Thuringia, South Germany, and the East Mediterranean as well as with Jutland.

As Piggott pointed out, there are no characteristically Danish forms of amber ornaments in the Wessex *repertoire*. The Wessex amber must have been imported to Britain as raw lumps and/or simple beads, and most of the ornaments were fashioned by Wessex craftsmen. Curiously, the only Wessex ornaments of Northern form – the double-axe bead from Normanton (*SP* 72, fig. 8: 7) and the double-button from Manton, (*SP* 68, fig. 8: 13) – are not of amber. An amber dagger pommel is known from Oremölla in Scania (Forssander, 1936, *Abb.* 38: 4). Its form, however, is not sufficiently like the Wessex pommels to make a connection certain. The probability of raw amber having been exported from Jutland is supported by the character of the hoards there, which consist mainly of simple beads and raw lumps, and by the similar absence of characteristically Northern forms in, for example, the Dieskau hoard in Saxo-Thuringia, with its 120-odd beads.

More complicated is the question of the origin of the Wessex amber spacer-plate necklaces. In Denmark the idea of a crescentic necklace with spacer-plates undoubtedly goes back to the Early Neolithic, as the famous find from Sortekaer demonstrates (Neergaard, *Aarboger* 1888, 287; Brøndsted, 1938, I, fig. 95). Tri-

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[1] Jet imitations of Northern Late Neolithic ring pendants also occur in Yorkshire (Lockton Pasture, Beck and Stone, 1935, 213; Bowlby, Elgee, *Early Man*, Pl. XVIII, fig. 2). A bone example was found at Stanton Harcourt, Oxon. (Grimes, *Oxoniensia* 1944, 34–44) with a debased B Beaker. Cf. *DO* II, 616–619.

angular end-plates also occur (cf. *DO* II, 130), and it is difficult to believe that such necklaces have nothing at all to do with the British spacer-plate necklaces in amber and jet. There is nevertheless a considerable chronological gap, since the Danish spacer-plate necklaces are confined to the Early Neolithic. And the workmanship of the British necklaces is very different; the British spacer-plates being smaller and more carefully shaped. Elaborate borings such as occur on spacer-plates from Lake (Piggott, 1938, Pl. X); in Greece at Kakovatos (Merhart, 1940, 99); reportedly in as yet unpublished Mycenaean Shaft Graves older than those excavated by Schliemann (Milojcic, 1955, 316 ff.); and in graves of the developed Tumulus Bronze Age and later in Southwest Germany (Merhart, *ibid.*; Hachmann, 1957, 1 ff.) are not known in Denmark. According to Ap Simon (1954, 49) amber spacer-plates in Britain cannot be dated before the transition from Wessex I to Wessex II. A rectangular spacer-plate appears in the Breton Dagger grave from St. Fiacre in Morbihan (Piggott, 1938, fig. 6) which, with its imported metal-hilted dagger, might be slightly earlier; though the dagger is admittedly atypical and debased (cf. Sandars, 1950, 54). Schranil (1928, *Taf.* XXIII: 33) illustrates a rectangular spacer-plate, apparently with two parallel borings, from Unětice. Some of the amber beads found with the sun discs in the Knowes of Trotty in Orkney (*Inventaria* GB. 33) are evidently the product of the cutting-up of spacer-plates with complex boring.[1] Jet spacer-plates were found in a cist with a B3a Beaker at Parklaw, St. Andrews, but the grave appeared to have been disturbed, and Beaker and necklace might conceivably represent two different interments (see Crichton-Mitchell, 1934, no. 194, with references; also her Note 22).

Connections with Saxo-Thuringia or the Northern Unětice area are implied by another type of amber ornament, the halberd pendants (Hengistbury and Normanton; a third from Manton is not of amber) (Piggott, 1938, 84–85). The Manton and Normanton pendants were found in the same graves as gold-bound amber discs, and the third in a cinerary urn with Wessex-type ornaments at Hengistbury Head, Barrow I. While the halberd pendants were undoubtedly made by a Wessex craftsman, their maker must have been familiar with the metal-shafted halberds which were made only in the areas mentioned above, although traded examples reached Sweden, the Lower Elbe and Hungary. There is no certain evidence that any of the metal-shafted halberds reached Britain or Western Europe (but cf. above, p. 20). Our craftsman is likely to have seen his prototypes on the Continent, perhaps on a journeyman tour. Since the three graves in which the halberd pendants occur are likely to be contemporary, on the ground of the goldbound amber discs and other similarities (cf. Ap Simon, 1954) it is a fair assumption that they

[1] Further British parallels are cited by Piggott, *Inventaria* GB. 33 (Upton Lovel Gold Barrow, Wilts.; Oakley Down, Dorset).

were buried with their original owners, and the date for these graves can be applied to show that the Saxo-Thuringian Early Bronze Age or its Northern Unětice extension survived at least to the border of Reinecke B2.

The route or routes by which Jutland amber reached Britain cannot easily be determined; equally good arguments can be adduced for direct trade by sea with North Jutland, overland trade across North Germany and the Netherlands, or indirect trade *via* the great *entrepot* in the Saale valley and the axe-and-halberd route through Westphalia. The problem is best discussed in connection with other traded goods, so we shall return to it in Part II. It seems clear from the astonishing concentration of British amber finds in the Wessex area, and their rarity elsewhere in the British Isles, that the wealth of Wessex constituted a rich market which was deliberately sought out by traders from distant areas. The dissected spacer-plates from the Knowes of Trotty, and the amber beads found in a secondary grave in the Mound of the Hostages at Tara by O Riordain (1955, 163 ff.) (the only Early Bronze Age amber find recognized in Ireland)[1] presumably represent secondary trade from Wessex.

LIST OF AMBER FINDS OF THE BELL BEAKER AND SINGLE GRAVE BEAKER CULTURES IN SCHLESWIG-HOLSTEIN, NORTHWEST GERMANY AND THE NETHERLANDS

Schleswig-Holstein

Struve

(*Kat.* No.)

657. Kr. Schleswig. *Gross-Dannewerk. Grabh.* 2. Four small cylindrical beads.
578. Kr. Rendsburg. *Grossenbornholt.* Ground grave. Two beads (lost), Kl battleaxe, strikealight, etc. (Bell Beaker with three doubled zones under same barrow, on ground level, under small stone cairn: Struve, *Taf.* 21: 6; – Abercromby I, No. 45, Cont.).
768. Kr. Segeberg. *Tensfelderen.* Grave 4. Fragment of cylindrical bead, Type VI flint dagger, undecorated degenerate Single Grave Beaker.
772. Kr. Segeberg. *Wahlstedt,* Segeberger Staatsforst. Lower Grave. Beads, Bl battleaxe.
776. Kr. Segeberg. *Wittenborn.* Lower Grave (flat). Round beads (damaged), herringbone Beaker.
792. Kr. Segeberg. *Kaaks.* Lower Grave? Amber pendant, herringbone Beaker. Struve, *Taf.* 14: 9.
572. Kr. Rendsburg. *Fockbeck.* Lower Grave. A3 battleaxe, ring-shaped amber bead, flint flake. Struve, *Taf.* 2c–e.

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[1] But it may be suggested that the find from Cruttenclough near Castlecomer, Co. Kilkenny, with biconical gold beads compared by Armstrong (1933, 41) with Wessex Culture parallels, tubular gold beads (known in bronze from several Early Bronze Age finds in Britain *i.e.* the Migdale hoard), and ribbed tubular beads (also known in tin and bronze from the same period), as well as amber beads of unspecified form (Armstrong, *ibid*, 41, 90, Pl. XIV; 242 and 244) would be at home in this period.

164. (Bog find). Kr. Flensburg. *Satrup.* 32 cylindrical beads, two round discs. Part illustrated, Schwantes, 1939, 235, *Abb.* 300.
(Stray find). Kr. Segeberg. *Kaaks.* Amber battleaxe, in form imitating late Upper Grave or LN axe (Struve). Schwantes 1939, 264, *Abb.* 341.

Northwest Germany

Kr. Stade. *Heinbockel.* Lüdke, *Stader Jahrb.* 1950, 7 ff.
Kr. Uelzen. *Melzingen. NNU* XVII, 1948, 35, *Abb.* 25a, b.
Kr. Bremervörde. *Twistenbostel.*
Kr. Oldenburg. *Neerstedt.* (Amt. Wildeshausen). Amber V-bored button, small beads, Bell Beaker, wrist-guard, barbed and tanged arrowhead. Schroller, *Oldenburger Jahrbuch,* 1933, 105 ff.; Stegen, *NNU* XVI, 1942, 52, Abb. 9.

Netherlands

Bursch No.
W. 8. *Ede.*
Vel. 15. *Hilversum.* H. I. Remouchamps, *OM* IX, 1928, 64 ff.
Vel. 26. *Wageningen.* H.I. V-buttons, Veluwe Beaker. Remouchamps, 1928, *Afb.* 44.
Vel. 39. *Apeldoorn.*
Vel. 49. *Garderen.* H. III. *Grand Pressigny* dagger, small thickbased flint axe, etc., barbed-wire Beaker sherd. Bursch, 1933, *Abb.* 67.
Vel. 50. *Garderen.* H. IV. Cord-wrapped Beaker, *Grand Pressigny* dagger, battleaxe, small thickbased flint axe, amber beads.
Vel. 66. *Uddeler Meer. Fund* V. Globular beads, Veluwe Beaker, hollowbased arrowhead. Bursch, 1933, *Taf.* III: 6, VI: 31, 33–36.
N. 16. *Odoorn.* Amber beads, Bell Beaker, copper spiral, gold, etc. Van Giffen, *Bauart,* 166; *Van Giffen Gedenkboek,* 1947, Pl. 77, *Afb.* 25.
N. 45. *Harendermolen.* V-button, biconical bead with diagonal perforation, wrist-guard, flints. Van Giffen, *Bauart,* 40–43, 44–45 (*Hauptgrab*).
also: *Aalden.* H. III, Gem. Zweeloo, Drenthe. 36 amber beads, with all-over corded Beaker. Van Giffen, *NDV* 1940, 203 ff., Afb. 27.
From Beaker-culture grave, but without Beaker: *Lettensche Berg,* near Ede, Gelderland. V-bored button, fragments of two others; tanged dagger with rivet in tang, small flint flakes. Unpubished; Mus. Leiden 1936/1.91–5. Information from W. Glasbergen.
See also the *Oostereng,* Bennekom, Gelderland find (Chap. XVIII); lost amber bead, probably with Veluwe Bell Beaker, gold ornament.

B. SEGMENTED FAIENCE BEADS

Two finds of segmented faience beads within our North European area on the Continent may be mentioned as probably the result of secondary trade from Wessex.

To the well-known find of four segmented faience beads at Exloo, Gem. Odoorn in the Netherlands, which also included beads of amber and tin (Beck and Stone, 1935, 221, 243) can now be added a single blue faience bead from Northwest Jutland. It was found in a megalithic cist, unfortunately without accompanying grave goods of any kind, at Fjallerslev, Outrup s., on the island of Mors in the Limfjord, and has been fully described by Becker (1954, 241 ff.). The bead, with five segments and a large perforation, corresponds very closely in appearance

with the 'normal' type of blue segmented faience beads found in Britain. An Irish flat axe comes from Fredsø on the same island, some 7 or 8 km from Fjallerslev (p. 29). The cist in which the bead was found is described by Becker as a type common throughout the *Aeldre Bronzealder;* a Late Neolithic date of construction is not entirely excluded.

It seems entirely natural to connect the Fjallerslev bead with the amber trade; one is only surprised that there are not more such beads in North Jutland.

Amber appears with the segmented faience beads in the Exloo find. The 14 amber beads include simple globular and cylindrical forms, more or less rectangular pendants, and one crescentic bead with a single perforation. The tin beads from the Exloo necklace are often compared with a now lost example from Sutton Veny, Wilts. (Hoare, *Ancient Wilts.*, I, 103, Pl. XII); the tin itself is presumably Cornish.

The dense concentration of 'normal' segmented faience beads in Wessex, with only one or two isolated finds in areas such as Cornwall, Sussex, Kent, East Anglia, North Wales, Yorkshire and Derbyshire (distribution map Beck and Stone, 1935, fig. 3) corresponds to the similarly marked concentration of amber finds in Wessex. According to Ap Simon the segmented faience beads do not occur in the graves of Wessex I, but only in Wessex II. Some have been found in cinerary urns conventionally dated to the Late Bronze Age, although I. F. Smith (with the present writer, 1956) suggests that there are good grounds for believing that such urns had appeared before the end of the Wessex Culture. In any event, it appears that the 'normal' segmented faience beads 'are likely to have been imported at one time, or to have arrived in a closely spaced series of shipments from one source.'

In Western Europe outside our area such beads are very rare; examples being known only from Parc Guren, Morbihan (Beck and Stone, 1935, 242–3) and from Fuente Alamo in Spain (*Ibid.*, 221); the latter being attributed to the El Argar culture. Additional finds have listed by Stone and Thomas, 1956, 37 ff.; with a full review of the faience bead material. Widely separated from these in space, and in the opinion of Continental authorities earlier in time, are segmented faience beads found in eastern and central Europe: in Hungary, forming, according to Milojcic, an 'import horizon' in Toszeg B, which he equates with Perjamos and Early Unětice; (Milojcic, 1953, 277); in Moravia in Unětice contexts; in Lower Austria, one example at Leopoldsdorf (Willvonseder, 1937, 88 ff., discussed by Pittioni 1954, 277), placed by Pittioni in his Ragelsdorf-Oggau-Loretto group at the end of the Late Neolithic, contemporary with late Bell Beakers; in Poland (Sulimirski, 1948, 124) in the Tomaszow and Southeast Polish Barrow Grave cultures, the lower limits of which extend, according to Sulimirski, into the Unětice period.

If, as seems probable, the Exloo and Fjallersev segmented faience beads were obtained in Britain, it seems on present evidence that they must be supposed to have arrived during Broholm's *Vor forste metalkultur* or somewhat later.

CHAPTER XVI

SUN DISCS

(Pl. XVIII; fig. 38, 39; Map XVI)

The golden sun disc, symbol of a Bronze Age cult or religion common to the British Isles, Northern Europe and wider areas as well, plays a prominent and continuing part in our story. The 'sun disc idea' has often been claimed to be of Irish origin, and its diffusion in the form of gold discs, and its translation into the most diverse media – rock carvings in Scandinavia, wheel-headed and disc-headed pins in North Germany and Central Europe – attributed to an emanation from the El Dorado of the West. Perhaps this is true; but the 'sun disc idea' can be shown to have a respectable antiquity in Northern Europe, going back beyond the time when sun discs can be shown to have been known in Ireland. In fact, it is possible to suspect that the idea itself first reached Ireland from the North.

The golden sun discs were studied by Jacob-Friesen (1931) who divided them into two classes. The earlier, Class I, discs are small (less than 12 cm in diameter) and are usually perforated in the centre. The later type, Class II, is larger than 12 cm in diameter and without perforation. Actually, some smaller discs found in the British Isles (*e.g.* the discs from Mull and the Irish disc, *BM LPA* fig. 14, upper: 6) are from their decoration and technique, clearly not earlier than the Middle Bronze Age, and are more usefully grouped with Class II than with Class I.

A. CLASS I SUNDISCS, THEIR PROTOTYPES AND IMITATIONS

The Class I sun discs were further divided by MacWhite (1951) into several sub-classes on the basis of their ornamental motifs. The number of examples assignable to each sub-class is so small that the use of the classification does not seem necessary in the present context. The Irish Class I discs possess varying combinations of cross patterns and concentric circles of lines, zigzags and punched dots; some have 'ladders' arranged either as crosses or circles. Most have a pair of perforations in the centre; one is unperforated; one from Kirk Andrews, Isle of Man, has two perforations close to one edge. The four discs from the Knowes of Trotty, Huntiscarthe, Orkney (*Inventaria* GB 33) each have or have had a single large per-

foration in the center. Some gold discs from Wessex Culture graves with two holes in the centre appear to have served as the base of gold-capped cones. Small Wessex discs from Lake are unperforated; how these were mounted is uncertain. A special feature of the Irish-British discs is their occurrence in matched pairs. A pair of small discs was found in a grave with a Wessex B1 Beaker at Mere Down near Gillingham, Wilts. (Abercromby, 1912, I, Beaker No. 19, tanged dagger and discs O. 8; Stone, 1958, 83, 105, Pl. 18).

A second Wiltshire grave find of a similar small disc is from Monkton Farleigh (Stone, 1958, 83, 105, Pl. 17); (private possession; copy in Devizes Museum; information from L. V. Grinsell), and this was perhaps also a Beaker grave. Irish-type sun discs have also been found in the Iberian peninsula, in one case (Cabaceiros) with a gold lunula (MacWhite, 1951, 50); MacWhite also cites a find from Brittany; Giot, 1960, 64, refers to several).

No actual gold Class I sun discs have been found on the Continent in our North European area; but related discs occur in copper and baked clay; these can be regarded as imitations of the scarce and expensive golden articles.

The related North European discs occur in Denmark and Poland. The first is a fragment of an arsenical copper disc excavated in 1946 from a flat grave under what may have been a ploughed-out long mound at Salten, Tem Sogn, near Silkeborg in Jutland (Becker, 1947, 253 ff., figs. 52–54; *DO* II, 139; Otto and Witter, 1952, 69). The disc appears to have been a circular one, of which about a third survives, originally about 7 cm in diameter, of thin hammered copper. It is ornamented along the edge with a single row of small hammered-up bosses. A line of similar bosses runs radially from what would have been the centre of the complete disc, suggesting that it would have had a cross pattern. There is a single small perforation near the presumed centre; Glob reconstructs it (*DO* II, No. 139) as having had two central holes much in the manner of the Irish sun discs.

Becker compares the Salten disc to the copper ones from the Danubian Neolithic cemetery and settlement site at Brześć Kujawski in Poland (Jazdzewski, *W.A.* 1938). One of these, from Grave XXXIV, is circular and has two pairs of perforations placed close to the edge; it has a circle of small embossed dots around the edge like the Salten disc, but the centre is decorated with three larger bosses arranged as a triangle. A second Brześć Kujawski disc (found in the settlement occupation layer) is triangular in shape, with a single perforation in one corner; it also has an edging of embossed dots.

The copper discs of Salten-Brześć Kujawski type are derived from the copper and gold discs such as the ones known in the Southeast European hoards of Habasesti (Rumania) and Stollhof (Near Wiener Neustadt, Lower Austria) (cf. now, most conveniently, Driehaus, 1960, 165 ff., *Abb.* 6: 1–6, with further references). These discs are considered, in the most recent view, to be products of the Bodrog-

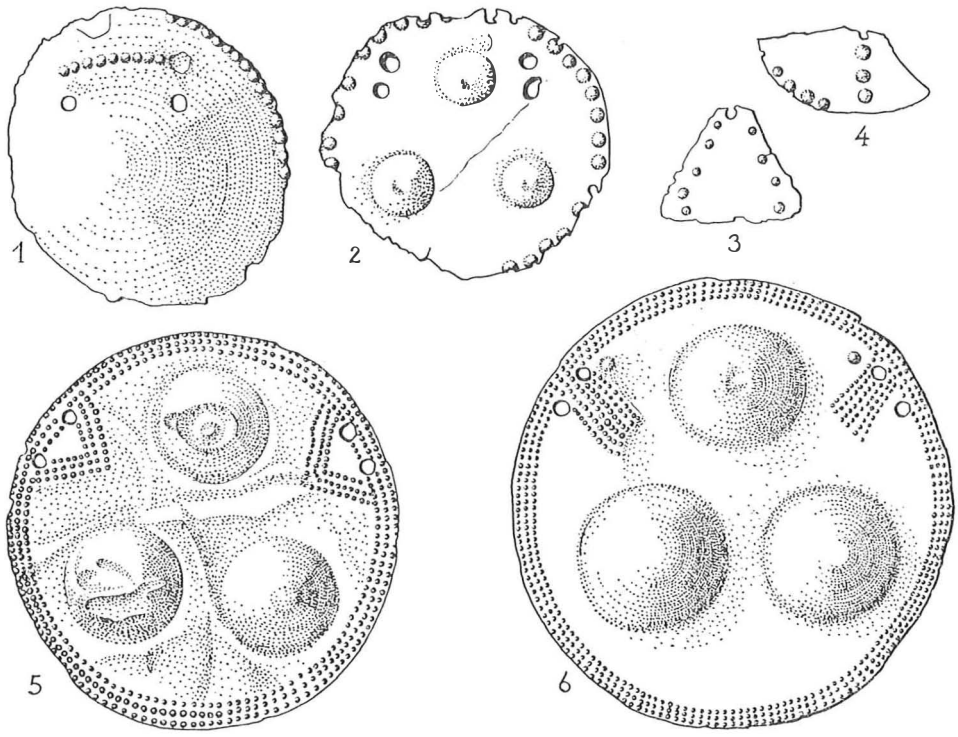

Fig. 38. Discs of sheet gold or copper from the Continent. 1 Habasesti, Rumania; 2 Brześć Kujawksi, Poland; 3 Stollhoff, Austria; 4 Salten, Jutland; 5 Hungary. c. 5: 12. After Driehaus.

keresztur culture. They were traded northward to the Jordansmühl culture and even to Jutland. The Salten grave is dated by Becker to Northern Late Neolithic C; it contains thin-butted axes, transverse arrowheads, and Early Neolithic types of amber beads.

The gold disc from Kirk Andrews in the Isle of Man is unique in the British Isles in having a pair of perforations at the edge rather than at the centre; and it is decorated with three concentric rings of fine embossed dots at the edge, recalling the two rows of similar dots (but more closely spaced) on the Stollhof gold disc. It is without linear decoration. It seems probable therefore that the Kirk Andrews disc is derived from the Stollhof type. It could be an actual import (suggested by the absence of direct parallels in Ireland) or an Irish imitation (suggested by the absence of bosses in the centre and also the single pair of edge-perforations; the Stollhof and Brześć Kujawski discs have two pairs). In either case very far-flung trade contacts are implied, even if one declines to think in terms of direct trade between Ireland and Transylvania, which are a long way apart. A few objects of 'Hungarian-Jugoslavian' copper (JSS Group Eoo) occur in Ireland (Coghlan and

Case, 1957, nos. 77 (unfinished thickbutted axe, unlocalized), 81 (Trillick, Co. Tyrone, anomalous oblong axe; 80, a bevelled axe, and 82 and 83, bronze halberds, are presumably much later). If the Kirk Andrews disc is of Irish manufacture, it carries with it the implication that gold-working was being carried out in Ireland at a time corresponding to, or very little after, Jordansmühl and Salten, which is considerably earlier than any conventional dating of the Bell Beaker migrations.

Another copper disc, from Nieder-Kränig, Kr. Königsberg (now pow. Chojna) just east of the Oder, brings us typologically closer to the Irish cross-and-circle sun discs. (Bohm, 1935, 25, 103, No. 22; *Taf.* 7: 18; Buchholz, 1925, 100–101). It is decorated with a double-armed cross, and with a double circle at the edge, in fine embossed dots. Although broken into several fragments, the disc as reassembled is nearly complete. A small missing portion at the centre deprives us of the knowledge of whether it had central perforations. (That it had a central boss like the Unětice discs from Bohemia and like one from Kiebitz near Mügeln cited by Bohm (1935, 25) seems impossible). It may be regarded as a further development of the type represented at Salten; the absence of linear ornament distinguishes

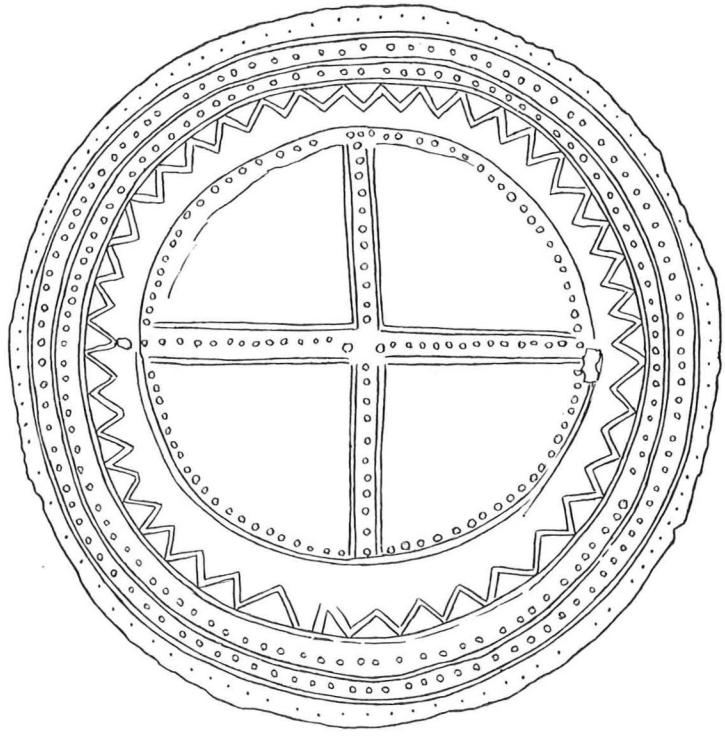

Fig. 39. Gold disc (one of a pair) from Co. Wexford, Ireland. c. 1 : 1. After Armstrong. Cf. Pl. XVIII!

it from the Irish cross-and-circle sun discs. The Niederkränig disc was found with a cylindrical arm-spiral and a rather battered flat copper axe, the original form of which is not easy to make out. But the combination of flat axes and arm-spirals occurs also in the Bygholm hoard in Jutland, dated to the beginning of the Northern Middle Neolithic; therefore the Nieder-Kränig hoard could also be supposed to belong to the first half of the Middle Neolithic.

Our next find is a baked clay disc or 'pot lid' found in a megalithic grave at Bognaesgaarden, Herslev S., Sømme H., near Copenhagen (Pl. XVIII; original publication *APM* I, Pl. 45: 22; p. 55–56; photograph *DO* II, 191). This flat and circular disc, 11 cm in diameter, has impressed on one face what can only be described as a remarkably good imitation of a sun disc pattern. It has a cross pattern, the arms of which are formed of two parallel lines of small circular impressions; around the edge of the disc is a double circle of similar impressions, and within these a zigzag circle formed of impressed strokes. In size and pattern it closely resembles the pair of Irish gold sun discs from County Wexford (fig. 39; Armstrong, 1933, figs. 432–433). The Wexford discs have a central cross formed of a single row of tiny bosses or points flanked by lines, and the edge motif has lines as well as points parallel to the edge; these lines are missing from the Bognaesgaard disc, but otherwise one might well be a copy of the other. Another very striking feature of the Bognaesgaard disc is that at its centre there are two impressions which are noticeably wider and deeper than the impressions of which the rest of the pattern is composed, and these impressions correspond exactly in their position to that of the central perforations on the Wexford and many other Irish sun discs.

Again, a clay disc of the same general type from Nebel, Amrum, has four actual small perforations in the centre, like those of some Iberian and Breton gold sun discs. The ornament of the Nebel disc consists otherwise only of a simple radial pattern of impressions. It was found in a megalithic tomb, *Riesenbett* 212, *Steingrab* II (Kersten and La Baume, 1958, 141–2, *Taf.* 15: 14).

We do not wish to claim that all clay discs of the Bognaesgaard-Nebel type, broadly speaking, are sun discs. It is clear that the clay discs (frequently described as potlids in the Northern literature) have a long history in the Funnel-Beaker culture; related discs have been found in settlement sites of the Vlaardingen Culture in Holland (*Helinium* II, 1962; 3 ff); and, as Becker has pointed out, they are related to the 'baking plates' of the Michelsberg culture. Their original function does not particularly concern us here. We are, however, convinced on the basis of the really startling resemblance between the Bognaesgaard and Wexford discs that on at least one occasion a Funnel-Beaker potter deliberately made a clay disc to resemble a metal sun disc which he had actually seen. This resemblance is, be it noted, far closer in detail than any of the cases hitherto cited in the literature between sun discs of different materials. It is also interesting to note

that some of the characteristic decorated clay ladles of the Northern Middle Neolithic have 'ladder' cross motifs which resemble those on some Irish gold sun discs; for example, the ladle from Stenseby, Bornholm (NMC, A 33412), with a very sun disc-like ladder cross surrounded by a zigzag circle. One could indeed make out a case, without much difficulty, of deriving the style of the Irish cross, circle and zigzag sheet-gold sun discs from the *Tiefstich* style of pottery decoration, as represented on the clay discs and ladles of the Funnel-Beaker culture. One the other hand, the Bognaesgaard disc, with its central impressions imitating the perforations of discs of the Wexford type, strongly suggest that the Bognaesgaard potter had seen, and was directly imitating, a golden disc of Wexford type.

In defining the sub-periods of what we now call (after Becker) the Northern Middle Neolithic, Mathiassen (91 ff., fig. 9) pointed out that 'potlids' without a central perforation, and sometimes decorated, were prominent at Troldebjerg, less common at Blandebjerg, and rare at Trelleborg; while at the later sites of Bundsø (MN III) and Lindø (MN IV) the discs without central perforation had disappeared altogether. On this basis, it could be presumed that the Bognaegaard disc, an unperforated specimen, belonged to the first half of the Middle Neolithic, and was not later than MN II. On the other hand, the Nebel disc was found in a megalithic chamber with pottery of MN IV as its earliest accompanying material. On the British side, the well-known grave from Mere Down, Wiltshire contains, along with a Bell Beaker early in the Wessex series, a pair of gold discs which in character and style of ornamentation are much like the County Wexford ones, although considerably smaller. It will, therefore, provide, when the dating of the Bognaesgaard disc in Scandinavian terms is fully clarified, a useful synchronism between the early British Bell Beakers and the Scandinavian chronology.

The sun disc from Moordorf near Aurich, published by Jacob-Friesen (1931, *Taf.* I) lacks close analogies either on the Continent or in Britain. Typologically it appears to lie somewhere between the Wexford type and the Middle Bronze Age sun discs. The character of its decoration is more like the former; but it has a large central boss, and its rim attachments suggest the later type. Central bosses are a feature of copper or bronze Unětice decorative discs, but in Ireland they appear on the gorget terminals (Armstrong, 1933, Pl. VIII–X) which in style are related to Northern Period II/III types. The workmanship of the Moordorf disc is perhaps more likely to be Irish than Northern; because of its typologically intermediate position one could perhaps assign it to the Late Neolithic or to Broholm I, though this is little more than a guess.

In summary, we suggest that the ultimate prototypes of the Irish sun discs are to be found in the Bodrogkerestur and Jordansmühl cultures; the idea may have reached Britain by way of Northern Europe before the end of the Northern Early

Neolithic. These earliest sun discs are characterized by edge-holes rather than central perforations (i.e. they were worn as pendants) and embossed dot decoration rather than lines. The Salten disc suggests that the cross pattern and central perforations might already have been known on the Continent at this time. Certainly by the second half of the earlier Northern Middle Neolithic, linear crosses, zigzags and ladder patterns had appeared on the sun discs, combining the older sun disc decoration with new motifs from the *repertoire* of the Megalithic potters, who also made other ritual objects in a similar style; at least one potter seems actually to have copied a metal sun disc in clay.

B. CLASS II SUN DISCS

Jacob-Friesen's monograph (1931, 25 ff.) demonstrated in detail the close relationship between the Irish and Northern sun discs of his Class II. Most of these are larger than the Early Bronze Age Class I sun discs; they are characteristically decorated with compass-drawn or punched concentric-circle motifs, and usually consist of gold leaf mounted upon a bronze or other backing. The essential unity of the tradition in Ireland and Northern Europe is proven not only by the general similarity in style and form of the sun discs in the two provinces but by such a detail as the two pierced lugs at the edge of the bronze disc from Ireland (*B.M. BAG* fig. 117), which correspond closely to those of the famous Trundholm disc[1].

The number of finds of Class II sun discs in the two provinces is approximately equal; Althin (1945, 190 ff.) lists, apart from the stylistically earlier Moordorf disc, six finds in South Scandinavia and Schleswig-Holstein (Jaegersborg, Zealand, Broholm, 1943, 45, Grav 191; Tødsø, Morsø Nørre H., Jutland, *Ibid.*, 72, Grav 578; Sønder Tranders S., Fleshum H. Jutland (*Ibid.*, Grave 607); Trundholm (Ods H., Zealand, *Nordiske Fortidsminder*, I, 303 ff.); Tagaborgshojden, Scania (Althin, 1945, *Abb.* 101); Glüsing, Kr. Norderditmarschen (Jacob-Friesen, 1931, 36). In the British Isles five finds are known (Ireland, *B.M. BAG* fig. 117; Lattoon, Co. Cavan, Armstrong, 1933, 47–9, fig. 17; Ireland, *B.M. BAG* fig. 119; Mull (*PSAS* LXVIII,

[1] Althin (1945, 190) draws attention to a probable Swedish parallel to the Trundholm chariot, found at Tagaborgshojden, Hälsingborg, Scania. The find includes *two* bronze horses, less elegant than the Trundholm horse but evidently in the same style; the old find account mentioned 'fragments of a small wagon and a bronze disc of the size of a spade blade', though these are not preserved. There are also three palstaves and three spearheads in the find, which date it to Montelius II. Cf. Drescher, *Acta Arch.* XXXIII, 1962, 50–1, *Abb.* 5.

191–2); Lansdown, Somerset (reconstruction *B.M. BAG* fig. 91). Two of the Danish discs (Sønder Tranders and Tødsø) survive as unreconstructed minute fragments and the Swedish disc is lost; the Lansdown reconstruction is regarded as hypothetical by Powell (1953) but the fragments certainly show boss-and-ring ornament and ribs.

The discs from the British Isles are smaller than the Northern ones; Lansdown, the largest of the British specimens (reconstructed as c. 17.5 cm in diameter) is slightly smaller than Glüsing, the smallest of the Northern discs. The Lansdown fragments have lent themselves to reconstruction as a fairly close although smaller replica of the Jaegersborg disc. Two of the Irish specimens (*B.M. BAG* fig. 117 and Lattoon) have filled-triangle decoration which is not matched in the Northern series; the broken pattern of the Lattoon disc is a unique feature. The small disc from Ireland (*B.M. BAG* fig. 119) is very close stylistically to the Irish gold box covers and gorget terminals, but also to the Continental gold bowl style. If the Trundholm disc, with its spiral ornament, was made in Northern Europe, the Lattoon and Mull discs and the Irish disc *B.M. BAG* fig. 117 were equally certainly made in Ireland; the other two belong to a style common to Ireland, Northern and West Central Europe which, as Kimmig (1948–50) very plausibly suggests, may have been practised by itinerant goldsmiths who in each province made up ornaments in forms corresponding to local preferences.

The Northern sun discs are all dated by style (Trundholm) or by associations to Broholm II (cf. most recently Althin, *op. cit.*). Of the Irish discs, two (Lattoon, Mull) are associated with other gold ornaments of advanced Late Bronze Age types (a lock-ring of triangular section and dress-fastener on Mull, penannular rings with trumpet-terminals at Lattoon). *B.M. BAG* fig. 117 is related to the Trundholm disc by virtue of its lugs, but its ornament is more devolved and it may be later. *B.M. BAG* fig. 119 has cord ornament, which, as Powell notes, is unknown on Continental goldwork before Montelius III; the style, as Brohom (1948) emphasizes, is a long-lived one, persisting throughout the Late Bronze Age, and close dating is therefore difficult. The Lansdown disc, despite the uncertainty of its reconstruction, might be considered to be the earliest of the Class II discs in the British Isles if its analogy with Jaegersborg has any validity. It was found in a cist grave in a barrow, with fragments of cinerary urns (*B.M. BAG* 89–90); it is tempting to associate it with the Northern current, strongly felt in Somerset, in our Taunton-Barton Bendish phase.

Related objects also occur in Central Europe, as the goldcovered disc from Mühlau Grave 1 in the Tyrol (Childe, 1948, Pl. XV, 1: 6), dated to the earliest phase of the Tyrolean Urnfields (D2 to Childe, HaA to Kimmig) and Worms on the Rhine (connected by Mozsolics, 1950, with Velemszentvid, which she dates to HaB, by the wire-wound technique of its edging). Related discs in horn, scattered from Italy to Hungary, are discussed by von Mer-

hart (1930, 118). Influences from this quarter undoubtedly played a part in the evolution of the style of the Northern and Irish sun discs and related forms of metalwork; but on present evidence their relation to the Irish sun discs is less direct than the relation to Northern Europe.

With three of the five Class II sun discs in the British Isles dated by associations or style to a time later than that of the Northern discs, the probability of an Irish origin for the type becomes very small indeed, and the Class II sun discs may confidently be included in the list of Northern Middle Bronze Age influences on the British Isles.

Note. Reference may perhaps here be made to two North European finds of thin gold 'bar style' penannular bracelets of Northern Neolithic date, which may possibly be of Irish origin. Both have very slightly expanded ends, and resemble a type quite common in Ireland (Armstrong, 1933, Pl. XVII), though the examples there are supposed to be all of Late Bronze Age date One Northern specimen comes from Himmelpforten, Kr. Stade, between the Oste and the lower Elbe (Cassau, 1933, 50, *Taf.* III*b* and V*a*, *b*; 1936, 22 ff.). It was found in Grave I of a Funnel-Beaker (TRB) flat grave cemetery; its date ought to be within the Northern MN. The second example is from Schwesing, Kr. Husum, on the North Frisian mainland (Hinz, 1954, 190–1, *Abb.* 36*a*, *Taf.* 15: 16). It lay close to one of the stones defining the margin of a 26 m. long rectangular chambered mound.

CHAPTER XVII

LUNULAE

(List, p. 185–6; fig. 40; Map XIV)

Five gold lunulae have been found in our North European area: three in the Danish islands (Zealand two, Fyn one), one in the German province of Hanover, and one in Belgian Luxembourg. All five are evidently closely related to the Western European gold lunulae represented so numerously in Ireland (more than 60 examples), Cornwall (four), Wales (one), Scotland (five or six), Atlantic France (six plus) and the Iberian peninsula. In addition, a number of copper or bronze lunulae have been found in North Germany (five examples) and Bohemia (one), and have been claimed as imitations of imported gold ones. The Northern gold lunulae are all stray finds; the copper or bronze ones however occasionally occur in graves and hoards, and might be of some help in fixing our notoriously association-poor gold lunulae in their chronological place. But the interpretation of these finds in terms of trade and cultural relations is by no means as simple as the mere plotting of them on a distribution map has suggested in the past.

a. Gold Lunulae

That the Danish gold lunulae differ significantly in form and details of workmanship from the typical Irish ones has been pointed out by Hardy (*PPS* 1937, 465). Indeed, none of the five examples in our area posesses the rich geometric ornament in tracer technique which is found characteristically on most of the Irish specimens, the bulk of the British and some at least of the French finds. One of the Danish examples, from Grevinge, Zealand, is completely undecorated, and of course undecorated lunulae do occur in Ireland (e.g. Armstrong, 1933, Pl. III: 15, Pl. VI: 51; the former without exact provenance; the latter at Trenta, Co. Donegal, said to have been found with a large flint arrowhead: Armstrong No. 31, p. 56). The common feature of the other two Danish lunulae and those from Belgium and North Germany is linear groove decoration parallel to the edges. The lunula from Fredensborg, Zealand, an extremely and atypically narrow example, has two grooves along its outer edge (a slight ridge having been pushed up between them) and a single groove along the inner edge. The specimen from Skovshøjrup, Fyn (fig. 40),

has two grooves contained by three slight ridges at the outer edge, and three grooves and faint ridges at the inner; it also has a band of four grooves along the centre. The lunula from Schulenburg, Hanover, has three grooves at the inner edge and two at the outer. Hardy describes the grooves of the Danish specimens as 'traced', and the presence of faint ridges between them suggests that the material in them had been forced out; but it is important to note that the grooving is quite different in character from the linear ornament that occurs on Irish lunulae. The traced lines of the Irish lunulae are very fine and narrow, and the marks of each individual tracer stroke are distinguishable. On the Danish lunulae, however, the lines are much broader and deeper, and have the appearance of continuous furrows; no tracer strokes are visible.

Grooving of the latter character occurs, however, on one of the two lunulae found at Harlyn Bay, Cornwall (allegedly with a flat axe of developed type; Bullen, 1912, Pl. 22; Smith, 1922, 93 ff., fig. 1–3). It has four such grooves along its outer edge and three along the inner; the inner series of grooves is lined, however, with a single row of small carets. In the outer series of grooves the innermost groove ceases some way from each terminal and is replaced by a row of carets which continue to the terminals. There are no end-panels. (The second Harlyn Bay lunula is of the more richly-decorated Irish type, Class III in Craw's classification[1].)

A Scottish lunula, from Coulter, Lanarkshire, may also be cited here; it too is margined with linear grooves, without decoration inside, and lacks end-panels. Some of the grooves, however, are embellished with punched dots, a feature occurring on the Welsh lunula from Llanllyfni and some Irish examples. Finally, a lunula from Kerivoie, Côtes-du-Nord, though broad like the Irish lunulae, is decorated in the edge-grooving style, without panels; there is a row of carets along the inner edge as on the Harlyn Bay example already cited. The shape of the terminals, from Lantier's illustration (1948, fig. 21) is unlike any of those we have described; its triangular shape recalls the triangular end-pieces of the jet necklaces with which the lunulae are often compared.

The two decorated Danish lunulae are also distinctive in that the grooves continue on to the terminal plates, and form a rhomboid pattern. The shape of their terminal plates is also unlike any others, being straight-sided, more elongated and narrow. The terminal plates of the Skovshøjrup and Grevinge lunulae are rounded at their ends, while those of the Fredensborg one are pointed. These features mark

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[1] Craw (*PSAS* LXIII, 1928/9, 175) divided the Anglo-Irish lunulae into four classes on the basis of their degree of resemblance to the arrangement of the Poltalloch-type jet spacer necklaces, with Class I most closely resembling the latter, and the other three forming a degeneration series from the assumed prototype. Fauvillers (his 61) is assigned to Class IV (the Vertical Design Type); three other French specimens (62–4) most closely resemble his richly decorated Classes I and II.

off the Danish lunulae from any of the others and support the view, first advanced by Déchelette, that they were made locally rather than being imports. The terminal plates of the Schulenburg lunula are of a shape not easy to match exactly; they swell out gradually and then expand into a broad T.

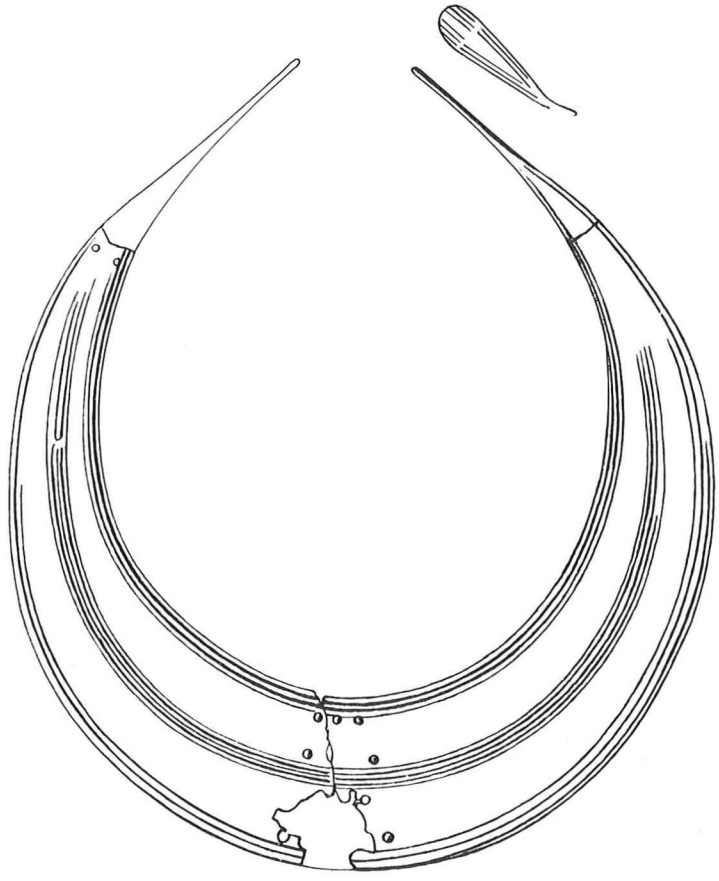

Fig. 40. Gold lunula from Skovshøjrup, Fyn. 1 : 2. After Montelius.

'The lunula from Fauvillers, Prov. Luxembourg, Belgium, has linear decoration only, but in addition to the edge lines there are distinct side panels, consisting of simple transverse parallel lines. There is no geometrical ornament. The shape of its terminals is more closely matched in the Irish than in the other Continental specimens.

Typologically it is possible to group the Kerivoie, Fauvillers, Harlyn Bay and Coulter lunulae as intermediate between the numerous Irish type and the rare Northern variety; having in common linear edge-grooving as their main ornament,

and end-panels absent or rudimentary. The largest of the Breton lunulae from the Kerivoie (C.-du-N.) hoard (Giot, 1960, 162, fig. 51b) appear to be related to these. It is these which are most closely related to the well-known Iberian example from Cabaceiros de Basto, Portugal (Bosch-Gimpera, 1929, fig. 40), with its series of grooves down the centre and simple edge-margins and plain panels outlined in fine *repoussé* points; although the Cabaceiros specimen is not very similar to any farther north. It was found, it will be recalled, with two small gold sun discs ornamented with concentric grooves; one of the discs has two small perforations in its centre like some British Beaker-period discs (see above, p. 167 ff.); the second has four such perforations arranged as a square in the centre. These are most closely paralleled by the Irish discs of MacWhite's Type Ic, of which concentric circle ornament is characteristic. If these discs are really derived from the British ones then their date could be as early as the Wessex B1 Beakers. The resemblances between the Cabaceiros lunula and the silver one from Villafranca near Verona in Italy (Forssander, 1936, *Abb.* 10; 44 ff.), which has *pointillé* edging and decorated end portions which might be regarded as rudimentary end-panels, and a small hole at each end for attachment like the Cabaceiros piece, might also argue for an early date; the Villafranca lunula was found in a grave with a copper halberd and a tanged flint arrowhead, and is assigned to the Remedello culture.

The associations of the gold lunulae in the British Isles are, as is well known, neither numerous nor secure. The Harlyn Bay, Cornwall, find includes the two lunulae already mentioned, one of Craw's Irish Class III type and the other which we have put in the edge-grooved group, and a flat axe; but Craw and other writers have regarded the association of the axe as far from certain.

Other not very useful associations are mentioned by Armstrong (1933, 10) and need not be repeated here; but Craw's argument for considering the lunula from Orton, Morays. as probably from the same interment as the basket-shaped earrings which were found in a cist in the mound (*PSAS* VIII, 1871, 28, LVII, 163) seems valid, and would point to a late Beaker/early Wessex date. The previously mentioned Breton hoard from Kerivoie combines lunulae with Orton-type neckrings (which are in turn related to basket earrings; see now Moucha, 1960, 465 ff., fig. 171) and a small headband.

Craw's identification of the lunulae with the spacerplate jet necklaces has been of greater weight in dating the Irish lunulae than the uncertain associations. The two types have complementary distributions; the lunulae are very common in Ireland, where spacer-plate necklaces are rare; in Scotland the few lunulae are distributed on the margin of the area of greatest concentration of the necklaces. Moreover, Clark (1932, 40–1) demonstrated that the combined lunula-jet necklace distribution coincides remarkably with that of Food-vessels; which agrees well with the evidence of the associations of necklaces (as given by Clark, twice with Beakers,

ten times with Food-vessels, once with a Cinerary Urn). Further, as Piggott has pointed out, some of the jet necklaces are ornamented with patterns imitating the effect of the complex borings of Kokavatos-type amber spacer-plates. The bulk of the Irish lunulae would then belong to the Food-vessel culture of the Early and Middle Bronze Age.

b. Copper or Bronze Lunulae

The copper or bronze lunulae and related collars from Central Germany and Bohemia have been discussed by De Navarro, Sprockhoff, Kleemann and Hachmann; but these authors come to widely differing conclusions concerning their origin and relation to the Western European lunulae.

Unique in some ways is the collar from Velvary in Bohemia (Schranil, 1928, 105, *Taf.* XIX: 1). It is lunate in form, but is not flat like a lunula; it has rather the form of the bronze collars of the Middle Bronze Age (so declares Hachmann, 1954, 95, 99 n12). Its ends are rolled to form cylindrical loops. According to Schranil it is made by hammering. The face is ornamented with two hammered-up ridges, one close to the inner edge, the other central; the outer edge has a row of double triangles. It is made of copper or tin-poor bronze, and was found in a cist grave, with pottery of Late Neolithic affinities but comparatively developed metalwork; its dating has therefore offered considerable difficulty. Mandera (1953, 192, n67; references there cited) places it early in the development of his Slany group (*Schlaner Gruppe*), which would be at the end of Early Unětice, while Moucha (1960) argues for an even earlier dating. Lunulae or collars are otherwise unknown in the Unětice culture proper.

We turn now to the German lunulae. The first example, regarded by Sprockhoff as the earliest of the group, is a stray find from Göttingen. It is a casting (not made by hammering) of thin sheet metal, and in shape quite like a broad Irish lunula; its face is decorated only with a faint ridge about a third of the way from the inner to the outer edge. The ends have been hammered out at right angles to the plane of the face to form long tapering terminal plates, which were then rolled to form loops. Sprockhoff describes it as 'evidently an imitation in bronze of an Irish gold lunula'.

Next come two lunulae found together at Bodenwerder, Kr. Hameln. Both of these have rolled terminals quite like the Göttingen piece. One has three ribs on its face, one of them nearly central and the other two fairly near the edges; they are not hammered up, but cast. The second Bodenwerder lunula is similar in shape, but the entire surface is flat and decorated with longitudinal herringbone rows divided by transverse rows of herringbone into four panels. This decoration resembles less anything found on lunulae than the tracer patterns found on many

Irish flat axes, with which Sprockhoff compares it. Irish axes with very similar herringbone ornamentation were demonstrably exported both to Denmark and Central Europe; but the same sort of decoration is also found on Central European axes which have nothing to do with Irish types.

The Göttingen and Bodenwerder lunulae finds constitute a 'Weser group' in South Hanover. Schulenburg is not far away, and Sprockhoff regards the Schulenburg gold lunula as a strong argument for deriving the Weser lunulae from the 'Irish' lunulae.

With the South Hanoverian lunulae Kleeman (*Germania*, 1953, 135 ff.) associates two others. One is a Brandenburg find, without more exact provenance than 'the Altmark'[1], which is closely comparable with the Göttingen specimen. It is cast, with a single midrib; the triangular terminals have been hammered out and fluted, and their ends rolled into loops. It was probably associated with two bronze rings; one a plain bar with oval section, of neckring size, and the other a flat bar with a single rib on one side, bent into the form of a bracelet with overlapping ends.

The other is the lunula (or rather, collar) from Oegeln, Kr. Guben in the Lausitz (Kleemann, *ibid.*; *Neues Lausitzer Magazin*, V, 1926, 211, *Taf.* 3, 1–16; Bohm, 1935, 26, 103 No. 16, *Taf.* 7: 13, 19), which is already known to the English literature through De Navarro's discussion of it (1951, 82). The Oegeln collar appears from Bohm's illustration to have had a margin consisting of one or more grooves; its face is divided into five panels by groups of transverse lines. From the photograph it appears not to have had terminal plates. The collar was part of a hoard, now lost, which included (according to old drawings reproduced by Bohm) ingot bars of the *Spangenbarren* type and three flanged axes, apparently of the 'Saxon' type. The *Spangenbarren*, rare in North Central Germany, are certainly imports from Central Europe, where they occur frequently in hoards.

The relations between the German lunulae, the Velvary one and the gold lunulae have been variously evaluated by the Continental writers. Sprockhoff saw the Weser group as direct imitations of imported 'Irish' lunulae, and implied that the Velvary specimen was an import from Germany. Kleemann on the contrary believes that the Velvary lunula is the prototype of the Weser group. Hachmann has a third view; he stresses the difference in technique of decoration (cast in the Weser group, hammered at Velvary) and believes that they are typologically distinct and unconnected. He maintains that the hammered loops of the Bodenwerder-type lunulae are derived from Unětice ingot torques, and that they may be as late as the Virring-Tinsdahl phase, but could also be much earlier.

Even Sprockhoff modified his view of the Irish origin of the German lunulae,

[1] Published independently by Hachmann, 1954, 92 ff.

asking (1940, 26) whether the concept of the 'Irish lunula' was not too narrowly based. 'Perhaps', he declared,

> 'it really has to do with a larger area which at the beginning of the Bronze Age possessed sheet metal collars as common property; an area including wide reaches of Central and Western Europe, in which the preference for collars found local expression, in Ireland in the form of the lunula, in South Hanover in the form of the Weser group, and in Bohemia with the Velvary collar. To these can be added the band from the Bornhög near Nägelstedt in Thuringia and the unique collar from Meckenheim in the Palatinate. But Switzerland also had the bronze collar at this time, as is shown by the little-known example from Bex. From Upper Italy one could point to the silver breast ornament from Villafranca; and with the corresponding Portuguese ornament we link up once again with the Irish lunula.'

This conception of a widespread lunula or collar fashion finding varying expression in different centres, has been further developed by Kleemann in a paper devoted to this theme. He regards the Irish lunulae as the youngest examples of this fashion, derived ultimately from the East Mediterranean. He follows Sir Lindsay Scott (1951, 59) in bringing the Northern gold lunulae from Atlantic France.

Having examined the North European lunulae and the recent expressions of opinion regarding the relationships among them, we may now attempt to summarize their implications for the problem of Anglo-Irish relations with Northern Europe. It appears, first of all, that it is no longer possible to regard the lunula *per se* as an Irish or Scottish invention; at least, there is no evidence for the assumption that any Anglo-Irish lunulae are necessarily earlier than those of Villafranca, Cabaceiros or Velvary. These lunulae, to which an early date can be assigned on the basis of associations, are comparatively simple in their decoration. The Cabaceiros association of a simply-decorated lunula with a pair of gold sun discs with Irish affinities suggests the possibility that the lunula *could* have reached Ireland as early as the Wessex B Beaker phase. In any case it seems probable that the more simply decorated type, which is common to the Iberian peninsula, Western France, Belgium, Germany, Denmark, Cornwall and Scotland, as well as Bohemia – though admittedly in only one or two examples in each case – is typologically the earlier. The Harlyn Bay find, however, shows that the two styles at least overlap, and some examples of the 'early' style may actually be late. Craw's typology, then, is not valid as a sequence. It is still possible, however, to regard the specifically Scottish-Irish style of elaborate lunula decoration as having been inspired by the spacerplate necklaces of jet or amber.

The elaborately decorated lunulae may have been exported from Ireland to Western France (it is not certain whether the elaborately decorated lunulae from Normandy and Brittany are of Irish or of local manufacture) but not, as far as present evidence goes, to Northern Europe. None of the elaborately decorated variety is securely dated. The Harlyn Bay flat axe is of the Migdale type, some examples

of which are certainly of Wessex age; in any case the association is far from certain. The Orton lunula, which Craw assigns to his Class I but which is comparatively simply decorated, is dated to Late Beaker-Wessex I by the basket earrings, if Craw's argument for believing in their contemporaneity be accepted. Such a date is, after all, not unplausible.

The Northwest European lunula group characterized by grooved decoration – to which belong the Kerivoie, Harlyn Bay, Coulter, Fauvillers and Schulenburg specimens – are without associations, except at Harlyn Bay. We have seen that they cannot be of Irish workmanship, but are certainly related to the Irish type, as is shown, for example, by the form of their terminals. Typologically they fall between Cabaceiros and Velvary on the one hand, and the elaborate Irish type on the other; a Wessex I date could be suggested with reserve on the basis of the Harlyn Bay find, and this dating can be supported by stylistic considerations. The characteristic feature of the type, as we have seen, is the use of a grooving technique; the lines are arranged in parallel bands, following the curve of the edges of the lunulae, and sometimes with a band of grooves down the centre. There is a geometrical element, but employed with great restraint, consisting of carets or zigzag bands. In style the Danish lunulae from Fredensborg and Skovshøjrup are closely related to these, and differ only in the shape of the terminals; and here a rhomboid decoration element comes in.

A degree of resemblance to these stylistic features is to be found in the sheet gold work of the Bush Barrow phase of the Wessex culture. The outlining of the edges with parallel bands of grooves is quite closely matched on several of the pieces from Bush Barrow itself: the lozengeshaped plates, the belt-hook, and the gold cone (Piggott, 1938, Pl. X). The belt-hook is particularly apposite because of the way in which the grooves follow the curve of the edges. The zigzag bands are found also on the larger lozenge plate and the cone (and also, it might be added, at Velvary). The precise ruling of the lines, in contrast to the irregular working of the linear decoration on the Irish sun discs, is also a common feature of the Bush Barrow goldwork and the Northwest European and Danish lunulae. Similar goldwork also occurs in Brittany; such as the gold box excavated from a dagger-grave at Lannion by Van Giffen (B.A.I. Groningen; as yet unpublished). The rhomboid pattern on the terminals of one of the Danish lunulae recalls in a general way the predeliction for the lozenge shape shown by the Bush Barrow goldsmith. The workmanship of the Bush Barrow pieces is much superior to that of the lunulae, and the patterning somewhat more elaborate, but both avoid the elaborate hatching favoured by the Irish lunula-makers. Although the Bush Barrow goldwork has features not matched elsewhere, the Northwest European and Danish lunulae can be regarded as belonging to a related though not identical style. Like so many elements of the Wessex culture, this goldwork style is common to

both sides of the Channel. Since there is no evidence that lunulae were made in Wessex, it seems not unreasonable to attribute the origin of the Northwest European lunula group to Northwest France (as has indeed already been suggested by Sir Lindsay Scott and Kleemann) and to suggest Wessex I as a date by which the edge-grooved lunulae are likely to have been evolved.

The Schulenburg lunula establishes a link between the Northwest European gold lunulae and the Weser group of copper or bronze ones; which is strengthened by the 'Irish axe' ornament of one of the Bodenwerder specimens. Chronologically this fits with the dating of the Northwest European lunulae suggested above, for it is clear that Irish tracer-decorated axes were being traded to Central Germany (Dieskau, Wessmar) through South Hanover at a time equivalent to the Wessex I stage, and other Irish axes (but without tracer ornament) are known in Hanover (v. Chapter I). The Schulenburg lunula and decorated axes, though of different origins, may well be associated in a single trade complex.

There are, however, typological difficulties, for the specific features of the Weser lunulae are not those of the Northwest European group; we may recall the cast ribs, the rolled terminals, and the absence of decoration resembling any of the Western lunulae. It seems likely that the Weser lunulae were made (in Hanover?) by a smith who was imitating the general form of an imported lunula, but employing his own techniques; Hachmann and Kleemann believe that the techniques involved are Unětician. The workmanship is crude, especially if one considers the high standards attained by the Saxo-Thuringian bronzesmiths not so far away; yet one of these primitive pieces seems to have been traded to the Altmark across Saxo-Thuringian territory! It may be that the Weser group is really to be connected with the earlier, but isolated, Velvary lunula rather than with the Schulenburg-Northwest European group. On the other hand the Oegeln collar, which is connected with the Bodenwerder by its panel arrangement, is as late as Reinecke A2 if the old illustrations of its associations are to be relied upon, and is clearly the latest of the lunulae in Northern Europe.

The Danish lunulae are clearly derived from our Western edge-grooved type, but judging from the distinctive shapes and decoration of their terminals they were made in the North. Some support for this view can be derived from the finds in Denmark of the gold objects 'with oar-shaped ends' which have been discussed above. Their terminals provide an analogy with the lunula terminals, and some of them may have been made by the same goldsmiths who made the Danish lunulae.

Thus we cannot use the North European lunula finds as evidence for direct trade relations between the British Isles and Northern Europe; but if our dating of them is correct they merge in with the broader trade current involving Irish axes, halberds, and amber. The direct ancestors of the Western European lunulae are pro-

bably represented by the Cabaceiros piece, which may, on the basis of its association with sun discs, belong chronologically to the Bell Beaker phase; from there the idea spread to Brittany, and then to Cornwall, Scotland and Ireland on the one hand and Belgium, Central Germany and Denmark on the other, about the time of Wessex I. Goldworking seems to have begun in Denmark at this time; and in Ireland the lunula was taken up, and enriched with the 'spacer-plate' patterns, by the Food-vessel people who had command of the Wicklow gold. The 'lunula fashion' on the Continent may also have been served by an independent current reaching Central Europe from Italy, giving rise to the Velvary and and other collars mentioned by Sprockhoff; the South Hanoverian school may result either from the Western European or Central European current. In the Middle Bronze Age the 'lunula fashion' gave way to a 'collar fashion', with the Irish gorgets as their equivalent.

LIST OF LUNULAE IN NORTHERN EUROPE

(Cf. Map XIV)

I. *Gold lunulae decorated in edge-grooved style*

France

1. *Kerivoie* (C. du N.), Hoard, Museum St. Germain-en-Laye.
   Photo: Lantier, 1948, fig. 21; drawing, Giot, 1960, fig. 51b.

Germany

2. *Schulenburg*. Kr. Springe. Museum Hannover.
   Hahne, 1912, 86 ff., *Taf.* 10; Jacob-Friesen, 1934, *Taf.* 24: 2; Ebert, *Real.*, VII, *Taf.* 213.

Belgium

3. *Fauvillers*, Prov. Luxembourg. Museum Brussels.
   De Loë, 1931, II, fig. 41; Mariën, 1952, fig. 171.

Britain

4. *Coulter*, Lanarks. Museum Edinburgh.
   PSAS L, 17, fig. 1. (Photo).
5. *Harlyn Bay*, Cornwall.
   Bullen, 1912, Pl. 22; Smith, 1922, 93 ff., fig. 7–3.
   With (?) flat axe, lunula of Irish type.

Denmark

6. Fyn. *Skovshøjrup*, Broby s., Odense H. NM Copenhagen (fig. 40).
   Broholm, *DB* II, Pl. 2: 6.
   Hardy, 1937, Pl. XXX: 1. Cf. Montelius, 1900, Fig. 203.
7. Zealand. *Fredensborg*, Lynge-Kronborg H., Frederiksborg A.
   NM Copenhagen.
   Worsaae, *Nordiske Oldsager*, Fig. 249; Hardy, 1937, Pl. XXX: 3.

II. *Undecorated gold lunulae: terminals of Danish form*

Denmark

8. Zealand, *Grevinge s.*, Ods H. NM Copenhagen. Broholm, *DB* II, Pl. 2: 7; Boye, 1859, 3 ff.; Hardy, 1937, Pl. XXX: 2.

III. *Copper or bronze lunulae* (*and related collars*)

Germany

9. *Bodenwerder*, Kr. Hameln. Tracer herringbone ornament, in panels. Found with No. 10. Sprockhoff, 1939, 1 ff., *Abb.* 2; 1941, 61 ff., *Abb.* 55.
10. *Bodenwerder*, Kr. Hameln. Cast ribs, found with No. 9. References as for No. 9.
11. *Göttingen*, Hainberg. Cast rib. Sprockhoff, 1939, 1 ff., *Abb.* 1; 1941, 61 ff., *Abb.* 54.
12. '*Altmark*' (no exact provenance), Brandenburg. Kunstsammlung Veste Coburg. Cast rib. Probable hoard, with simple bronze neckring, bracelet with cast rib like the lunula. Kleemann, 1953, 135 ff., *Abb.* 1; Hachmann, 1954, 92 ff., *Abb.* 1 and 2, *Taf.* XVI: 2.
13. *Oegeln*, Kr. Guben. Collar; panel decoration. *Neues Lausitzer Magazin*, V, 1826, *Taf.* 3: 1–16; Bohm, 1935, pp. 26, 103, Nr. 16, *Taf.* 7: 13, 19; De Navarro, 1951, 82.

Bohemia

14. *Velvary*. Collar; hammered ribs, double triangle ornament. Schranil, 1928, 105, *Taf.* XIX: 1; Mandera, 1953, 192, n. 67 with further refs.; Moucha, 1960, 465 ff., fig. 171.

CHAPTER XVIII

BASKET-SHAPED EARRINGS AND ORNAMENTS WITH OAR-SHAPED ENDS

(Pl. XIX, XX; fig. 41–3; Map XV; List p. 190)

In the British Isles, basket-shaped earrings occur both in sheet gold and in copper or bronze. All British-Irish specimens are characterized by a short tongue and a more or less broad 'basket'; which contrasts with a group of generally similar ornaments in Eastern Europe, especially in Poland, which have generally longer tongues and elongated narrow 'basket'. The British-Irish gold earrings may be plain or ornamented with impressed grooves and/or pointillé. The gold of which they are made is presumed to be of Irish origin, though more specimens are known in Britain than in Ireland; the British specimens tend, in fact, to occur in the eastern part of the island, with Radley in Oxfordshire as the exception. Associations of the gold earrings include a well-known B2 Bell Beaker grave group (Radley) and, a grave with a Bell Beaker with all-over cord ornament (Kirkhaugh); but one specimen was oddly found on the old surface under the rampart of/an Iron Age camp (Boltby Scar). One find (Orton, fig. 41) was from the same cairn as, and may have been associated with, a gold lunula of our 'edge-grooved' type. The copper or bronze earrings were found in one case with a contracted inhumation (Cowlam) and in the other with the largest Scottish Early Bronze Age hoard (Migdale).

In Northern Europe, a number of basket earrings have been found which correspond more or less closely in form to the British ones, and which have been viewed as certain or probable British exports. The pair from the cave 'Trou del heuve' at Sinsin, Prov. Namur, Belgium, are atypical in having tongues at both ends, and being corrugated over the whole surface. Other gold specimens occur as far away as Poland: in Western Poland in the Early Bronze Age hoard from Wasosz, and in southeastern Poland in a grave group from Rusilow near Skalat (Pl. XIX*b*), near the borders of the Ukraine and Bessarabia. The latter site is actually closer to ancient Troy, which has yielded more elaborate earrings held by Childe and others to be the prototypes of our British type, than it is to Ireland. The Rusilow grave group belongs to the Southeast Polish Barrow grave culture. Its flint dagger and stne hammer suggest a dating comparable to Northern Late Neolithic A and Unětice;

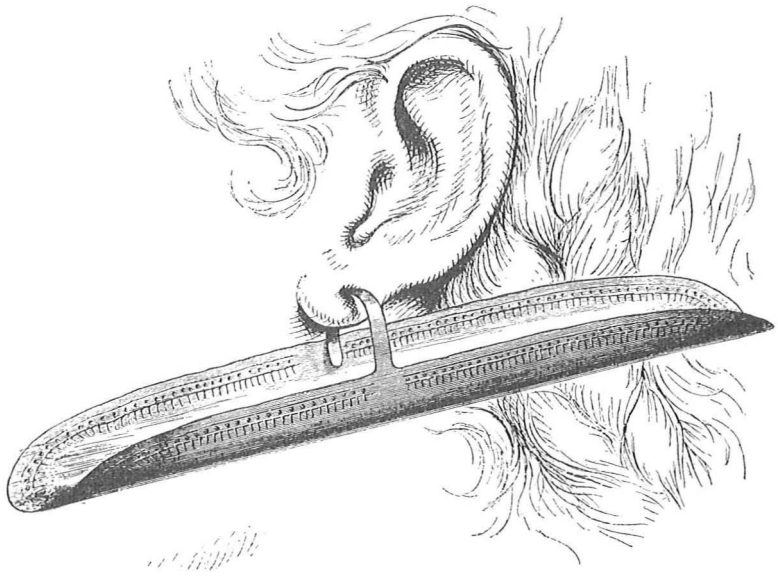

Fig. 41. Gold earring (one of a pair) from Orton, Morayshire, Scotland. After Paton.

the Wasosz hoard contains a Unětice-type low-flanged axe as its most readily datable object.

The narrow Polish basket earrings (fig. 42; Butler, 1958, Pl. VII-VIII, fig. 13, 15), may be made entirely of bent wire, or of sheet copper or bronze; but one example in sheet gold has been published (Knapowska-Mikolajczykowa, 1957, 38–9, *Ryc.* 18).

This Polish type, known also as willow-shaped lock rings (cf. Neustupny, 1961, 93–4, fig. 22*b*) is associated especially with the Mierzanowice culture in Poland, and appears also in the related Nitra group in southwest Slovakia and eastern Moravia. It is dated to an early phase of the Unětice period. Yet the Schönfeld and Zedlitz hoards, with versions of these same earrings (Butler, 1956, Pl. VII, VIII) shown by their axes to belong to a mature Unětice phase, not readily separable in time from Wasosz and perhaps Migdale. It is noteworthy that Zedlitz contains small metal cones of the type also found at Migdale.

If both ends of a length of copper or bronze of gold wire be expanded into plates, instead of only one end as in the case of the basket earrings, we have a related type, the 'ornaments with oar-shaped ends'. As with the basket earrings, we seen to have a distinction between a western European type with short terminals and an Eastern type with long ones. The short-terminal Western type is somewhat rare, but is represented in copper or bronze by specimens from Yarnton, Oxfordshire and Lumphanan, Aberdeenshire, and in presumably Irish gold by the Arlon specimen from Belgian Namur (Pl. XX).

An interesting hybrid is the specimen from Bennekom, near the lower Rhine in the Netherlands. Glasbergen (1958) was able to show that this neckring or diadem was found in a grave with a Bell Beaker of Veluwe type. The find-spot must have been within easy walking distance of the site of deposit of the Early Bronze Age Wageningen hoard (see pp. 18–9). From the form of its terminals the Bennekom

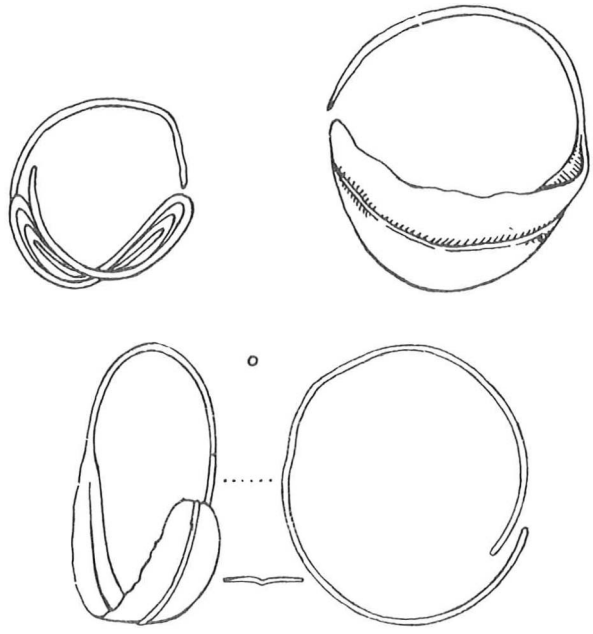

Fig. 42. Earrings from Polish hoards. 1 and 2, c. 4 : 5; 3, c. 1 : 2. After Antoniewicz.

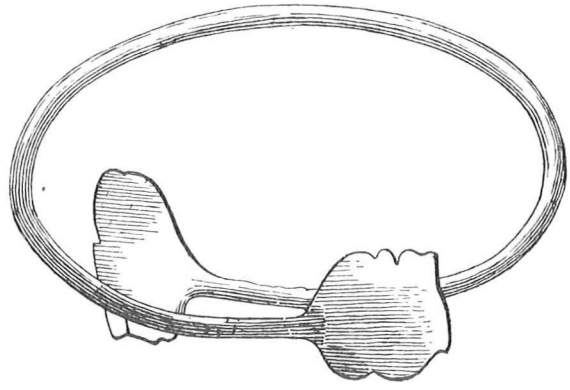

Fig. 43. Neckring or diadem, Lumphanan, Aberdeenshire, Scotland. After Wilson.

ornament must be assigned to our Eastern group; yet the decoration on the terminals strikingly resembles in technique and style that found on the Orton earrings; so that one must suppose that the Bennekom ornament was made by a basket earring maker of the British school.

Related gold objects, decorated however in a style recalling not so much the basket earrings as the Scandinavian gold lunulae, occur in Denmark and southern Sweden (Butler, 1958, Pl. XI). We have suggested the possibility that these Scandinavian ornaments with oar-shaped ends belong not to the Iron Age, to which they were hitherto assigned, but to the Northern Late Neolithic, and that they may be by the same makers as the Northern gold lunulae. These in turn are inspired partly by the Western European 'edge-grooved' lunulae (Chapter XVII), but also by the Northern Unětice ornaments with oar-shaped ends.

LIST OF BASKET EARRINGS OF WESTERN TYPE IN THE BRITISH ISLES AND NORTHERN EUROPE

(cf. Map XV)

Ireland

1. Co. Down. '*Dacomet*'. Pair, gold. Armstrong, 1933, 86, No. 348–9, Pl.XVIII: 423–4.
2. *Find-spot unknown.* Ex coll. Mr. Walsh of Dramore. Gold; pointillé edging. Armstrong, 1933, 86, No. 350, Pl. XVIII: 413.

Britain

1. Sutherland. *Migdale.* Hoard. Copper or bronze. J. Anderson, PSAS XXXV, 1900/1, 266; S. Piggott and M. Stewart, *Inventaria* GB. 26: 60.
2. Elgin/Moray. *Orton.* Pair, gold. In stone cist; with (?) gold lunula. N. Paton, PASAS VIII (1869), 28 ff., fig. p. 30; Evans, ABI 393, fig. 492; Butler, 1958, fig. 14.
3. Northumberland. *Kirkhaugh.* Grave, with cord-decorated Bell Beaker, etc. J. D. Cowen, *Arch. Ael.* XIII (1936), 210; cf. Childe, 1949, 93, n13a.
4. Yorkshire. *Cowlam.* Greenwell's Barrow LVIII. Grave with contracted inhumation. Pair, copper or bronze. Greenwell and Rolleston, 1877, 233; Evans, ABI 391–2, fig. 490.
5. Berkshire. *Radley.* Barrow Hills Field, Ring-ditch 4, primary grave. Pair, gold. A. Williams, *Oxoniensia* XIII, 1948, 1–9; C. F. C. Hawkes, *Inventaria* GB. 2: 2–3.

Belgium

1. Prov. Namur. *Sinsin.* Cave 'Trou de Heuve'. Mariën, 1952, 186, 192, 480, fig. 173. (Not shown on Map XV).

Poland

1. Pow. Szubinski. *Wasosz.* Hoard. Pair, gold. J. Kostrewski, *Przeglad Arch.* II (1922), pp. 161 ff., fig. 29; Montelius, 1900, 35, *Abb.* 84–5; A. Knapowska-Mikolayczykowa, *Fontes Arch. Posnansiensis* VII, 1957, 85–6, *Ryc.* 110–111.
2. *Rusilow.* Grave. Gold. Pl. XIXb; T. Sulimirski, *Man* 1948, p. 124; Butler, 1958, 15, Pl. X.

PART TWO

CHAPTERS OF TRADE HISTORY IN THE BRONZE AGE

I. PRELUDE TO THE BRONZE AGE

(Fig. 44; Map XVI; Pl. XVIII)

Gradually, in the Third and the first half of the Second Millenium B.C., the flatlands of Northern and Northwest Europe were occupied by farmers and stockbreeders, who attacked the perimeter of its forests with fire and stone tools, began the cultivation of virgin lands, set cattle and sheep to graze on the grasslands, and laid the foundations of stable and permanent societies. Older Mesolithic inhabitants were partially replaced, partially absorbed, partly provided with new means of livelihood and cultural development.

Competence upon the sea must have been a characteristic of most of the Neolithic societies that peopled the perimeter of Europe. Of their seagoing vessels no evidence has survived, but they were able to occupy islands large and small, transporting their families, livestock and seed over water. The Baltic Sea must have been as familiar with the boats of the Northerners as were the Atlantic routes with the vessels of Western Neolithic pioneers. Well-known parallelisms in megalithic architecture in the Atlantic and Baltic zones, and Northern influences detectible in pottery in the British Isles, demonstrate at least intermittent traffic across in the North Sea even in the Northern Early Neolithic.

While for many centuries stone tools and weapons were the primary equipment of these societies, metals were already being worked in the ore-rich mountains of Central and Eastern Europe. Much of the stone equipment of the Early Neolithic 'First Northern' farmers reflects the influence of metallic forms; actual copper ornaments have been found in one of their settlements (Barkaer) and in a contemporary grave (Salten) in Jutland: the first trickle of what was later to become a flood of metalware from the south, dimly foreshadowing mighty developments of industry and trade. Geology had cheated the North European plain by depriving it of native metal resources; geography partially made amends by providing river routes – Vistula, Oder, Elbe, Weser, Rhine – down which by canoe or raft the fruits of the mountains could descend conveniently to the plain. In the Northern Early Neolithic, the routes were already known and in use, although as yet only a few primitive metal objects came along them.

With this earliest metal trade from south to north we have connected the small golden sun disc from Kirk Andrews in the Isle of Man, with its simple pointillé

decoration and marginal holes for use as a pendant. It is unique of its kind in the British Isles, but has prototypes in Hungary and in the Stollhof hoard in Austria. Driehaus believes such discs were made in the workshops of the Baden culture, of gold from Transylvania; copper discs of similar character were traded north-ward to Jordanova (Jordansmühl), Brescz Kujawski, and Salten. It does not seem too far-fetched to suggest that the Kirk Andrews disc or its prototype (for it may be after all a local copy, in which case it would be, typologically at least, the oldest example of Irish goldwork) reached the Irish Sea by way of Northern Europe, brought by the people who introduced cord-ornamentation to Beacharra potters, and who perhaps brought back with them the inspiration to dolmen-building which according to Becker must come to Denmark from the west during Early Neolithic C.

Possibly contemporaneously or slightly later, northern contacts are discernible in the south of England. The thin-butted axe found in Julieberrie's Grave in Kent (Piggott, 1939, 267 ff.) must be an import from Denmark; but such axes continued in use through the first half of the Middle Neolithic in the North. As Childe suggests, the Julieberrie's Grave axe may have been brought by the builders of the Medway megalithic tombs, which in plan are very similar to Northern *langdysser*, and which imply some intrusion, possibly from Northwest Germany, into Kent. With this movement may be connected the sherds of Northern Early Middle Neolithic pottery from Orpington, and other finds of *Tiefstich* pottery from West Hartlepool on the Durham coast belonging to the same phase. Although Piggott suspected that they are modern collectors' throw-outs, their eastern location, near suitable landfalls, argues somewhat in their favour.

Further evidence for contact between Denmark and the British Isles in the second half of the Northern Middle Neolithic is provided by the clay 'pot lid' from Bognaesgaard in Zealand, the decoration of which is evidently copied from a metal sun disc of the type represented in copper at Nieder-Kränig in Brandenburg and in gold in Ireland. The Bognaesgaard disc reproduces with astonishing fidelity, considering the difference in material, the pattern of the Irish discs from County Wexford, even to the imitation of the central perforations. The simplest explanation of this would be that the Zealand potter was copying an Irish gold sun disc; but no actual Irish gold has been found in the North in this period, unless the gold bracelets from Schwesing and Himmelpforten be accepted as belonging to the 2nd half of the Northern Middle Neolithic. There are grounds for suspecting that the Irish sun discs are themselves derived from a fashion already widespread on the Continent. The prototypes, as has already been suggested, are the Stollhof-Jordansmühl-Salten-Kirk Andrews disc-pendants appearing in the Early Neolithic, and the Niederkränig type developing from them. The zigzag patterns which appear on the Bognaesgaard and Wexford discs are of course a characteristic motif

on the Northern *Tiefstich* pottery of the period. Cross-ornamented and perforated discs were also made in other materials – amber discs like DO II 405 are essentially an expression of the same idea, and metal-poor Corded Ware folk in Central Germany utilized similar buttons made of bone and shell. From this it may be concluded that the 'sun disc idea' was common to several Early and Middle Neolithic cultures in Northern Europe, and need not be an Irish invention. The Irish discs are directly inspired by the Continental fashion; the availability of gold in Ireland enabled the type to be reproduced in precious metal in that country while the North European cultures usually had to make do with substitute materials.

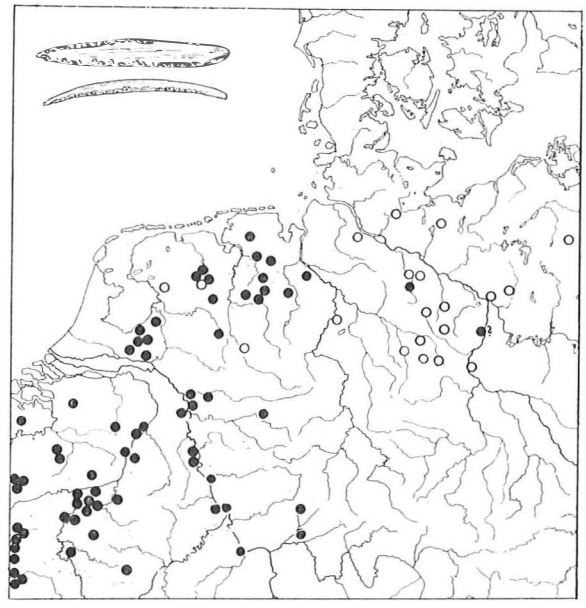

Fig. 44. Distribution of Grand Pressigny flint knives (black dots) and their imitations in Northern flint (open dots). After Struve.

The small gold sun discs from Mere Down in Wiltshire are a reduced version of the Wexford type; if their contemporaneity with Bognaesgaard and Wexford be assumed, a correlation is provided between Wessex B1 Beakers and the period of the decorated potlids in Denmark, MN IV.

This period, Northern MN IV–V, is undoubtedly a very important one for the spread of copper metallurgy north of the Alps and the extended development of the trade in copper products on the North European plain and in the British Isles. Bell Beaker folk are generally held to have played a very important role in these processes; other cultures and agencies must also have made important contributions

(cf. Coghlan and Case, 1957; Junghans, Sangmeister and Schröder, 1960). But characteristic products of this period, such as flat axes and tanged daggers, have not for the most part yet been shown to be readily assignable to particular production centres on the basis of their form alone. The resources of spectrographic analysis are being brought to bear on this problem; but at present writing it does not as yet appear to be possible to give a clear answer to either of the two questions which ought to be posed in connection with this study: what precisely was the relationship between the Central European or Central German area and the British Isles in this period, and was there already an Irish axe trade to South Scandinavia in this period. One can hope that we shall have at our disposal some day maps for the early copper trade in our area comparable in clarity to the map showing the contemporary trade in Grand Pressigny flint knives and their imitations in other flint (fig. 44).

The more or less general use of wheeled vehicles is probably to be postulated from this time onward. Single-piece disc wheels seemingly belonging to PF Beaker (Corded Ware) culture, pollen and C 14 dated to this period, have been found in some numbers in bogs in the northern part of the Netherlands (Van der Waals, in *Palaeohistoria* X, 1964, 103 ff.); and it would be odd if such wheels, once known, went out of use entirely in the subsequent Bronze Age.

It is clear that there were at least occasional exchanges of goods and ideas between the British Isles and both the Baltic region and the Netherlands during the second half of the Northern Middle Neolithic, in which period the first Bell Beaker and Corded Ware migrations are probably to be placed, and at least occasional contact between the British Isles and Central Germany during this period. It is in this period, too, that the earliest significant trade in copper tools and weapons becomes discernible, and in this period that the Irish copper industry is likely to have taken root.

II. THE EARLY BRONZE AGE

(Fig. 45, 46)

The true history of trade begins, as Childe has often emphasized, only with the emergence of a Bronze Age economy. Copper, and to an even greater degree tin, being rare substances, and a complicated technology being required to mine them and convert the raw material into usable implements, the crafts of miner and bronze smith could only be practiced by a limited number of full-time specialists. Trade was an essential mechanism in the transition from the Neolithic to the Bronze Age.

Within the area of our study copper ores are found only on the periphery, in

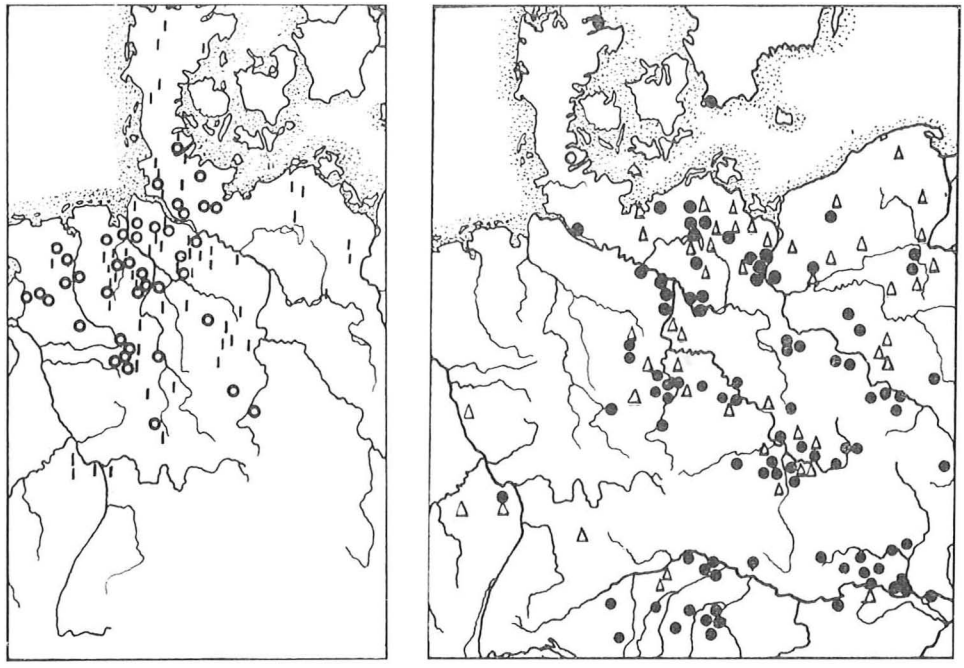

Fig. 45. Left: the *Sögeler Kreis*, as represented by Sögel-type daggers and nicked-flanged axes. Right: the Unětice trading area, represented by finds of larger Unětice hoards and of triangular metal-hilted daggers.
After Struve, combining maps of Forssander, Uenze and Sprockhoff.

the mountain areas of Saxony and Thuringia and in Ireland and Highland Britain; and just beyond its borders, in Bohemia and Brittany. While copper implements were apparently produced in all these ore-bearing regions during the period discussed in the preceding section, the economy of our entire region remained essentially Neolithic; copper tools and weapons were merely an occasional supplement to the overwhelmingly preponderant use of stone. The spread of bronze-using was a long-protracted and uneven process, and many areas remained Neolithic for centuries after others were enjoying a plentiful supply of metal goods. Each separate district has its own individual date for the beginning of its Bronze Age; for our area considered as a whole, however, we may date the beginning of the Bronze Age to the time of the development of the remarkable metal industry of Saxo-Thuringia and the spread of its influence through commerce over a large part of Northern Europe.

Saxo-Thuringia was undoubtedly the first region in our area to acquire a full Bronze Age economy. The copper resources of Vogtland, the Harz, the Erzgebirge and the Thüringer Wald provided the basis for its development; the Unětician

farmers who migrated from Bohemia to the districts of the lower Unstrut and the middle Saale and to the Upper Lausitz were its primary local market.

It appears from Mandera's account (1953, 177 ff.) that none of this Saxo-Thuringian development is to be ascribed to the phase conventionally described as 'Early Unětice'; the migration of his Slany group to the Saale did not take place until the close of the Bronze Age, and falls within the *Hochaunjetitz* period, with the

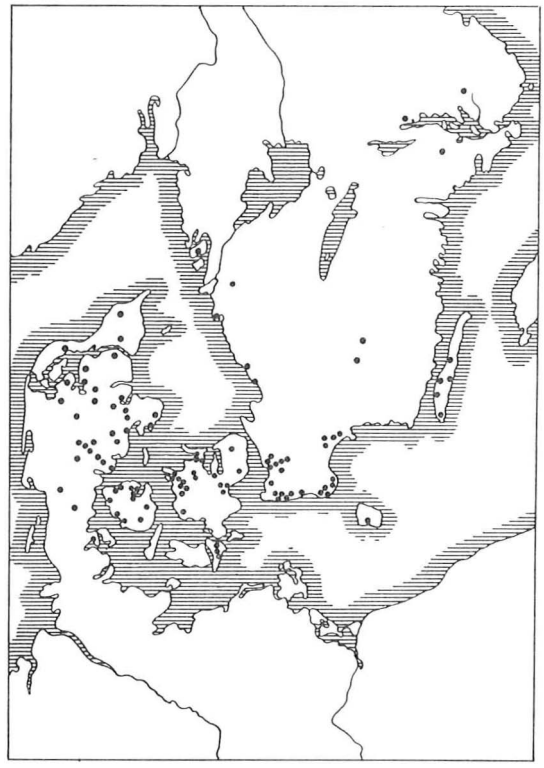

Fig. 46. Distribution of lowflanged axes of Pile type. After Forssander.

Fürstengräberzeit, the time of the princely barrow graves and the great hoards, as its climax. Schmidt-Thielbeer (1955, 111 ff.) nevertheless defends the existence of an Early Unětice phase in Saxo-Thuringia, assigning to it the cemetery at Nohra, Kr. Nordhausen in the Harz. Bell Beakers are contemporary with it; three flint daggers imported from the North found in graves of the Nohra cemetery suggest its correlation with Northern Late Neolithic A or even (if Struve's view of the flint dagger development is correct) with the Upper Grave phase, at the end of the Middle Neolithic.

The difficulty of establishing chronological subdivisions within the Saxo-Thu-

ringian Early Bronze Age is emphasized by all recent writers. Yet it must represent a substantial period of time; the considerable bronze industry could not have developed overnight.

An important mercantile centre for its industrial products appears to have been situated near the junction of the Elster with the Saale River near Halle. Here, at the climax of the period (when some calamity caused its trading stocks and treasures to be consigned to the earth for safety, never to be recovered) a remarkable concentration of merchants' hoards provides a good impression of the scale of the industrial activities of the Saxo-Thuringian producers. Half a dozen hoards found within a radius of a few miles of Dieskau – two from Dieskau itself, two others from nearby Halle-Kanena, one from Bennewitz, another from Schkopau – contained collectively more then 750 flanged axes, together with numerous halberds, narrow double-axes, ingot torques, armrings, spiral ornaments and other objects. Some 120 amber beads in one of the Dieskau hoards, and their frequent occurrence in graves of the period[1], illustrate one aspect of their trading activities, for the Halle district lies on the main Amber Route to the Mediterranean. Also from Dieskau comes a personal hoard of objects of precious metal – a golden flanged axe, ingot torque and bracelets, and a silver ring – perhaps the property of a priest, chief or rich merchant, or a person combining all of these functions. Rich burials in great barrows in the same district, especially those at Leubingen and Helmsdorf, provided with lavish gifts of bronze and gold, are interpreted as the graves of powerful local chiefs who provided the shield of security which enabled the local industry and trade to develop, sharing the profits but monopolizing the honour and glory[2].

Saale and Elbe carried the products of this industry northward to Brandenburg, Mecklenburg, Pomerania and western Poland, and in smaller quantities to Denmark and South Sweden. Eventually bronzesmiths themselves ventured northward and set up workshops in the North German provices, there developing local types of daggers and other weapons not produced in the original centre.

While the Saxo-Thuringian merchants systematically exploited the market to their north, they made no attempt to develop the territories to their west. Hoards of Saxo-Thuringian merchandise are very rare west of the Elbe and Saale valleys, and even stray finds of their products are not numerous in Northwest Germany (cf. fig. 45b). Yet enough of their products must have come west-

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[1] Not actually in the Halle district, however; though amber is found in contemporary Unětician graves in the Lausitz (a grave from Burk contained 312 amber beads).

[2] The most recent discussion of the Halle area and its concentration of metal wealth is by Jahn, 1950, 81 ff., with full references. Cf. also Mandera, 1953, 177 ff. Jahn doubts that the local salt resources were exploited commercially at this time. Von Brunn (1949/50) gives a list of Early Bronze Age hoards in Saxony and Thuringia.

ward to exert a powerful influence on the development of Western European metal-work.

The most important of these influences, as Nancy Sandars has shown (1950, 54 ff.), is to be seen in the development of the dagger in Western Europe. The characteristic straight-butted tongued daggers of the Armorican Bronze Age are imitations of Uenze's Oder-Elbe type. The Breton daggers are technically simpler than the Oder-Elbe prototypes, lacking the metal hilt, the rivet in the tongue, and the elaborate geometrical decoration of the face; but their form and rivet arrangement are otherwise similar. A sharply defined midrib is the only feature of the Breton daggers which is not found on the Oder-Elbe type, although midribs are found on other varieties of Italian and Central European metal-hilted daggers and halberds. In Britain, the daggers typical of Ap Simon's Bush Barrow stage, the earlier phase of the Wessex Culture, include examples that are identical with some Breton daggers, and may have been introduced to Wessex by Breton smiths. Their distribution, though mainly concentrated in Wessex, extends to Yorkshire; derivative blades appear in Scotland and Wales, and in Ireland[1]. Unětician pins, and low-flanged axes imitating Unětician types, also occur in early Wessex graves; while at St. Fiacre in Brittany an imported metal-hilted dagger, not quite typical but which appears to resemble Uenze's 'Saxon' type more than any of his other varieties, was found in an Early Bronze Age grave. At Aylesford in Kent a knife-dagger with four small rivets, closely resembling Unětice daggers, occurs in a grave with a dagger of Breton-Bush Barrow type and an Irish narrowbutted flat axe (Ap Simon, 1954, fig. 2). The bronze cones and tubular heads in the Migdale hoard, the Ford dagger and the wangford socketed axe likely to be direct importations from the Unětice sphere.

If the Breton and Armorican daggers are derived from the Oder-Elbe type, it must follow that no part of the Wessex Culture is earlier than the quite advanced stage of the Unětice metal industry represented by its northern extension.

The exact routes by which these Unětice metal influences first reached the West are not clearly defined. Oder-Elbe daggers and their derivatives appear at Gaubickelheim in the Rhine-Main region, Donauberg in Alsace, and the Seine at Paris; a cross-France route is not clearly documented, and it is equally possible that they came down the Rhine and reached Brittany and Wessex by sea. In the Netherlands,

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[1] In addition to the Killaha dagger, discussed by De Navarro and Ap Simon, and the Tooped Mountain Cairn specimen (found with a Type E Food Vessel), the National Museum in Dublin contains several other daggers belonging to the Unětice-Breton-Wessex family. Examples may be cited from Draperstown, Co. Derry (Languette, grooved, prominent narrow midrib, 3 rivets); River Bann at Lochrans Island (four small rivets, flat pointille-decorated midrib; W 190 (no locality), four small rivets, flat midrib; P. 263 (no locality), grooved, with flat midrib, small rivets (original number not ascertainable).

Saxo-Thuringian or Northern Unětice products are very rare; but the recently found small four-riveted knife-dagger from Bargeroosterveld, with horn hilt studded with tin nails (Glasbergen, 1956, 191 ff.), has a blade of Unětice or Adlerberg type which is virtually identical with that from Aylesford, Kent already cited. Similar knife-daggers have even been found in Ireland.

We are inclined to believe that the introduction of the halberd Types 4 and 6 to Ireland is intimately connected with the events which brought the Oder-Elbe dagger influence to Brittany and Wessex. Since a number of South British and Irish halberds show unmistakably Saxo-Thuringian features, and some may well be of Central German metal, there are good grounds for supposing the exportation of some Central German halberds to the British Isles, and their imitation by Welsh and Irish smiths; while the Killaha hoard establishes the contemporaneity of at least one developed Irish halberd with a dagger related to the Bush Barrow type. No Irish halberds are demonstrably earlier. Since the origin of the Central German halberds can be explained by derivation from Central Europe, and many Unětician metal types are clearly related to these of North Italy, there is no compelling reason to believe in an Irish origin for the halberd. The idea of an Irish centre of diffusion of the halberd rests principally on the presence in Ireland of a small number of (undated) 'primitive' halberds; but typologically it is by no means obvious that these are necessary links in the evolution of the Type 4 halberd. There is in fact a distinct break in tradition between the Irish halberds with a rectangular hilt-plate and the 'international' type; which suggests that, whether or not the primitive Irish halberds have an older history, the Type 4 halberd represents a new type introduced to Ireland. While Ap Simon would bring the new type directly from Italy, we think it more likely that it reached the British Isles by way of Saxo-Thuringia, along with the Oder-Elbe daggers and that the Irish smiths were more interested in the halberds.

In any event, it is safe to say that the Irish as well as the Breton-Wessex industry received a considerable stimulus from its Central German contacts. Its expansion into overseas markets is securely attested only after such contacts had taken effect.

In the phase of expanded overseas trade between the British Isles and Northern Europe, the traffic falls into two geographically separated patterns: one mainly between North Ireland and North Britain and Jutland and the Baltic area, the other between South Ireland and South Britain and the Low Countries, Westphalia, South Hanover and the Saale Valley (the Wessex amber trade conforms to neither pattern and represents a special case).

The first pattern of Anglo-Irish influence is that extending from South Britain to the Low Countries and inland by way of the Rhine and its tributaries. Irish axes and halberds are numerically the most important, together with a few examples of probably Irish goldwork and occasional other bronzes.

The Scheldte estuary provides one point of entry for Irish products, as is suggested by the Irish axe found near Ghent and the halberd from Wichelen; the gold basket earrings from Sinsin and the diadem from Arlon, which compares in form with bronze ornaments from presumably Beaker graves in Britain, suggest that Irish gold products reached East Belgium. The Rhine is a more important route, providing access to the important centres of population on the Veluwe and in the Nijmegen area. The hoard from Wageningen, in the Rhine Valley at the edge of the Veluwe, with its Irish flat axe and halberd, riveted dagger related to a Singen type, tracer and other bronzes, may be interpreted as the property of an itinerant bronzesmith of Irish or Scottish extraction, and by itself is sufficient to suggest that such travelling bronzesmiths from the British Isles provided the Netherlands with its earliest metal industry. Several Irish-type low-flanged axes, among them decorated specimens, have also been found in the central part of the Netherlands, in a region thickly settled by Veluwe Bell Beaker people. Low-flanged axes of Emmen type, which seem to be local derivatives of the Irish low-flanged axes, occur somewhat more widely in that country; they are presumably the products of a small local industry that took root in consequence of the activities of the Irish itinerant smiths.

An important contribution toward providing a cultural background for the trade and bronzesmiths' activities in the Netherlands has been made by Glasbergen in showing the high probability that the gold ornament from Oostereng was found with a Veluwe Beaker. We have suggested that this ornament with oar-shaped terminals is a combination of Anglo-Irish workmanship (related to the basket-shaped earrings) and a Northern Unětice type of ornament, derived from the Polish basket earrings of our Form C. It seems very likely, from the evidence cited above, that Veluwe Beakers were flourishing at a time corresponding to Northern Unětice, the *Fürstengräberzeit* in Saxo-Thuringia, and the Later Beaker and Wessex period in Britain; which implies that in the Netherlands the makers of Late Beakers are likely to have been the people whom the Early Bronze Age smiths served, even if the bronzes are never found in their graves.

Up the Rhine and through Westphalia and South Hanover extends the remarkable trail of Irish axes and halberds, first pointed out by O Riordain and confirmed and given greater precision by Sprockhoff's publication of the Ronnenberg and Sassenberger Heide finds. The trail leads directly to the Saale Valley, where finds of Irish axes and a halberd of Irish form (though apparently not of Irish metal) document the direct trade contacts between the British Isles and the Saxo-Thuringian Early Bronze Age. The Dieskau hoard provides the most useful chronological peg for this trade. Along this route, too, is found the Schulenburg gold lunula, which we believe is more likely to be of Breton than Irish origin. Adjacent to this route is found the 'Weser group' of copper or bronze lunulae, which appear to be

local imitations of the Western gold lunulae, but which, in the opinion of some continental authorities at least, owe something to Unětice traditions of workmanship.

While the extension of Anglo-Irish trade from the Netherlands up the Rhine would occasion no surprise, the use of the route from Westphalia to the Saale basin is by no means natural and inevitable. There are formidable barriers of hill, forest and moor between; the bulk of the Harz is interposed to cut off communications between east and west, and there is no through water route. Normally in the Neolithic and Early Bronze Age the Harz serves as a dividing-line between cultures and puts a stop to east-west trade[1]. Yet there is some evidence for Beaker and Corded Ware people having made use of the route; there is a thin trail of Saxo-Thuringian faceted battle-axes along it, reaching to the Veluwe (Struve, 1955, *Taf.* 27), and, even more remarkably, a similar trail of finds of Beakers with over-all cord ornamentation (see Struve's *Taf.* 36), exactly paralleling our axe-and-halberd route. It is very striking that this particular variety of Beaker is the only pottery type which forms a continuous chain between Saxo-Thuringia and the British Isles; and that it was a Beaker of just this type which Greenwell found in the Willerby Wold barrow in Yorkshire under conditions which suggested that it was contemporary with an Irish axe which has a close parallel in the Dieskau heard.

One may suppose that there was a caravan route along this otherwise little-used trail, linking the Saale with the Lippe and the Rhine, along which Beaker and perhaps Corded Ware herdsmen drove their beasts, some of the animals laden with trade goods. Finished metal goods need not have been the primary object of the trade; it seems impossible to believe that Ireland was systematically supplying Saxo-Thuringia with axes and halberds, nor is there evidence for the wholesale exportation of bronzes westward from Saxo-Thuringia. Some bronzes did evidently go in both directions, but the main purposes of the route must have been other than this. Several suggestions, apart from archaeological intangibles, may be made. It may, as De Navarro has suggested, have been the Amber Route by which Wessex was supplied; the Wessex halberd pendants fit in well with this concept. It may have been the route by which the small Netherlands bronze industry, which we have suggested was established by Irish or Scottish smiths, obtained its supplies of copper. Contacts between the Irish smiths in the Netherlands and the Saxo-Thuringian metal-merchants would adequately explain the apparent flow of Central European raw metal to the lands on the periphery of the North Sea and the English Channel; and it would scarcely have been more laborious to have brought

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[1] Thus, as has already been noted, Unětice hoards do not penetrate westward by this route; Grand Pressigny flint daggers were traded eastward to Westphalia but no farther (Struve, 1955, *Taf.* 33); S.O.M. cists reach Westphalia but go no farther eastward.

copper to the Netherlands from Central Germany than from Ireland, Scotland or Wales. Very hypothetically, it might be suggested that some Cornish tin was traded to Saxo-Thuringia by this route. The metal analyses of some of the great Saxo-Thuringian hoards show that even at the climax of the Early Bronze Age not only halberds but axes were often being made of copper, with little or no tin. In the Dieskau hoard, for example, the implements vary in tin content from 8% to none at all; while the Irish axe in the hoard contains 14% tin. From this we might conclude that while the Irish smiths had access to ample tin supplies, the Saxo-Thuringian smiths sometimes found it in short supply. Was there a tin trade from Cornwall to Saxo-Thuringia? Apart from the tin beads from Sutton Veny and Exloo and the tin nails in the Bargeroosterveld dagger-hllt already mentioned there is remarkably little evidence for a tin trade, but most of the tin ingots must have disappeared into the melting-pots of the Early Bronze Age smiths.

The Scandinavian Trade

Our second pattern of Early Bronze Age trade across the North Sea links the British Isles with Denmark and South Sweden, with radiations extending as far as Central and South-east Poland.

While in the period corresponding to the first half of the Northern Middle Neolithic we could point to only rare and occasional trade contacts between the British Isles and South Scandinavia, the second half of that period and the Northern Late Neolithic seem to display a certain regularity of trans-North Sea traffic. The best evidence for continuity of trade is provided by the finds of flint implements of South Scandinavian types in Britain. Piggott (1938, 101–2) and Willett (1952/3, 191 ff.) have listed and mapped some 35 finds of Northern flint axes and daggers, concentrated principally in Yorkshire and South-East England. While some of these may be losses by modern collectors, their consistent distribution and the fact that many are not of first-class workmanship argue (as Piggott has pointed out) for their acceptance as a group as genuinely prehistoric importations. Although all except the hoard of two axes and a dagger from Ramsgate are stray finds, they can be dated typologically, and the relative frequency may serve as a crude guide to the frequency of imports in each sub-period of the Danish chronology:

Later Middle Neolithic (Northern MN III–V): thick-butted axes, gouges and chisels with straight sides. Of the twelve finds listed by Piggott and Willett, four are in Yorkshire, apparently entering at the Humber and going westward along the Aire route. Two finds are in the Lower Thames region, two in the South-West (Hants. and Dorset) and two in South Wales, suggesting trade along well-known routes.

Late Neolithic (not assignable to sub-periods): thick-butted axes with splayed blade, imitating metal axes (like DO II 552–3). Seven finds, of which four are in Kent and the Thames Valley, and only isolated strays elsewhere (Cambridge, Manchester, Newport in Monmouths). An eighth example was allegedly found with another Northern flint axe and a dagger of Type V at Ramsgate and is accordingly assigned to LN B.

Late Neolithic A: Type I daggers. Six examples listed by Piggott, all in East Anglia or the Thames Valley except one from Stenley near Wakefield in Yorks. We add a good example from Sussex (Springfield Clump, Parham) published by Curwen (1937, *fig. 35: 2*). No examples of Types II or III have been recorded in Britain.

Late Neolithic B: Type IV and V daggers. Only two examples are listed by Piggot, one from the Ramsgate hoard mentioned above, and one from Rushford in Norfolk which is very debased, atypical and dubious.

Late Neolithic C: Type VI daggers. Four examples (two from Kent, one each from Cambridge and Suffolk).

It appears that there were some imports of Northern flints to Britain in each phase, indicating that the trade went on over an extended period and does not represent a single import horizon. But three-fourths of the closely datable imports (*i.e.*, excluding the axes with splayed blade) occur in the Later Middle Neolithic and Late Neolithic A, which were evidently the peak periods. The finds in South Britain are four times as numerous as those in the North; there are no finds in Yorkshire definitely attributable to LN B or C, but the trade to East Anglia and the Thames Valley continued into these phases.

The flint trade from South Scandinavia to Britain calls to mind the South Scandinavian flint export to northern Norway and Sweden during the same periods (cf. Clark, 1948, 219 ff.; Becker, 1952, 31 ff.) but it is doubtful if the trade to Britain has the same significance. The Scandinavian flint trade represents well-organized commerce, attested by large merchants' hoards of flints, to areas without flint resources of their own; while there are no comparable hoards of imported flints in Britain (except the Ramsgate hoard of three implements), and the strays are found in areas where there could have been no conceivable economic need for flint importations. The British finds are rather to be taken as flints individually brought by mariners engaged in employments other than flint trading, or perhaps brought along by Beaker immigrants from the Netherlands, where South Scandinavian flints are also fairly common.

It might seem natural to connect the appearance in Britain of the products of the

South Scandinavian flint workshops and mines with the trade in the other Northern export to Britain which survives in substantial quantities, amber.

The pattern of the amber trade is, however, quite different from that of the flints; it clearly implies well-organized commerce, and proceeds directly to the best market, the Wessex Culture, which in turn may have traded occasional ornaments of the precious gum to such distant places as Tara and the Knowes of Trotty. A few examples of Northern amber appear, however, to have reached North-Eastern Britain independently of the Wessex amber trade as beads or buttons appearing in Beaker graves at Ardiffery, Driffield, and Acklam Wold. Special interest is attached to the Acklam Wold bead, as a virtually unique example of a characteristic and datable Scandinavian export found in a datable grave in Britain. It suggests that British A Beakers run on into the period of the Northern Late Neolithic; Late Neolithic A would be a probable date in view of the bead (paralleled at Skogsbo) and the leaf-shaped flint dagger. Imitations in jet, shale or bone of Northern types of ornaments – studs like DO II 305 and the double-axe bead from Wessex graves at Manton, and the ring-pendants from Stanton Harcourt (Grimes, 1943/4, fig. 14d) Wessex and Yorkshire (Piggott, 1938, 83 ff.) support the case for direct trade between Denmark and Britain across the North Sea, since the types are not known in the intervening areas of North-West Germany and the Netherlands. The ring pendants, a Late Neolithic type in Denmark, support the argument for Later British Beakers overlapping the Northern Late Neolithic. Whether the main Wessex amber trade was conducted through the medium of the Saxo-Thuringian merchants, or by overland route across North-West Germany and the Netherlands, or directly by sea is difficult to establish but the Wessex connections with Saxo-Thuringia are so much stronger than their direct links with South Scandinavia that there is perhaps a greater probability of the first alternative. There is, however, the Fjallerslev segmented faience bead in the amber territory, and the Virring axe which may be a local copy of a Wessex export, to support direct Wessex connections with North Jutland in Wessex II, the peak time according to Ap Simon, of the Wessex amber imports.

The return products from the British Isles to South Scandinavia are, however, overwhelmingly of Irish type, consisting of 15 halberds and an equal number of recognizably Irish axes. They are strikingly absent from North-West Germany and Schleswig-Holstein, and concentrated mainly in North Jutland, the Danish islands and Scania. Some Irish gold may also have been exported to these regions, although the gold objects found there cannot be claimed as of Irish workmanship; yet Irish gold ornaments in the form of basket earrings have been found in Poland, and a bronze copy of an Anglo-Irish (?) basket earring appears in the Tinsdahl hoard in the Elbe mouth region (Montelius, 1900, fig. 143).

The North Jutland group of Irish axes – the flat axe of Migdale type from Mors

in the Limfjord and the decorated axes from Gallemose and Ulstrup – together with the halberd from Skalsaadalen strengthen the probability that the principal route of importation was by way of the Limfjord route; probably departing from Yorkshire or Scotland. A significant number of the axes are of North Irish workmanship, the recently published find from Ulstrup adding two excellent examples to these of the Connor-Selchausdal type pointed out by Megaw and Hardy. We have suggested that a trading centre for imported metal-work, and probably also for the export of amber and flints, existed near the mouth of the Gudenaa in the Randers Fjord, which would account for the Gallemose, Ulstrup and Virring hoards concentrated in that area. Similar trading centres may well have existed in the Danish islands or Scania. Glob postulates the existence of a specialized class of merchants in Late Neolithic times, who conducted the trade in amber and flints and the metals acquired in exchange; as with the amber in Britain, the metals in Denmark gravitated to the best markets, the rich farmlands of the Gudenaa Valley and the Islands and Scania which must then have been under cultivation by the people who built the Northern Stone Cists.

The exact chronological limits of the axe-and-halberd trade have been difficult to determine because of the paucity of closed finds; the halberds have been traditionally assigned to the Northern Middle Neolithic and the decorated axes since Forssander to the Late Neolithic. We have assumed that the two types are in fact contemporary; their distribution is virtually identical, suggesting that they are part of the same trade pattern. Irish decorated axes and halberds are demonstrably contemporary at Dieskau. The flat axes of Migdale type belong to the same phase, on the evidence of British hoards and the Wageningen hoard in the Netherlands. The upper limits of the trade cannot be directly established by evidence on the Continent, but a maximum date is suggested by the Willerby Wold find – which we believe cannot be older than Northern MN IV–V. The Gallemose hoard established some decorated axes as contemporary with the time of the princely tombs in the Saale valley – conventionally equated with Northern Late Neolithic B, though the evidence is not unambiguous – and on typological grounds one might regard the Ulstrup double-looped decorated axe as no earlier than Wessex II and the Virring-Tinsdahl phase (*vor forste metalkultur*).

Whether the axes and halberds were direct imports from Ireland or were made by itinerant smiths who settled in South Scandinavia is a question which has been much discussed in the literature. The idea of a colony of Irish smiths in the North was first suggested by O Riordain, endorsed by Megaw and Hardy, and further developed by De Navarro, whe suggested that such itinerant Irish smiths taught the secrets of metallurgy to native apprentices in Scandinavia and thereby paved the way for the development of the Northern Bronze Age. Sir Lindsay Scott believed that the colonists came from Scotland rather than Ireland, and emphasised

that in view of the navigational difficulties involved in regular crossings of the North Sea the colony could not have maintained contact with the homeland.

The colony idea is an attractive one, and we have suggested above that such a colony was actually established in the Netherlands. But in the case of Scandinavia there is a difficulty: can we really postulate a smith's colony unable to maintain contact with the mother country? The essential requirement for a bronze-smith's activity being an assured supply of raw materials, it is difficult to visualize a group of craftsmen deliberately putting 300 miles of water between themselves and their source of supply unless the maintenance of contact were feasible. We must assume that regular contact was maintained with Scotland or Ireland – in which case the simple exportation of finished bronzes from Ireland becomes a more economical hypothesis – or else believe that the migrant smiths counted on securing supplies of copper or bronze in the North; such supplies would in the nature of the case have been of Central European origin. Metallurgical analysis of the Irish axes found in Scandinavia would, then, prove or disprove the colony hypothesis. Pending such a test, we are inclined to believe that the axes of purely Irish type found in the North were made in Ireland itself. An argument for this is that axes of the Selchausdal-Ulstrup type are among the finest products of the Irish industry – indeed, the looped Ulstrup axe is its masterpiece – and it is difficult to imagine that the best smiths in Early Bronze Age Ireland would have set off on so perilous and uncertain a venture.

We have suggested above that Later Beaker people were still current and in occupation of substantial territories in Britain as well as on the opposite side of the North Sea during the period of the Irish axe-and-halberd trade with the Netherlands and Central Germany, and that some of these Beaker folk are likely to have played a role in the actual trade itself. The same ought to be true of the Northern trade. Indeed, much of the evidence for the contemporaneity of the Later Beakers with the axe-and-halberd trade comes from North Britain: the Willerby Wold barrow, where Irish axes were apparently contemporary with a B3a Beaker; the Collessie cairn, where C Beakers were contemporary with a dagger with a gold pommel mounting datable to Wessex I, and the evidence of the elongated V-bored buttons which suggests that C and A Beakers overlap with the Northern Late Neolithic. These, together with the increasing evidence for the existence of Late Beakers in Ireland (O Riordain, 1954) strengthen the case for believing that the Beaker folk were a trading people and were present in the right place and at the right time to serve as intermediaries in the trade to Scandinavia. If our view of the chronology and course of the Beaker invasions is corret (below, p. 237–9) the North Sea must have been virtually a Beaker lake during the Northern Upper Grave period and the earlier part of the Northern Late Neolithic. Close continental relatives of the British Later Beaker people were certainly present in the Nether-

lands and North-West Germany during this time; their colonies existed not only in Drenthe and the Veluwe but along the major rivers of North-West Germany and even in Schleswig-Holstein, as recent German research has increasingly emphasised. According to Struve, 'Western' Bell Beakers may survive in Schleswig-Holstein (as in the as yet unpublished habitation site at Berlin, Kr. Segeberg) into the period of the Northern Type I and II daggers, and a number of examples have been cited of Beakers closely related to Later Beakers of Britain which are clearly contemporary with the Upper Grave period through association with characteristic battleaxes. Since the Beaker folk had the habit of negotiating the seas and rivers along our principal trade routes, it migh be supposed that they had a substantial part of the carrying trade in their hands. While Beakers of specifically Western origin, as opposed to North and Central German types, have not been found in Denmark itself, this in itself need not be a barrier to believing that South Scandinavian harbours were occasionally visited by Beaker folk from across the North Sea [1].

This view does not, of course, exclude the possibility that mariners from the Northern lands also sailed out into the North Sea and occasionally visited Britain. The maritime tradition in the Baltic is likely to be as ancient and as well-developed as that of the Atlantic route, and the people who brought South Scandinavian flints 1500 miles or more up the coasts of Sweden and Norway could have been capable of crossing the North Sea too. In the traditional view the South Swedish Boat-axe people were responsible for the flint trade to Northern Scandinavia, but Becker (1954) has recently argued that the Pitted Ware people were the principal mariners of the Baltic and should be credited with this commercial enterprise. While Miss Isobel Smith has recently argued against the long-established view of Childe that British Ebbsfleet and Peterborough pottery is to be attributed to an extension of the Baltic Dwelling Place-Pitted Ware folk to Britain, it may be that some of the parallels in ceramic decoration which gave rise to the older view are the result of contacts of this sort.

On the other hand, the Pitted Ware culture is not known to have outlasted the Middle Neolithic period in South Scandinavia (Becker, 1954, 123 ff.); on present knowledge their possible role in the Atlantic trade would therefore at most be confined to the pre-Wessex contacts discussed above. In the Northern Late Neolithic

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[1] In fact Struve shows on his map of Bell Beakers and Bell Beaker influenced Single Grave pottery (1955, *Taf.* 36) a number of finds of Beakers with features which he attributes to specifically Western Beaker influence in Denmark; a few of these are in the Limfjord area, and others along the Esbjerg-Fredericia route. Struve also suggests that the Northern flint daggers owe their origin to Beaker folk from Britain; indeed, the stray flint dagger from Brooklandsauthal, Kreis Norderditmarschen (his *Taf.* 9: 13) could be an exported British dagger.

there is considerable evidence for a Western European influx into parts of South Scandinavia, as witnessed by the well-known resemblances between the South Swedish stone cists of Skogsbo type and those of the S.O.M. Culture in France and Westphalia, reinforced by resemblances between Stone Cist and Horgen-S.O.M. pottery (cf. Vogt, 1938, 1 ff.; Childe and Sandars, 1950, 11 ff.; Piggott, 1954, 19), despite the reservations of Becker (1954, 150). There is, however, little to connect the S.O.M. culture with the metal trade.

In summary, the evidence suggests that there were two principal trade routes in use in our area during the Early Bronze Age: one directly oversea between South Scandinavia and Britain and Ireland, the other between Ireland-South England and the Low Countries, Westphalia, South Hanover and Saxo-Thuringia. During the Northern Early Neolithic only rare and sporadic trade is detectible, alongside the evidence for cultural contact between West and North adduced by Piggott; but to this period seems to belong the typologically earliest metal object in the British Isles, the Kirk Andrews sun disc-pendant. It is possible that the earliest types of copper objects – the tanged daggers and square-butted axes – came to the British Isles from Central Germany, coincidentally with the first Beakers, during the later Northern Middle Neolithic (MN IV–V). To this period seem also to belong the sun discs of Mere-Wexford-Niederkränig-Bognaesgaard type, and possibly the gold bracelets found in megalithic contexts in North-West Germany. Also in the later Northern Middle Neolithic, MN IV–V, traders or migrants from the Lower Rhine may have brought with them the Central European halberds and daggers which served as models for the Early Bronze Age industries of Brittany, Wessex and Ireland; at the same time, Western flint daggers may possibly have served as a stimulus for the Northern flint dagger industry in Schleswig-Holstein, spreading (in Struve's view) from there to South Scandinavia. By the Northern Late Neolithic the Irish industry had developed to a degree which enabled migratory smiths to set up shop in the Netherlands, exchange products with Saxo-Thuringia, and compete to a degree with the Saxo-Thuringian industry for the South Scandinavian market. The lunulae of our edge-grooved type appear to belong to this phase; at the same time Scandinavian flints were coming to Eastern England.

To what extent the trade pattern thus established persisted into the stage represented by Wessex II-Vor første metalkultur-Reinecke A2 is unclear. That Wessex II continued to receive important influences from the Central European Unětice industry is certain, but only the halberd pendants have a specifically Saxo-Thuringian character, while the precise inspiration of the Wessex cast-flanged axes is uncertain, and the pin imports and grooved ogival daggers evidently come from sources other than Saxo-Thuringia. The advanced character of the Ulstrup double-looped Irish axe affords some ground for supposing that the Irish trade extends down to *Vor første metalkultur* but closed finds to support this suggestion are

lacking. The Virring axe and the segmented faience bead from Fjallerslev point rather to the opening up of connections between the North and the English Channel region, which is supported by the South English distribution of Danish amber and late Northern flint axes; thus foreshadowing the dominant trade pattern of the Middle Bronze Age. It appears that the end of the Early Bronze Age was one of crisis for the older, established bronze industries; the Saxo-Thuringian industry disappears entirely from the record, and the Irish influence in Northern Europe is no longer detectible. The explanation for the change may be a purely economic one. During the classic period of the Early Bronze Age the bronze-smith's art was a relatively monopolistic one, centred in the primary metal-producing areas such as Hungary, Bohemia, Saxo-Thuringia, Ireland and Brittany. But in the course of the period migratory smiths began to set up workshops in regions lacking in indigenous metal resources, and to produce objects adapted to tastes of their local customers. The local industries represented by the Arreton Down industry in Wessex, *Vor forste metalkultur* in Denmark, the Oder-Elbe and Malchin groups in North-East Germany and the Sögel and Lüneburg groups in North-West Germany are all illustrations of this process. A similar process gave rise to the Adlerberg and Straubing industries in South Germany and then to the local groups within the Tumulus culture distinguished by Holste. The result of this increasing competition must have been a shift in emphasis on the part of the older industries, on the one hand to the exportation of ingot metal rather than finished objects, and on the other to the production of more specialized types which could not so easily be produced by small local workshops. The vast numbers of ingot hoards which characterize the closing phase of the Central European Early Bronze Age and the wide diffusion of some early sword types may be indications of this process.

In any event, the Middle Bronze Age brings with it a substantially different pattern of trade relationships.

III. THE MIDDLE AND LATE BRONZE AGE

(Fig. 47–48)

The exchanges between the British Isles and Northern Europe during the Middle and Late Bronze Age can be grouped broadly in five successive trade phases. Certain types will, of course, be common to two or more of these phases, and others are of uncertain life-time. The duration of a trade-phase need not correspond exactly with the duration of one of the Montelian periods of Northern Europe, nor with that of a sub-division of the relative chronology of the British Isles. With these

reservations, we outline the trade-phases and the chronological periods to which they broadly correspond as follows:

1. *Ilsmoor phase.*
   Broholm I; late Wohlde; early Middle Bronze Age in Britain and Ireland (Acton Park-Burley).
2. *Ostenfeld phase.*
   Broholm II (M IIbc, Kersten II AB), perhaps extending into part of Montelius III; later Middle Bronze Age in Britain.
3. *Taunton phase.*
   Later Montelius III, part of IV; traditionally Late Bronze Age I in Britain; our Taunton-Barton Bendish (Glentrool, Bishopsland) horizon; time of the 'first swords'.
4. *Bargeroosterveld phase.*
   Advanced Montelius IV; developed Late Bronze Age I; Nettleham-Wilburton phase.
5. *Carps tongue - M V phase.*
   Montelius V; British LB 2 and 3; Irish Late Bronze Age B.

The *Leitmotiv* running through all these phases is the trade in bronze axes, which continued without interruption, and provides us with dated contact finds in each phase. Spearheads may well have been involved in the trade of all phases too, but the dating evidence is less secure, and the non-looped spearheads have been insufficiently studied. Very probably there was a trade in Northern amber and in Irish ingot gold at all periods. Short-lived types help to fill out the detailed pattern in each of the individual phases to be discussed below.

1. *The Ilsmoor phase*

As shown in Chapter III, the British (or Britannico-Sequanian) palstave trade extended over a long time; it runs through our phases 1 to 4. Its greatest bulk falls, however, in phases 1 and 2. The distinction between phases 1 and 2 is not merely typological; there is a marked difference in the character of the activities represented in them.

Phase 1 is defined by the hoards of the 'Ilsmoor horizon' in North Germany. The chronological position of these hoards has recently been reviewed by Hachmann (1957); he places them late in his Wohlde phase in Northwest Germany, corresponding with the time of the Valsømagle hoard in Denmark (Broholm's period I) and with Tumulus B2 in South Germany. They coincide with his Horizon IV. The main types of palstaves exported from Britain at this time were the early shield-ornamented palstaves (our types IA1b–c), some flanged-blade palstaves (IA2) and some plain palstaves (IA4). All the palstaves of this phase are unlooped.

There is no unambiguous evidence for the exportation of British spearheads during the Ilsmoor phase. Yet the Sporuplund spearhead (p. 96), which was not

deposited until Broholm II, might have been made and exported during Phase 1. The Liesbüttel and Skowarcz spearheads we assign to Phase 2 (see Chapter V); the Neuhaldensleben spearhead is not certainly of British manufacture. A relationship certainly exists between the Northern spearheads current in the Valsømagle-Wohlde phase and the British looped spearheads of Hawkes types C3 and D3 (flattened basal loops, leaf-shaped blade), but the question of which way the influence ran requires detailed study.

The tanged razor from Drouwen, Drenthe, found in a Sögel grave (Fig. 33: 1; pp. 115 ff.) appears to the writer to be a British export or a Continental copy of a British Class I razor, and should belong to the beginning of Phase 1, or even earlier.

From the economic point of view the outstanding feature of Phase 1 is the remarkable distribution across Northern Europe of small merchants' and founder-merchants' hoards, sometimes containing nothing but British-Northwest French palstaves, sometimes a mixture of Western and local types. These hoards rarely contain as many as twenty axes. In some cases (*e.g.* Stade) it is clear that Western and local types were being cast by the same smith; in these cases we can, as Sprockhoff remarks, only guess at the 'nationality' of the smith. In the case of the Voorhout hoard in South Holland, it appears possible, however, to identify the smith as a visitor from North Wales. One hoard containing nothing but Western palstaves actually lies east of the Oder, at Pyritz.

The distribution of early shield palstaves (Map III) suggests that as with axes and halberds in the Early Bronze Age, there was a route from the Old Rhine mouth (Voorhout) across Westphalia and through the *Porta Westfalica* to Central Germany. The two finds (both hoards) in the Stade district emphasize the importance of the Elbe mouth as a point of entry. By which of these two routes the finds in the Oder region arrived is difficult to determine. A few finds occur also in North Jutland and the adjacent Göteborg district in Sweden. The Habsheim hoard in Alsace shows that a similar trade went up the Rhine.

The background of this curious penetration of North Germany by Western palstaves, and perhaps by Western smiths, is to be sought ultimately in the collapse of the once all-powerful Unětice industry, leaving a gap to be filled by whoever had the means[1]. A great decentralization of production followed the Unětice climax.

[1] Possibly this is putting the cart before the horse; it is conceivable that the Unětice giant with its highly centralized production and distribution system broke down because of the increasing competition of the local industries which were springing up everywhere in Late Unětice times. Possibly too many Leubingen-Helmsdorf chiefs were extracting too much tribute from the Unětice trade; local industries, importing only the raw materials, could escape the extortions and at the same time provide bronzes to the local taste. In this view the Unětice hoard-horizon would represent not a political or military catastrophe but Europe's first crisis of over-production; the stocks of unsaleable bronzes accumulating like motor-cars or television sets in a trade slump of our own times.

In Central Europe, all of Holste's regional Tumulus groups appeared; in South Scandinavia, *Vor forste metalkultur* ripened into the Valsømagle industry, or what Hachmann (1957) prefers to call the Mosbaek group. Northwest Germany, which had remained firmly stone-using during classical Unětice times, developed the local industry characterized initially by 'nicked' flanged axes and Sögel daggers, dirks, or rapiers. For these, Sprockhoff (1941, 34 ff.) cautiously suggested a Western European origin; but Hachmann (1957) has meanwhile argued in convincing detail for the derivation of the Sögel daggers, etc. from the Apa-type swords of Hungary, the *geknickte Randbeile* from the West Alpine region, during Reinecke A2, and the trapeze-hilted rapiers of Wohlde type later (not before B1) from Central Europe. These types clearly have nothing to do with the Atlantic West[1].

Probably the new Northern industries were short of both skilled craftsmen and raw materials. They produced mainly weapons, and no very great quantity of these.

The North European hoards of the Ilsmoor horizon make it certain that at the time of Hachmann's Wohlde phase there must have been an industry in Britain capable of exporting not only its palstaves but its merchant-smiths to the Continent. Since the shield-palstaves of the types shown to be early by the Continental hoards can in the British Isles be broken down into at least four more or less contemporary regional varieties (we have distinguished 'Irish', 'Welsh', 'South English-Northwest French' and 'East Anglian' variants), it appears that there were at least four regional bronze industries in the British Isles at that time. Neither the Irish nor the East Anglian industries contributed to the trade of the Ilsmoor horizon; the Northern finds of shield-palstaves all stem from the Welsh and South English-Northwest French groups. The Acton Park hoard in Denbighshire and the Burley hoard in Hampshire contain palstaves only of types represented in the Ilsmoor horizon abroad, and therefore may be taken to typify an early phase of the Middle Bronze Age in Wales and South England respectively; and it is from these indus-

[1] Derivatives or relatives of the Sögel and Wohlde daggers and rapiers can be cited from Britain and Ireland, where they are not altogether uncommon; but they have not yet been systematically studied, so it is difficult to say whether they represent an influence from Northwest Germany or a parallel derivation from Central Europe through France. Examples (none with the capped rivets normal to the Sögel and Wohlde types, but having the thin midrib normally found on these types): Thames at Thames Ditton (B.M. BAG fig. 8), very Sögel-like; Chatham Dockyard, Kent (Jessup, 1930, 102, Pl. V: 2; Sprockhoff, 1941, Abb. 34), Sögel-like, but hilt-plate damaged; Quaveney, Cambs. (Fox, 1923, Pl. VII: 15), Wohlde-like; also Teffont, Wilts., (Cat. Devizes Mus. II, Pl. XVII: 1; Ashton Keynes, Wilts. (*Ibid.* 70, fig. 14); Heyshott, Sussex (Curwen, 1937, fig. 44: 3). The 'Wohlde-like' blades here cited have two rivets, not four as is characteristic of the Northwest German specimens. For the distinction of the Wohlde from the Sögel type see Hachmann, 1957, and his numerous illustrations. The small four-riveted dagger attributed to Wroxeter, and doubtfully associated with a halberd (O'Riordain, 1937, 200, fig. 5) is very similar to true Wohlde daggers in its blade form.

tries that the merchant-adventurers set out to carve a sphere of influence on the Continent[1].

To what extent this invasion of smiths might have been motivated or influenced by the existence of a common population on both sides of the North Sea at this time is a problem which we shall touch upon later.

2. *The Ostenfeld phase*

Phase 2 is defined by the developed Montelius II (Broholm II, Kersten IIA-IIB) hoards and graves containing British and British-Northwest French exports. Palstaves are the most common type; some spearheads are also assignable to this phase. A group of rapiers not closely dated may belong to this phase or the next.

The Western palstave *repertoire* involved in the export-trade now includes looped as well as unlooped palstaves, and narrowbladed types (our Class II) as well as broad-bladed palstaves of our Types IA2 (trident), IA3 (groups of short ribs), IA4 (plain) and IB (side-flanged blade)[2]. The Liesbüttel and Sporuplund spearheads (pp. 96–9) are datable to this phase by associations, and the Aasbüttel and Scowarcz specimens and one or two of the looped spearheads from Drenthe probably belong here too. The Nim and Ehestorf razors (p. 116) are dated to this phase.

In phase 2 we no longer find in Northern Europe the merchants' or founder-merchants' hoards consisting wholly or partially of Western types which were so typical in the preceding phase. The day of the journeyman smith from the West was over. The reason for this is plain enough; South Scandinavia was now in its *Stortid*, with a great bronze industry producing on a massive scale; to its south, the Ilmenau Culture satisfied its own needs or secured bronzes by a considerable trade with the North; and there was no market for any systematic importation of finished bronzes from the West. This applies, however, only to the territories bey-

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[1] The absence of Middle Bronze Age moulds in South England and Wales led Hodges (1956, 66) to suggest that in the Middle Bronze Age 'lowland England played no part in the actual production of the implements'. But from the Wessex period onwards South England has metal-types rare or absent in Ireland; and we were able to confirm in Dublin that the shield-palstave varieties here categorized as Welsh, South English-Northwest French and East Anglian are indeed rare in the Irish material. The typological evidence thus contradicts the mould-evidence. To the moulds we shall return below.

[2] None of the shield-palstaves of the types represented in Phase 1 are clearly datable by associations to this phase, except possibly that in the Neuhaldensleben hoard, which is difficult to date closely; the second Western palstave in this hoard looks late, while the spearhead could be considered early, and the Bohemian palstave is not closely datable. Western hoards (Gloddaeth, Mont St. Aignan) show that the early shield palstaves do not die out with the early phase of the Middle Bronze Age in the West, so some of the stray finds of 'early' shield palstaves in Northern Europe may conceivably belong to Phase 2.

ond the Weser; in Northwest Germany and the Netherlands different conditions prevailed.

First, we must notice the concentration, unparalleled in any other phase, of easily identifiable British exports found along the west coast of Jutland, from the Storaa to the Elbe: the palstave finds from Frøjk, Aadum Mose, Tim s., Ostenfeld and Albersdorf, and the looped spearheads from Liesbüttel and Aasbüttel. These give a strong impression of a coast-wise trade; which is fortified by the group of rapiers centring on the Elbe Mouth region, if these really belong to Phase 2. Down the West Jutland coast, or parallel to it along the various branches of the *Ochseweg* or *Heerweg*, an important amber route is said to have run (Brøndsted, 1939, 94; Kersten, 1951), connecting with the Elbe and Weser routes to the south. And apart from amber it is difficult to suggest any particular reason for a concentration of British-Northwest French trade with the barren heath-lands of West Jutland, though the older moraines of West Holstein are more fertile, and strategically located for command of trade. Yet the period concerned should be too late for the main Wessex amber trade, and too early for that of the Late Bronze Age. Perhaps the amber imported to Britain in the Middle Bronze Age mostly went up in the smoke of cremation fires[1]. Or does the Wessex Culture really last as late as Broholm II, as would be suggested by the Sporuplund spearhead?

In any event, the handful of Western palstaves and spearheads found along the Jutland coast must be interpreted as the surviving visible symptoms of more extensive trade in something else, and not as the primary objects of trade in themselves. Another possibility that suggests itself is that the West was delivering supplies of raw metal – copper, tin, gold – to the Northerners, who had a massive metal industry to maintain without an ounce of native ores. The North undoubtedly imported metal from Central Europe, but this does not exclude the possibility, which can only be suggested and hardly proven as yet, that there were metal deliveries from the West too. There is a remarkable concentration of gold finds in Jutland in Montelius II and III; mainly of wire spiral ornaments, certainly not made in Ireland, and probably of local make from imported gold supplies. Some

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[1] Some amber finds with late Wessex-Overhanging Rim Urn associations (for references see Fox, 1943, 126): Hengistbury, Hants.; Upton Lovel, Wilts.; Normanton, Wilts.; Bloxworth Down, Dorset; Oxsettle Bottom, Sussex; Easton Down, Wilts. We have elsewhere (Butler and Smith, 1956) suggested a Middle Bronze Age date for Winterslow, Wilts. (*Ibid.*, 31) with urns, razor; Blackheath Cross, Todmorton, Yorks. (*Ibid.*, 32); Chard, Somerset (*Ibid.*, 35). Middle Bronze Age amber finds in the Netherlands include Weerdinge, Drenthe, Tumulus 2 (Van Giffen, 1930, 76 ff.); Roswinkel, Drenthe (Van Giffen, 1943, *Afb.* 42) Elp, Drenthe, Grave G (Waterbolk, 1961, 126 ff., fig. 2: 19) and, of course, the famous Exloo find, if segmented faience beads be allowed to survive to this time. We are not here equating all these finds with Broholm II, but merely suggesting there may be a continuity of amber imports to Britain from Late Wessex times onward.

Continental authorities (e.g. Kimmig, 1948/50, 91; Von Brunn, 1955, 91) have thought that the Northern gold of the Middle Bronze Age is more likely to be of Irish than of Transylvanian origin; and perhaps they are right.

In Denmark, North Germany, and the Netherlands, the imported Western palstaves were widely imitated, giving rise to the entire series of Northern, North German and Dutch 'work palstaves'. The palstave apparently found in a grave at Driffield, Yorks. appears to be the only example of a Northern palstave exported to Britain, apart from the dealer's specimen attributed to Wellington, Somerset (see p. 70). The metal-hilted dagger from Blackrock, Sussex (C. M. Piggott, 1949, 115 ff., fig. 1: 1) appears also to be a Northern Period II export, though found in a hoard of later date. The Lansdown, Somerset gold sun disc (p. 174) suggests a Northern Period II contact, but is too uncertain as to its original form and its date and place of manufacture to be reliably identified as such.

The Netherlands and Northwest Germany have, apart from the small number of ornamented Western palstaves shown on our Map IV, a very large number of plain palstaves of generally Western form, which were mapped by Sprockhoff (1941, *Abb.* 35a). The formidable task of dividing these into actual imports, imitations and local variants has not yet been attempted. They become rare east of the Weser basin, although a few examples reached the Ilmenau. Apart from a few examples in the hoards of the Ilsmoor horizon, these plain palstaves are almost all stray finds, so their chronological subdivision among our phases would be precarious at best. Taken as a whole, they show that the Netherlands and the Ems-Weser region were under Western influence during the Middle Bronze Age as far as their axes were concerned; although for other types they seem to have depended more on the South and West German Tumulus Bronze Age. The absence of hoards makes it impossible to tell whether the migrant-smith pattern of trade of Phase 1 continued into Phase 2 (or into Phase 3, for that matter) in this region.

As Middle Bronze Age British exports, belonging either to Phase 2 or 3, we may claim the looped spearheads from Borger, Onstwedde, and Obergrünhagen, and perhaps that from 's-Hertogenbosch, and the rapiers from Emmen and Nijmegen?; the rapiers from Maastricht, Lobith and Greffen perhaps being Continental imitations. (Chap. VI; Map VIII). These contribute to the pattern of British influence upon the Netherlands and Northwest Germany.

At some time during the Middle Bronze Age – certainly by Phase 3, probably earlier – Britain and Northern France may have acquired from Northern Europe the technique of using moulds of bronze for casting palstaves (Chap. III; pp. 66–7). The technique was in use in the North in Broholm II; its practicability and advantages have recently been shown experimentally by Drescher (1957); and where suitable stone for moulds was rare, as in lowland England, there would be every reason for its adoption. To travelling bronze smiths of the sort implied by the

hoards of the Ilsmoor horizon, it would have been invaluable. One would not expect many bronze moulds of the Middle Bronze Age to survive; they would never have been in the possession of any one but a bronze smith, and the smith normally had a melting-pot ready for a worn-out specimen. The fact that only five bronze palstave-moulds are known from Britain, and a few from France, need not mean that the technique was not extensively used[1].

3. *The Taunton phase*

Here for the first time we can record a marked Northern industrial influence on Britain.

Most important are the socketed axes of Taunton type, which can be identified (Chap. IV; Map V) as imports and imitations of the Hademarschen type of Mecklenburg and adjacent districts. Then there are the twisted neckrings (Chap. XI; Map XI), a Scandinavian-North German type likewise imported into and adopted in Britain. The Glentrool pins (p. 148 ff., Map XII), found rarely in Scotland and Ireland, also derive from North Germany, apparently from the district near the Elbe-Havel junction, which is on the border of the region in which the Hademarschen axes occur. The Cothill, Berkshire, razor (Sprockhoff, 1941, *Abb.* 69: 2), the Blackrock, Sussex decorated finger-ring (C. M. Piggott, 1949, 116 ff., fig. 1: 3) perhaps the Ramsgate decorated bracelet (p. 155) and, rather dubiously, the Spindlersfeld fibula in the Ixworth collection (which may be a modern collector's import; p. 147), also illustrate connections with North Germany.

In addition, there are a number of new types which appear in Britain – like twisted bracelets, ribbed bracelets, knobbed sickles – which might have reached Britain either from Central Europe and France or from Northern Europe, their exact origin being difficult to localize.

The Hademarschen axes, the Glentrool pins, and the Blackrock finger-ring, may come to Britain from a common source in East Germany; the neckrings (both the hooked-terminal type which became the normal type in Britain and the Middle Elbe type with plain terminals represented uniquely in Britain at Hollingbury Hill) are also represented in the Spindlersfeld-Weitgensdorf horizon in East Germany, from which the other types come; so it may be supposed that all these forms arrived in Britain as part of a single movement. It was more than a casual importation, since it resulted in socketed axes and twisted ornaments being manufactured for the first time in Britain; a transfer of techniques is involved.

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[1] The bronze mould for a palstave of British type attributed to the Lüneburg region has been shown by Drescher (1957) to be a modern copy. The original from which it was copied has not been identified.

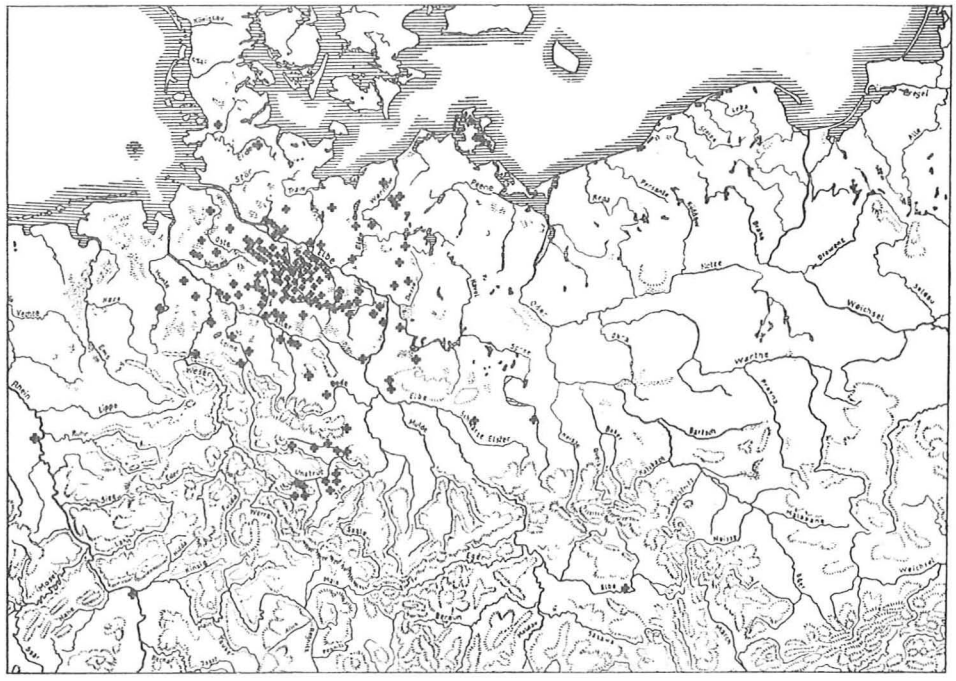

Fig. 47. Area of the Ilmenau Culture of the Middle Bronze Age, as defined by the distribution of Ilmenau bronze bracelets, Montelius Period III. After Sprockhoff.

The close dating of this movement from East Germany in Continental terms involves the assumption that several of the types did indeed arrive together. Individually, some of them had a rather long life; but if they left at the same time, their departure must have occurred at a point which is common to the lifetimes of each of the types involved. Here we need merely summarize the dating evidence, which was considered in detail in the appropriate chapters.

The Form II neckrings: lifetime Broholm II to Montelius V, though really very common only in Montelius III, and rare afterward;
The neckrings with plain ends (as Hollingbury): mainly Montelius IV, though represented already in some East German finds of Montelius III;
The Hademarschen socketed axes: dated by only four finds, two of them in Montelius III, one in IV, one in a founders' hoard of V. Main lifetime presumed by Sprockhoff to be Montelius III-IV; otherwise they would be better represented in Period V hoards.
The Glentrool pins: dated by three German finds: one in Period II, two in Montelius III.
The decorated finger-ring (Blackrock) has its parallels in Montelius III.

Montelius III is the only point of time common to the life-time of all these types. This would be the time of the Marzahne grave, which has two of our types (neck-ring with plain ends, Glentrool pin) and of the Hademarschen grave, with the

westermost example outside Britain of the socketed axe type to which it gives its name; it would also agree with the dating of the alleged Ilmenau prototypes of the Ramsgate decorated bracelets, the Ilmenau bracelets being a typically Ilmenau Middle Bronze Age form. It would appear that the turn of Montelius III-IV would be the last possible date that such an assemblage could have reached Britain as a unit. In Central European terms this might be at or just after the turn of HaA1-HaA2 (Arneburg, see p. 148).

The contemporaneity of the types concerned seems from the British side to be well assured. They occur characteristically in finds of a group discussed rather considerably in recent literature (Fox, 1941; Hawkes, 1942, and also *Inventaria* GB, 5–7; C. M. Piggott, 1949; Savory, 1948; M. A. Smith, 1959), which are united by the common possession of certain rather short-lived types, native and imported: Picardy Pins and their derivatives, Sussex Loops, twisted neckrings, spiral finger-rings, large 'loop-headed' or 'quoit-headed' pins, and others. We group the Somerset hoards, the Picardy Pin and Blackrock find-groups, the Barton Bendish hoard in Norfolk, the Oxford hoards, and certain others (see list below) as a 'Taunton-Barton Bendish phase' in South England.

The dating of this find-group, or of its various individual components, has, however, offered considerable difficulty; the extremes have ranged from the Middle Bronze Age, before 1000 B.C., to the very end of the Bronze Age, c. 500 B.C. Mrs. Piggott (1949) was troubled by the apparent occurrence in the Blackrock hoard of Northern imports datable to Montelius II, III and IV; though the individual objects concerned should not have had a long survival-value. She dated the Blackrock hoard and the other finds of this horizon to the transition from LB 1 to LB 2, c. 750 B.C., contemporary with late Montelius IV; but called particular attention to the discrepancy with the North European chronology thereby created. Curwen (1954, 202–3), who had previously dated the Blackrock and related finds to the Middle Bronze Age, accepted Mrs. Piggott's dating with obvious reluctance, pointing out that the Blackrock types of palstaves never occur in Sussex hoards of the Late Bronze Age, *i.e.* with socketed axes. Sussex is hardly likely to have been a retarded area in the period concerned. Recently, Hawkes (*Inventaria* GB 5–7) has assigned the Oxford hoards to LB 1, but the Barton Bendish hoard to LB 2; and Savory (1958) has equated the Somerset hoards, and the Welsh hoard from Ffynhonnau, with 'Late Bronze Age I, c. 1000–800 B.C.'.

With Curwen, we must emphasize that the native types in this horizon are, despite the occasional socketed axe (Taunton; Oxford Leopold St.), Middle Bronze Age types; and add that imports from the Continent are also essentially of Middle Bronze Age character, with only a hesitant foot in the Late Bronze Age. Savory makes the same point (1958, 5).

In any event, it is clear that the Taunton-Barton Bendish phase is essentially

earlier in origins than the typolically more advanced group of finds represented by hoards of the Nettleham-Wilburton type; with no more continuity or overlapping between them than is to be expected in any two sucessive phases. If both these find-groups be assigned to LB 1, then the Taunton-Barton Bendish industries should represent an early horizon within LB 1. This will perhaps be clearer after we have discussed the North European connections of the Nettleham-Wilburton industry.

In considering what went back from Britain to Northern Europe during trade Phase 3, we are handicapped by the fact that no identifiable British export has come to light in any grave or hoard in Northern Europe accompanied by good Montelius III objects. The only possible exception is the palstave in the Brandstrup grave (p. 68), which is of Western type. The Wiesloch find in the Rhineland helps indirectly, since its Hallstatt A1 date should equate with late Montelius III. Its badly damaged large basal-looped spearhead of Hawkes D3 type (p. 102) suggests that the Obergrünhagen spearhead in the Ilmenau region might also be a British export of the same period. The Onstwedde spearhead in the province of Groningen is also a D3, as are the still larger Belgian specimens from Duffel and Wichelen. D3 spearheads occur in our Taunton-Barton Bendish phase (Sherford, Taunton, Brading; see p. 100), though it is not certain that they are strictly limited to this phase.

In the Netherlands, a palstave ornamented with a thin midrib and short ribs flanking it, virtually identical with one in the Blackrock hoard (C. M. Piggott, 1949. fig. 2: 3) was found in a small personal hoard together with a sickle with two knobs (a variety otherwise known only in Tumulus Bronze Age contexts in Hungary and South Germany, and in the Somerset hoards of our Taunton-Barton Bendish phase) and a flanged stopridge axe of Middle Bronze Age tradition at Epe, Gelderland[1].

On Cowen's dating, some British-exported swords would belong to this phase (see Chap. VII); the present writer would rather group them with Phase 4.

Ireland and Scotland have a few connections of their own with Northern Europe during Phase 3. The Glentrool pins we have already discussed; the Glentrool hoard also has amber beads, and a fragmentary twisted neckring which may be an import from Northern Europe or from Somerset, one cannot tell which. In Ireland, apart from the unlocalized Glentrool pins, there are the St. John's, Co. Carlow twisted bracelets which seem to be direct imports, and the Northern influences on the Irish gorgets which Powell attributed to Montelius III, though this is really only a *terminus post quem* (Powell, 1953). The connection between the Irish trumpets and

[1] The Somerset two-knobbed sickles, which are discussed elsewhere (Butler, 1959) make this relative dating certain; they are a Tumulus type which disappears in Urnfield times in South Germany. But one has turned up in a HaA hoard in Hurgary: see *Arch. Ert.* 1963, 252 ff.

the 'pre-lur' horns of Wismar type from North Germany in Montelius III or IV, seems too vague to evaluate positively; probably they are both simply imitations of cows' horns, as suggested by MacWhite. The Bishopsland hoard, with its local copy of a Taunton-type socketed axe and a sickle with elongated knob, seems to reflect indirect Northern influence by way of Somerset; along with which goes the Annesborough hoard (?) with its twisted neckrings (see pp. 141, 143).

Lastly, mention must be made of the curious resemblance between Irish 'bowl' Food Vessels and the Northern gold bowls of Montelius III first pointed out by Menghin (1934); with Powell we prefer to think of the clay vessels as having been influenced by the gold ones than the reverse. The ring-ornamented pots from Birchington, Kent and Leusden Heath, Prov. Utrecht, are seemingly also clay imitations of the boss-and-ring ornamented gold vessels best known in Northern Europe.

LIST OF FINDS ASSIGNABLE TO THE TAUNTON-BARTON BENDISH PERIOD

1. Cambs. *Eriswell*, near Mildenhall. Sword related to Rixheim type; rapiers; fragment probably of 'fleshook' (goad) cf. Bishopsland; awl or punch; fragments of metal vessel. *Antiq. J.* XXXV, 1955, 218–9, fig. 1.
2. Dorset. *Blandford*. Monkton Farm. Looped palstave, spearhead Hawkes D3. B.M. 92, 9.1, 299–300.
3. Dorset. *Tarrant Monkton*. See p. 141, no. 4.
4. Dorset. *Holywell*, Evershot. See p. 141, no. 3.
5. Dorset. *Haselbury Bryan*. See p. 141, no. 2.
6. Essex. Southchurch, *Southend-on-Sea*. Ballintober sword, frag. of second sword-blade, palstave. Index of Bronzes.
7. Nants. *Brading*, Isle of Wight. Spearhead Hawkes D3, 11 penannular bracelets. *Arch.* LXXI, 138, Pl. X.
8. Hants. *Liss*. Bracelets with incised decoration. ABI 383, fig. 475; BM BAG 52, fig. 40.
9. Hants. *Plaitford*. Bowers Farm. Two twisted neckrings, side-looped pin; possibly assoc. with loomweight, sherds of globular urn. Hawkes, PPS 1942, Pl. VI, 44 ff.
10. Hants. *Portsmouth*. Looped palstave, 2 bracelets with incised decoration, 2 plain bracelets. *Arch.* LXXI, 139, fig. 4.
11. Kent. *Birchington*. 14 palstaves, pot with concentric circle ornament. *Antiq. J.* III, 220.
12. Kent. *Ramsgate*. 2 bracelets with incised ornament, ribbed bracelet. Grave (inh.). C. M. Piggott, PPS 1949, 118 ff., fig. 5, 6.
13. Kent. *Ramsgate*. Storage pot, 3 Picardy Pins, animal bones. Hawkes, PPS 1942, 26 ff., fig. 1, 2: 1–3.
14. Norfolk. *Barton Bendish*. See p. 142, no. 7.
15. Oxford. *Burgesses Meadow*. Palstave IB2b, spearheads Hawkes E3, socketed hammer, tanged chisel, frag. of knife blade, ingot. *Inventaria* GB. 6.
16. *Oxford. Leopold St.* Palstaves IB2b, looped and unlooped; looped palstave with vestigial trident; socketed axe. *Inventaria* GB. 5.
17. Somerset. *Batheaston* (*Monkswood*). See p. 142, no. 12.
18. Somerset. *Edington Burtle*. See p. 142, no. 11.

19. Somerset. *Sherford*. Spearhead Hawkes D3, six palstaves. Pring, *Britons and Romans on the Site of Taunton*, Pl. III.
20. Somerset. *Taunton* (*Union Workhouse*). Pl. X*a*. See p. 142, no. 15.
21. Somerset. *Wedmore*. See p. 142, no. 16.
22. Sussex. *Blackrock* nr. Brighton. Palstaves, 3 Sussex Loops, bronze dagger hilt, dirk blade, decorated spiral finger ring, 2 bracelets with slightly expanded ends. C. M. Piggott, PPS XV, 1949, 107 ff., figs. 1, 2.
23. Sussex. *East Dean* (Peadown). 3 large quoit-headed pins, 2 Sussex Loops. *Antiq. J.* XVI, 1936, 461–2, Pl. LXXXV.
24. Sussex. *Hanley Cross Barrow*, nr. Lewes. Grave (inh.). Sussex loops, large quoit-headed pin, large pin with engraved side-plate. Curwen, *Arch. Sussex*, 1937, fig. 49.
25. Sussex. *Hollingbury Hill*. See p. 142, no. 19.
26. Sussex. *Park Brow* (Stump Bottom), nr. Cissbury. Spearhead, Hawkes E4; 2 Sussex Loops; 2 spiral rings; amber bead on frag. of bronze wire. *Antiq.* J. VI, 1926, 444 ff.
27. Sussex. *Pyecombe*. Sussex Loops, large quoit-headed pin. SAC LXXII, 49.
28. Wilts. *Ebbesbourne Wake*. Twisted neckring, 16 bracelets. MWH LIII, 104 ff.
29. Wilts. *Thorny Down*. Spearhead, Hawkes Eiv, ribbed bracelet. PPS VII, 1941, 128 ff.
30. Pembrokes. *Monkton*. Palstave (frag.), twisted bracelet, triangular chisel, saw. Grimes, 1951, fig. 64: 9–11.
31. Glam. Penard. 2 Ballintober swords (frag.), spearhead, atypical socketed axe, bronze arrowheads. Grimes, 1951, fig. 71: 8–12.
32. Kirkcudbrights. *Glentrool*. See p. 143, no. 23.
33. Ireland. Co. Kildare. *Bishopsland*. Socketed axe of Taunton type, palstave, lugged chisel, saw, anvil, socketed hammers, sickle with elongated knob, 'flesh-hook' or goad. O Riordain, PPS XII, 1946, Pl. XIII.

4. *The Bargeroosterveld phase*

This phase is defined by contacts between the British Isles and the characteristic Northern industries of Montelius IV. Typologically it is easy to separate from phase 3, but difficult to segregate from Phase 5. Yet there must be a chronological Phase 4, into which must be put all standard Late Bronze Age products earlier than the Carps Tongue-Montelius V-late Hallstatt B period. The existence of Phase 4 depends on the assumption that no Montelius IV is as late as the second half of Hallstatt B. If this be true (and on contemporary theory Montelius IV corresponds mainly with the second half of Hallstatt A)[1] then any British export found in an unequivocal Montelius IV context must be pre-carps, pre-LB 2.

Appropriate contact-finds are rare, but not entirely absent. The two most important are those from Bargeroosterveld and Barrien-Bülten (p. 69) and that from

[1] Why West Alpine winged axes occur in Denmark only in Montelius IV, and in North Germany only in Montelius V, is a mystery awaiting clarification. Vogt (1949/50, 229) assures us that the Danish winged axes are of Ha A, not Ha B type. We follow the Northern authorities as to what is M IV and what is M V, but take the liberty of assuming some overlap between Montelius IV and early Hallstatt B, for reasons to be explained later.

Løvskal in Viborg Amt, Jutland (p. 85). The shield-hoard from Elskilstrup (p. 130) is important, though its attribution to Montelius IV wants confirmation; and the alleged grave find or hoard from Höver, with a British sword (Chap. VII) is a problematical one. The Gasteren grave (p. 117) contains a copy of a Western bifid razor and the Helmsdorf grave perhaps an exported one (p. 118).

These finds provide a Montelius IV *terminus ante quem* or *ad quem* for palstaves of Curwen's Type C (Bargeroosterveld; a late variant of palstaves of our Type IIB (p. 136 above); Yetholm-type shields (Chap. IX); socketed axes (without ribbed wing ornament) of our Southeastern type (Chap. IV); bifid razors (Chap. VID); and (in late Montelius IV or early V according to Cowen) a sword transitional between the British Wilburton and Ewart types (Höver).

The socketed axes, palstaves of Curwen's type C, and Wilburton swords are types represented in the Wilburton hoard, and typical of the industry we describe by that name; and which Savory (1958, 28 ff.) has also discussed under the name 'Wilburton complex'. It is certainly partially contemporary with the Carps-tongue industry; but the Northern evidence here cited establishes it as having begun within a developed phase of Montelius IV. Whether the shield-makers were directly associated with the Wilburton industry, or operated independently, is difficult to say; the distribution certainly does not support their attribution to the Carps industry, nor to Irish manufacturers.

Hollow-bladed spearheads (above, pp. 106 ff.) constitute at least a significant parallelism between the Wilburton industry in South England and Montelius IV in the purely 'Nordic' area; the origin of the type has not been determined, but the Scanian examples illustrated suggest that the British variety and the British-Irish spearhead type contemporary with it with lunate openings in the blade were imitated in Sweden.

The British types exported to the North in Phase 4 continue into Phase 5, so their distribution is best discussed in connection with that phase.

A curious connection between Scotland and Jutland in Montelius IV has been thought to be provided by the bone toggles (Piggott, 1958, 227 ff.; Childe, 1935: 136; Broholm 1933, 109; DB IV, 60 ff.; DO IV 91). The four Danish finds are all in urn graves; two are in Viborg, one in Aalborg, one in Vejle Amt. The toggle from Kennethmont, Aberdeens. (Callander, 1922/3, fig. 15: 7; Piggott, 1956, fig. 6) is very similar in form to the Danish type; others differ in varying degrees. The Scottish toggles are associated with a variety of Cinerary Urns. Childe (1935) used these toggles to establish a synchronism between the Scottish and the Northern Bronze Age chronology, but Piggott now suggests that the Scottish toggles are unrelated to the Danish ones. The exportation of metal goods from Denmark to Scotland is signified by the Dulduff tanged sword (found as an old piece in a later hoard) and the Carse Loch socketed axe, both apparently imports of Montelius IV.

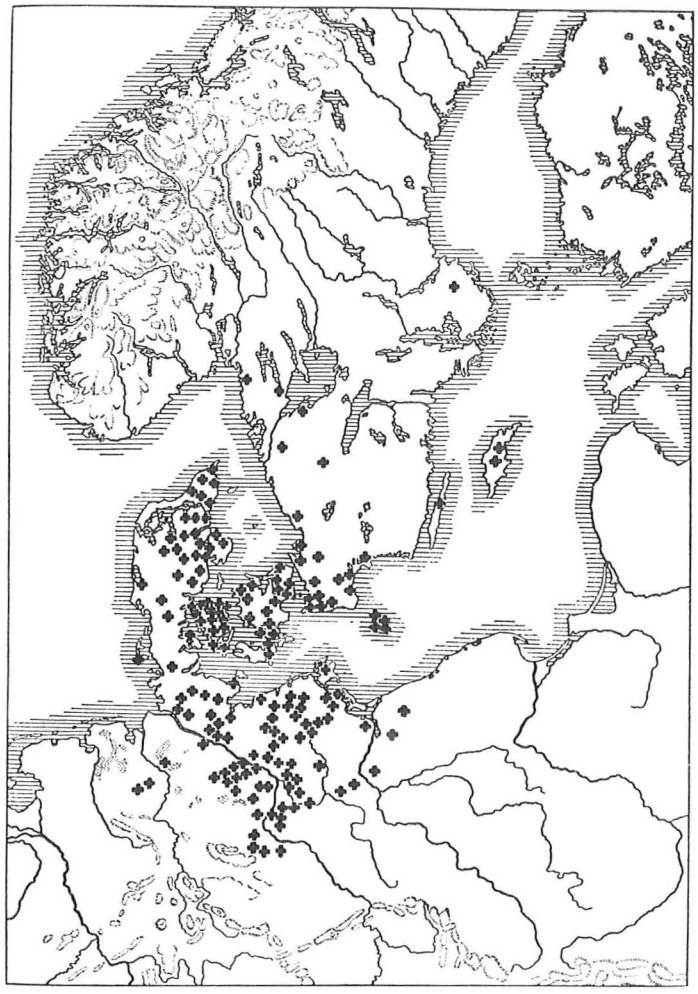

Fig. 48. The *Nordischer Kreis* in Montelius IV, as defined by the distribution of 'Nordic' bronze hoards. After Sprockhoff, 1937.

Two other tanged swords of Northern origin or inspiration are recorded, the specimens from Coleraine, Co. Derry, and the Thames at Kingston (Chap. VII). Some Irish and British socketed axes imitating features of the Northern Montelius IV Højby type have been cited (Chap. IV), and we have suggested that the 'Welsh' type of socketed axe shows signs of having been derived from the Højby type. There is apparently a tendency for these Scandinavian Montelius IV influences to cluster round the periphery of the Irish Sea.

From Central Germany, the Wilburton industry appears to have derived its bronze ferrules (Chap. X); the Ffynhonnau find in Wales constituting a contact-

find. Of unknown origin are the spearheads of Bargfeld type (p. 108), the blade form of which resembles that on some British spearheads.

We also assign to this phase, but admittedly more on grounds of general probability than proof, and contrary to the view of Cowen, the early British sword-exports (Badegow and the two 'North Brabant' swords), as well as the Höver specimen already mentioned.

Developed looped spearheads are difficult to date precisely; possibly belonging to this phase are the specimens found 'probably near Nijmegen' and at Oudenaarde, East Flanders (p. 102), both of Hawkes Type Eii. Whether the earliest 'faceted' socketed axes reached the British Isles in this phase is at present undetermined: we would like to believe that the narrow octagonal type reached the British Isles late in Montelius IV, so that the hoard from Kish, Co. Wicklow (Raftery, 1951, fig. 199) could be dated at about the transition of Montelius IV–V and stand for a developed phase of Irish LB A.

5. *The Carps tongue – Montelius V phase*

Although this phase takes its definition from the export products of the industries named in its title, it will of course include those of the Wilburton industry, which flourished on into British LB 2, and other British and Irish industries of the period.

Socketed axes exported from the West are not uncommon in Northern Europe; they include in this phase probably most examples of the Southeastern type (Map VI), some narrow faceted axes (we regard as Western exports the examples with double socketed-mouth moulding and with funnel-shaped socket-mouth moulding, and those with ribs on the angles) and the socketed axes with rib-and-pellet decoration. Probably most of these came from South England and Northwest France.

Western sword-exports include the Late Ewart type and the carps-tongue type, the former presumably mainly from the British Isles, the latter mainly from Northwest France (Map X).

In addition there are rare examples of Thorndon knives and socketed gouges (assuming that the latter are all of Western origin), a ferrule, an Irish cauldron, and Irish penannular bracelets[1].

No two of these types produce, when mapped, the striking identity of distribution pattern which we found for Irish axes and halberds in the Early Bronze Age. Since the numbers of objects involved are in each case small, the differences in

[1] The gold bracelet from Lunteren, Gelderland (Butler and Van der Waals, 1960). The gold bracelet from Gahlstorf, near Bremen (Grohne, 1939, 29 ff.), found in a pot of Harpstedt type, belongs to Northern Period VI; the copper bracelet from Baskemölla, Scania (Nerman, 1944, 342–3, fig. 1) looks strikingly like a West African *manilla!*

distribution may in some cases be purely a matter of chance; three or four new finds, or old finds brought to light, might alter the appearance of any of the maps considerably.

The Netherlands shows a fair number of Southeastern socketed axes, one Western narrow faceted axe and a mould, a rib-and-pellet axe, a Late Ewart and a carps-tongue sword; the finds concentrate in the South of the country and the Nijmegen area. The Hunze-Ems-Weser area has a few Southeastern axes (and the Gahlstorf ring); the foothills of South Hanover have a Western faceted axe, a rib-and-pellet axe, two Late Ewart swords, a carps-tongue sword. Central Germany has a Western socketed axe, two rib-and-pellet axes, a carps-tongue sword. The Lower Elbe region has a Southeastern axe, a Western faceted axe, a Late Ewart sword, a Thorndon knife. The Oder Mouth region (broadly speaking) has a Southeastern socketed axe, two rib-and-pellet axes, a Late Ewart sword, a carps-tongue sword, a Thorndon knife. Northwestern Poland has a Southeastern socketed axe, a British-Irish faceted axe; farther south is a rib-and-pellet axe and a carps-tongue sword. North Jutland has only the Abildholt cauldron (and the Løvskal Southeastern axes dated to Phase 4); South Jutland and the Danish islands, a Southeastern axe and a Late Ewart sword (with a fragment possibly of a second one, not mapped), a ferrule, and (presumably of Phase 4) the Elskilstrup shield. Scania has only a Southeastern socketed axe; Västergötland a rib-and-pellet axe; and Gotland two rib-and-pellet axes.

Of the nearly fifty Western[1] exports included in this tabulation, the Netherlands and Northwest Germany absorbed half (half of these in the Lower Rhine-Maas area, the other half scattered); a third were taken up by the 'Nordic' area (about equally divided between South Scandinavia and Northeast Germany-Northwest Poland); and the remaining sixth went to Central Germany and Southwest Poland. Northwest Germany yields rather less than one might have expected; the 'Nordic' area rather more. From the maps it appears that the Lower Rhine-Westphalian trade route, used in the Early and Middle Bronze Age, was still going strong; rib-and-pellet axes, Late Ewart swords, and carps-tongue swords seem to have gone that way. From Central Germany, the route fans out, leading on the one hand to Brandenburg and the Oder Mouth, and on the other, less important, to Southwest Poland. In Phase 5 this river-and-overland route seems to have been much more importance than the direct sea-route to Scandinavia; only the Abildholt cauldron can be cited as evidence for any interest in the Limfjord route, and the uniqueness

[1] We have included here British and Irish types and those which might be either of British or Northwest French manufacture; but not purely French types, such as Breton axes of the large 'square-mouthed' and small 'votive' types. If carps-tongue swords be considered as entirely of French manufacture, as has been thought by some authorities, they may be deducted from the totals; the pattern is not significantly altered.

of this find is emphasised by the fact that, apart from the Gahlstorf and Lunteren bracelets, it is the only certainly Irish product of the entire lot. The Thorndon knives (Tostedt, Böck) and the Western narrow faceted axes are, of course, types common in Ireland, but they are common in Eastern England too. It has yet to be shown whether Irish and English versions of these types can be distinguished. A case could be made out for importations to the North by way of the Elbe Mouth entry, supported by the Klint bei Hechthausen socketed axe, the Tostedt knife, the hollow-bladed spearhead from Harburg, and the Kronshagen ferrule; the Baltic imports might of course have come by this route as well as by the route across Germany. Southeastern socketed axes and Thorndon knives might have reached the Baltic region exclusively by this route, on the basis of the known distributions.

Western types were occasionally imitated in the North – some socketed axes, some ferrules seem to fall into this category – but in general the significance of the Western exports for the development of the industries of Northern Europe was very slight in Phase 5. We have suggested hesitantly that the Northern twisted neckrings of cruciform cross-section might have been influenced by the Irish type, which is certainly of earlier origin; but this is only a speculation. Northern Europe was, of course, under heavy Central European trade-influence at this time (Sprockhoff, 1950–1), and the East-West trade was a merely peripheral phenomenon.

North European trade objects found in the British Isles attributable to Phase 5 are extremely rare. The jangles from Parc-y-meirch and Lissanode (Chap. XIII) and the socketed axe from Warminster, Wilts. (p. 94) may be actual imports. If any of the Northern-style pins (p. 150–1) are actual imports, they will be mainly in Scotland and Northern Ireland; the majority are certainly imitations. The only Northern product known to have been exported to Ireland on a considerable scale in the Late Bronze Age is amber (MacWhite, 1944a), which occurs quite commonly in Irish hoards of the period; otherwise, it appears that only occasional prototype-objects were imported, to be imitated on a considerable scale by the native craftsmen. The Northern pins were closely copied, but a distinctive Irish variants quickly developed. Shields apparently stemming from the *Leistenbuckel* workshops of North Germany (Chap. IX) were imitated, but in wood and leather rather than bronze. Scandinavian socketed axes were at first closely imitated (p. 94–5) but soon transformed into purely Irish renderings. It is not very clear whether the Irish gold versions of the Northern bronze ribbed collars, the gorgets were based on Northern Late Bronze Age models or on older, Middle Bronze Age types; and for the late Irish sun discs (p. 173 ff.) no Northern Late Bronze Age parallels are known. More elusive still are the Irish trumpets (MacWhite, 1945, Hencken, 1951); they may have been inspired by the North German Middle Bronze Age 'pre-lur'

trumpets, or merely by a cow's horn, and only their ornamental cone-shaped studs are attributable to a Northern inspiration of Montelius V.

While the Irish craftsmen and the population they served were evidently extremely receptive to certain Northern influences and models, their receptivity was certainly highly selective. The transformation of bronze-types into gold or wood and leather, the alteration of forms to suit traditional native taste, the absolute rejection of the Northern curvilinear art in favour of old-fashioned geometry, all show that the Northern influence on Ireland was a superficial one. If the Northern influence upon Ireland appears strong, it is only by comparison with Britain, which, apart from a few imports to its Highland periphery (amber at Adabrock, Lewis, Childe, 1946, Pl. 12: 14, Balmashanner, Angus, PSAS XXVI, 182, Llangwyllog, Anglesey; the Parc-y-Meirch jangles, the Scottish sunflower and Orreck-Tarves pins, the cone-headed pin and amber bead from Heathery Burn) appears to have little to match. Yet, if we are correct in supposing a connection between the 'Welsh' type of socketed axe and the Northern Højby type, and between the British and Northern hollowbladed spearheads, and those with the blade-form of Bargfeld type (pp. 91–3, 106 ff.), then Britain in the Late Bronze Age had about as much connection with the North as did Ireland. Admittedly, the specifically Montelius V derivations from the North are almost totally lacking in Britain; which contrasts oddly with the fact that it appears to be Britain and not Ireland that sent so many bronze-exports to the North. It is an almost exact reversal of the state of affairs which prevailed in the Early Bronze Age, when Ireland was exporting the metals and South England was getting all the amber, Scandinavian flints, and Unětice exports. An adequate explanation of this situation is not easy to find.

MacWhite has suggested that in the period of Scandinavian influence on Ireland, Denmark was losing its command of the amber trade to the south, the markets being swamped by fresh sources of amber especially from East Prussia. He therefore suggests that Denmark, compelled to market its amber in order to procure metals, turned to Ireland both as a market and as a source of supply. This explanation would suit the conditions of Montelius VI better than those of Montelius V, a time of prosperity in Denmark. Hodges (1956, 49) has envisioned Scandinavian fishermen visiting the Irish and Scottish coasts, and bartering their personal possessions for provisions. One can well imagine a great increase in traffic on the open sea in this period, when, as the Northern razors and rock carvings show, the ship had become an object of adoration in the Baltic area. Sea voyagers of the Late Bronze Age would undoubtedly have been equally ready to conduct peaceful barter or to raid and loot as opportunity offered. But it is precisely evidence for this sort of activity that is lacking in the Irish finds; one would have supposed that Northern visitors to Ireland would have left behind at least a few swords or spearheads. The maritime distribution of the Herzsprung shields could, how-

ever, argue for their diffusion by mariners. The jangles are more puzzling; were horses carried on Bronze Age vessels? The diffusion of Western weapons across Northern Europe might be used to argue that really it was the West that provided the *voyageurs* and Vikings of the Late Bronze Age.

The relations of Britain with the Netherlands and Northwest Germany are a special chapter still to be considered. Now that the 'Dutch Deverel' urns have been removed from the period in question (Glasbergen, 1954, 1956, I. F. Smith, 1961), there is no ground for supposing any major folk-movement between Britain and the Lower Rhine area during the Late Bronze Age; all would have been quiet on this front until the Hallstatt and Harpstedt incomings at or after its close. Ardleigh–Gasteren type urns, however, suggest some sort of coast-wise movement connecting the North Frisian islands, the *Hondsrug* of Drenthe, and the East Anglian coast in MIV–HaB1. Evidence for trade between the British Isles and the Hunze-Ems-Weser region is not as abundant as one might have expected in Montelius V; that region, as Sprockhoff has repeatedly emphasized (1941; 1952a), had a special insularity of its own. Britain appears to have obtained its narrow faceted socketed axes originally from this region (p. 86 ff.), and later to have sent a few back. The socketed axe *mit profiliertem Tüllenmund* in the Birchington, Kent board, and its derivatives in Ireland and Scotland (p. 90–1 ff.) show some Hunze-Ems-Weser influence upon the British Isles; the plastic sawtooth motif on axes is an additional link. Further, the bronze half-mould for a socketed axe from Havelte, Drenthe (Pl. XII bottom row; Butler, 1961, 200–7, fig. 10–12 for drawing) is surely of British or Northwest French manufacture. Axes of our Southeastern type and Ewart and Carps-tongue swords represent, however, the numerically most important groups of trade objects, and even these are not strikingly numerous in the Dutch and Northwest German area. Clearly, the pattern suggests contacts through trade and travel across the North Sea, but not a major migration of any sort.

PART THREE

CONTACT-FINDS, TRADE PHASES, AND COMPARATIVE CHRONOLOGY

CONTACT-FINDS, TRADE PHASES, AND COMPARATIVE CHRONOLOGY

Since trade provides the essential raw material for comparative chronology, we may conclude our study with a list of the contact-finds which govern the comparative chronology of the British Isles and Northern Europe, and a chronological table.

The list of contact-finds is selective rather than exhaustive; it includes the most reliable finds available which can be evaluated chronologically. It lists grave groups and hoards containing either actually imported objects or very close imitations, found in association with datable native products. A few finds not quite up to this standard have, however, been included for phases which would otherwise be devoid of contact-evidence.

The Table of Comparative Chronology is divided into five lines representing the major regions of Northern Europe concerned in this study, two representing Lowland England-Wales and Ireland-Scotland respectively, and lines for North-west France and Central Europe. The following notes to the chronological table explain the terms used and the correlations offered where these differ from hitherto standard practice.

I. NOTES TO THE CHRONOLOGICAL TABLE (Pl. XXI)

Line I: Central Europe

For the Urnfield period, we have followed the chronology newly outlined by Müller-Karpe (1957, 1958, 1959), with Hallstatt A divided into two phases and Hallstatt B into three (see also Gersbach, 1951; Kimmig, *RAE* 1951–4; Müller-Karpe, 1948, 1952; Sandars, 1957, 116 ff., tables; M. A. Smith, 1957, 195 ff., table). It will apply only with modifications to some Urnfield areas; here we employ it for comparison and to see how it works in relation to our Northern and Western regions.

We also give for comparison Müller-Karpe's absolute dates, whereby Reinecke D occupies the thirteenth century, Ha B3 the eighth, and the remaining Urnfield phases a century each in between.

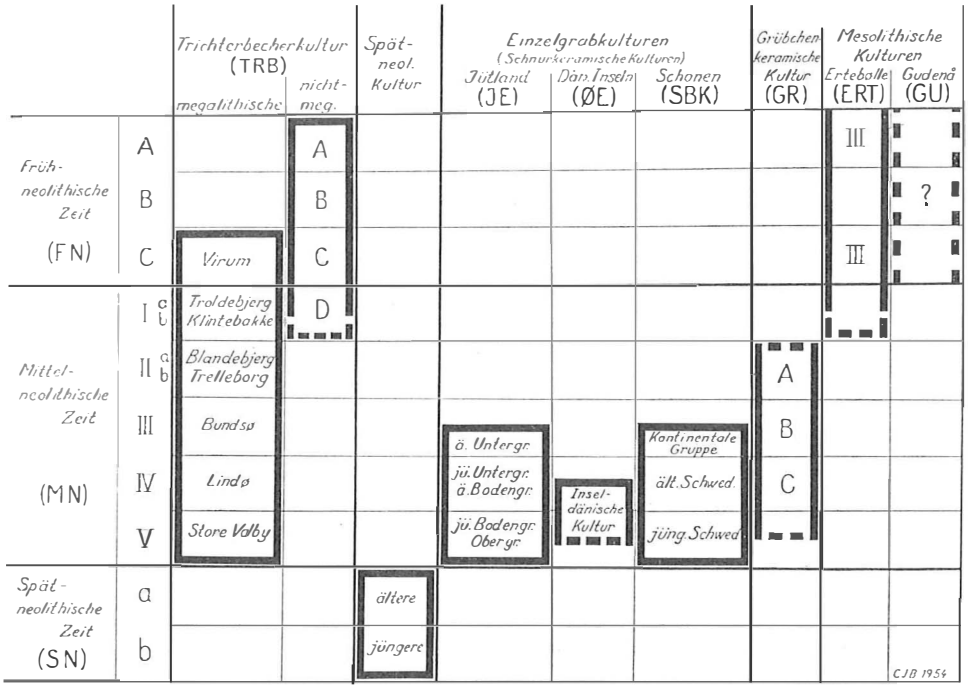

Fig. 49. Comparative chronology of the Neolithic in South Scandinavia, according to Becker, 1954.

Hachmann (1957) has argued that Reinecke A2 should be contemporary with the Shaft Grave epoch of Mycenae, and therefore be current in the sixteenth century. This would leave only the fifteenth and fourteenth centuries for the 'pure' Tumulus Bronze Age (as defined by Holste, 1953a), though its late survivals should run on past D and even part of Ha A. Tumulus B2 would then begin in the neighborhood of 1450 independently of the amber spacer-bead question (Milojcic, 1955, 316 ff.; Sandars, 1957, 10 ff., 77 n4; Hachmann,

Line II: Central Germany (East Germany, Poland)

We utilize the subdivisions of the Neolithic and Early Bronze Age of Saxo-Thuringia proposed by Ulrich Fischer (1952, 51 ff., with chronological table; 1956). Middle Bronze Age material is thin in Saxo-Thuringia, leaving open the question of the length of survival of Late Unětice industries. Farther north, there is the much-discussed Middle Bronze Age hoardgroup with Regelsbrunn spirals, ribbed collars, etc. (Rülow, Babbin, Rossenthin, Stecklin, Krüssow, etc.), into which our Western shield palstaves were received. The exact dating of the individual hoards varies greatly from author to author (Forssander, 1939; Von Brunn, 1954b; Sprock-

hooff, 1955, 34; Hachmann, 1957). It is followed by the horizon with early Spindlersfeld fibulae (Sprockhoff, 1938b, 205 ff.), equated with Montelius III and mainly early (pre-Jensovice) Ha A. The Lausitz culture is not, in the recent view (Milojcic, 1952; cf. Von Brunn, 1954b), indigenous, but a radiation of the Central European *Fremdkulturen*, and begins not before Reinecke-Montelius III. Von Brunn's Unstrut and Saale Mouth groups (1954a) begin late in Montelius III and run on through most of Montelius IV-Jensovice HaA.

Line III: South Scandinavia

Here we use the terminology proposed for the Neolithic by Becker (1954a), and the Bronze Age period-division of Broholm (DB; OD III-IV). Neolithic-Early Bronze Age correlations are best discussed in connection with Lines IV-VI (below). Broholm II, the classical *Stortid* (Montelius IIbc, Kersten's IIAB in Schleswig-Holstein) is now held, on the basis mainly of octagon-hilted swords (cf. Holste, 1953b) to run parallel with Bavarian Reinecke C (Holste's Late Tumulus), and even to oversail part of D (Sprockhoff, 1950; Hachmann, 1956, 43 ff.; Müller-Karpe, 1958, 13 ff.; cf. Von Brunn's remarks on the Spandau hoard, 1958), and Montelius III with part of D and early Ha A. The parallelism of Montelius IV with late Ha A (Zatec-Jensovice) was the main burden of Sprockhoff's *Chronologische Skizze* argument (1950); apparently leaving Montelius V to correlate with Hallstatt B (Hostomice, *Pfahlbau*) and (Cowen, 1952, 140 ff.; Sprockhoff, 1956) with part of Hallstatt C as well.

Here Müller-Karpe's scheme of a three-century-long Hallstatt B creates a problem; the equations M IV-Ha A2 and M V-Ha B, part of C would imply a Montelius IV a century long, and a Montelius V stretching over something like three and a half centuries. But there is in fact evidence that Montelius IV runs parallel not only with Müller-Karpe A2 but also with his B1. Indeed, Baudou (1960, 132 ff, table) parallels Ha B1 and B2 with Montelius IV (which thereby becomes two centuries long), leaving A2 to run alongside III (but without discussion or evidence) and HaB3 to be parallel only with Montelius V (thus reduced to only one century in length). This could obviously make good sense as far as correlations are concerned, although it leaves the relative length of the Northern periods different from what one might expect.

Lines IV–VI: Schleswig-Holstein, Northwest Germany, Netherlands

These may be considered together in part, since a series of successive horizons cut across most of the entire area. In the Neolithic we have mostly migration-horizons. Lüüdik-Kaelas (1955) suggests that the Funnel-beaker culture reached Drenthe (and therefore presumably crossed the intervening territory) no later than Scan-

dinavian EN C; there meeting the Western megalithic tradition and building the *Hunebedden*. Next follows the international early Single Grave, A-Axe spread; which is equated by Struve (1955) with NMN II, though Becker (1954a) would have it only in NMN III. Van der Waals and Glasbergen (1955) place the arrival of this wave in the Netherlands at c. 2100 on the basis of C14 determinations. A century or so later, in their scheme, come the earliest, international Bell Beakers. Next comes Van der Waals' 2II series of Bell Beakers with Corded-ware influences, including the all-over corded type. These were, according to Struve, current at the time of the Grand Pressigny flint importation and the K-axe, late Ground Grave-early Upper Grave phase, which he equates with NMN IV. In the Netherlands, Bell Beakers of Type 2Ic (the nearest relatives of British C Beakers, and the prodecessers of the Veluwe Bell Beakers) should also belong to this time.

The Late Neolithic brings Veluwe Bell Beakers; *Kümmerkeramik* coming prosumably from Western Europe, along with the Paris Basin stone cists that reached Westphalia and Sweden; and the fusion and decay of the Neolithic pottery traditions.

The Early Bronze Age chronology of the South Scandinavian-North German area has now been reviewed in great detail by Hachmann (1957), who provides closely argued correlations with Central Europe. He distinguishes four successive horizons in the North; each horizon representing the beginning of an import-wave from Central and Eastern Europe. His Horizon I comprises the exports of the Saxo-Thuringian *Fürstengräberzeit* and its contemporaries ('A1/A2'), which produce the Pile-Gallemose phase (conventionally NLN B in Scandinavia, the 'fish-tail' flint daggers being considered as imitations of the triangular metal-hilted ones). Horizon II comprises exports from the Apa-Hajdu Samson phase in South-east Europe (which he equates with the Shaft Grave epoch and with Reinecke A2) and from Swiss-South German A2. These give rise to two different groups in the North: the Sögel group in Northwest Germany and most of Jutland, and the 'Mosbaek group' in South Sweden, the Danish islands, and part of North Jutland. The distinction between the Sögel and Mosback areas persists into later phases. Typologically, Hachmann's early phase of the Mosbaek group corresponds to Broholm's *Vor forste Metalkultur* after the subtraction of the 'Sögel' elements and certain types which he dates to different horizons.

Then comes Horizon III, which is characterized by exports from Tumulus B1; it brings with it the daggers and rapiers of Wohlde type, which he holds are later than the Sögel type. Horizon III introduces the Wohlde phase of the Sögel group.

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[1] Junghans and Sangmeister (1957) report that the tanged dagger and axe associated with the typologically early Drouwen Bell Beaker are of Adlerberg and Alpine copper. The chronological implications are a Reinecke A1 date for this grave.

The Wohlde phase persists through Horizon IV, which is characterized by Tumulus B2 exports. To this phase belong the hoards of what we have described above as the 'Ilsmoor horizon'; this is where the Western shield palstaves come in.

Horizon IV in the Mosbaek area brings in the assemblage typified by the Valsømagle hoard – broadly, Broholm I, with differences of detail.

Hachmann's four horizons have been indicated on the chronological table by 'HH'. The relation of the West to this scheme we shall discuss below.

After the Wohlde phase, the Middle Bronze Age of the area we are now discussing breaks up into three different regions: the Northern culture occupying Schleswig-Holstein and the Stade district acrose the Elbe as well as Scandinavia, the Ilmenau Culture occupying the Lüneburg Heath and adjacent districts, and a nameless tumulus culture using *Kümmerkeramik*, Tumulus-type ornaments, and Western or Western-derived palstaves in the Hunze-Ems-Weser area (Sprockhoff, 1941). The exact date at which the Northwest German Urnfields emerge is difficult to establish; Tackenberg (1939) suggested Montelius IV, Van Giffen (1943) Montelius V. Recent evidence suggests that an Urnfield immigration reached Drenthe in HaA2–M IV (Waterbolk, 1962). A regional 'Hunze–Ems' metal industry existed in M V (Butler, 1961*b*).

Lines VII-IX: The West

Now we can consider the relation of the Atlantic Northwest to the Northern areas. Contact-finds in our list, pp. 242 ff., are referred to as 'CF'.

A. Funnel-beaker influences upon the Windmill Hill culture have been weighed by Piggott (1954, 312 ff.; 1955, 96 ff.). Datable contacts in the early phases are difficult to find. We would like to think that the Kirk Andrews gold pendant or sun disc (p. 169), with its Stollhoff-Brzesc Kujawski-Salten affinities, will eventually find its place in a pattern of Early Neolithic contacts between North and West.

B. The early Single Grave-Beaker with Protruding Foot wave did not reach Britain, though it got as far as the adjacent coast of Holland. We assume that the earliest Bell Beakers in Britain must be contemporary or nearly so with the similar Beakers in the Netherlands. The Mere Down-Wexford-Bognaesgaard sun disc contact (CF 1) permits a tentative equation of the early British Bell Beakers with NMN IV. Piggott (1954) places the arrival of the Bell Beakers in Britain in the middle of his Middle Neolithic.

About this time, Ireland seems already to have been exporting gold bracelets to Schleswig-Holstein (CF 2, 3).

C. A later wave of Beaker migration from the Lower Rhine, bringing the prototypes of British B3 and C Beakers, 'barbed wire' ornamented Beakers, and other coarse varieties, seems likely to correspond chronologically with the K axe-Grand Pressigny knife-Early Upper Grave phase (p. 29 ff.). I. F. Smith (1955, 1 ff.) has called attention to the barbed-wire and other Beakers from the Lyonnesse coast, deposited before the transgression which Piggott (1954) had used to mark the boundary between his Middle and Late Neolithic. Miss Smith equates the Lyonnesse transgression with the Boberg transgression on the Lower Elbe, which took place early in the Northern LN, and drowned Unětice imports as well as late and debased Single Grave and barbed-wire pottery. These inundations are presumably to be equated with the West Frisian II transgression of the Dutch coastal area, which began c. 1700 on the basis of C 14 datings (Altena *et al.*, *Helinium* 1962).

D. The Western European gold basket earring exportation and the related Oostereng ornament (Chap. XVIII) provide a chronological link between some British Beaker types, Veluwe Beakers in the Netherlands (CF 8), Northern Unětice (CF 7) and the Southeast Polish Barrow Grave Culture (CF 6). The Acklam Wold Beaker grave (CF 4) can be no earlier than NLN on the basis of its imported amber bead. As far as the Continental contact-finds go, it is difficult to draw any distinction between the period of the basket-earring expert and the period of the Irish axe-and-halberd trade to the North (CF 9–14), which is contemporary with Hachmann's Horizon I. Within Britain, the Willerby Wold find (see pp. 23, 34) tells the same story; as do Sangmeister's arguments for a 'reflux horizon' in Reinecke A1.

Wessex I and the Armorican Early Bronze Age begin within the lifetime of the Northern Unětice phase, their typical daggers being provincial imitations of Uenzes Oder-Elbe type (Sandars, 1950; Ap Simon, 1954); the Killaha find extends this horizon to Ireland. Both Wessex I and Wessex II have Shaft Grave contacts, so the transition between them should fall within the sixteenth century; Wessex II has its contacts in Central Europe with Reinecke A2, which is also sixteenth century on Hachmann's dating. The halberd-pendants and the gold-bound amber discs should place the end of Wessex and of the Northern Unětice phase after 1400 if De Navarro (1951) is right about the Mediterranean origin of the discs; this would agree with the views of Stone and Thomas (1956) about the dating of the normal segmented faience bead importation to Britain.

An important contact-find apparently dating from Wessex times is the tanged razor from Drouwen in Drenthe, which we suggest is an export from Britain or an imitation of a British Class I razor (CF 19). The Plymstock flanged axe of North German type (CF 18) may be of the same period.

E. A *terminus ante quem* for the beginning of the Middle Bronze Age in Britain, Ireland and Northwest France is provided by the hoards of the Ilsmoor horizon (Hachmann's Horizon IV). The contact-finds provide direct links with the Netherlands-Northwest Germany (CF 20–22), the Tumulus Bronze Age (CF 25; CF 26, Habsheim, is not a typical 'Tumulus' find, the Rhone-type axes being a surviving Early Bronze Age form), and the East German Middle Bronze Age (CF 23–4). The sword-chronology of Holste (1953b) would have required the Ilsmoor horizon to be parallel with Tumulus B1; Hachmann has shown that it cannot be before B2, which is more credible. The British Middle Bronze Age would then begin c. 1450 with the Acton Park-Burley phase, overlapping somewhat the end of Wessex. In Ireland the Omagh mould-hoard (pp. 96–7) would be of this time.

F. A more developed Middle Bronze Age phase, represented by 'Atlantic' hoards like Mont St. Aignan and Baux-Sainte-Croix (see pp. 65 ff.) and numerous equivalent British hoards, is dated to the time corresponding to Broholm II by its exports in the Frøjk and Ostenfeld hoards (CF 27–8). The Liesbüttel (CF 29) and Sporuplund (CF 30) finds also belong to this time, though the Sporuplund spearhead seems archaic here.

G. Next comes our Taunton-Barton Bendish phase (pp. 219 ff.), with palstaves and spearheads in the native tradition and a variety of novelties – Central European, Northern, and locally devised – representing the culmination of our Middle Bronze Age industries and the beginning of certain phenomena traditionally associated with the Late Bronze Age. Its Northern connections appear to be of late Montelius III and early IV. During this phase the first British swords ought to be appearing – the importations from Central Europe, and the Ballintober swords. To this phase we assign CF 31–40. The Glentrool and Bishopsland hoards provide a link with the industries of the Highland zone and Ireland.

H. The Wilburton industry is the standard Late Bronze Age industry of Britain, beginning earlier than, but persisting alongside, the carps-tongue industry. Its Continental contacts are clearly with a developed phase of Montelius IV. Bargeroosterveld (CF 42) and Løvskal (CF 44) display its exports in that period; the Höver sword (CF 45) represents the transition between this and the next phase. The Bargeroosterveld and Barrien-Bülten (CF43) hoards provide a link between the Wilburton industry and the early (still Montelius IV) phase of Sprockhoff's *Ems-Weser Kreis*, best represented by the hoard from Rethwisch (Martin, *Mannus* IV, 219 ff.; Sprockhoff, 1950, 234 ff.). The Rethwisch hoard is an important one, containing Northern and Northwest German products, a Hallstatt A winged axe, an Urnfield pot of Central European origin, and a razor of the type which occurs in

the earliest stage of the Northwest German Urnfields. The West Central European contacts of the Wilburton industry are with the phase represented by the Larnaud hoard which Müller-Karpe equates with his HaB1.

I. The carps-tongue industry, which traditionally defined Late Bronze Age 2 in South England, derives its starting-date from Central Europe; its winged axes, bracelets, etc. are of the types current in the Rhenish hoards of late Hallstatt B. Since carps-tongue exports (carps-tongue swords, Southeastern socketed axes with ribbed wing decoration; see pp. 227 ff.) also occur in late Hallstatt B hoards, there is an effectual cross-dating, even if the carps-tongue phase goes on to overlap with Hallstatt C (Hawkes and Smith, 1957, with detailed datings). In Northern Europe, products of the carps-tongue industry appear in Montelius V contexts (swords, p. 240). Other British products of the time, like socketed axes and knives and a Late Ewart sword, have also been found in Montelius V contexts (CF 47–51), the Kronshagen ferrule being probably an imitation. Montelius V jangles occur in the Parcy-meirch hoard (CF 54) and in French carps-tongue hoards (Chap. XIII); a probably very old Northern tanged sword of Montelius IV type was found in a Scottish hoard at Dulduff (CF 53).

On the basis of the Müller-Karpe chronology and the Northern correlations based on it, our Taunton-Barton Bendish phase, or at least the purely native elements in it, would run from about the middle of the twelfth century, the Continental novelties and their British imitations probably being mostly eleventh century (as against Mrs. Piggott's eighth century for Blackrock), the Wilburton industry would begin in the tenth century (subject to adjustment when we know more of the relations of Müller-Karpe's B1 to its neighbors), and the carps-tongue industry from early in the eighth century.

J. Lastly, we have evidence of Montelius VI incomings in the form of late sunflower-swans neck pins (p. 150; CF 54; to which should be added the Orrock and Tarves finds). These could be late seventh or sixth century.

Here we have been endeavouring to give dates to the Bronze Age metal industries in the first instance; the dating of cultures is to some extent a separate problem. The Beaker cultures can be fairly closely dated on the basis of their Continental links with the Funnel-beaker and Single Grave sequences; the insular Food Vessel cultures begin according to Piggott (1954) in his Late Neolithic; the Wessex Culture is closely dated by its extensive trade contacts. The British Cinerary Urn cultures have links in their early phase with the Wessex Culture; with Isobel Smith (1956, 19), we have suggested that a wider variety of British (and Irish) cinerary Urn types must have been current in Late Wessex and Middle Bronze Age

times than had formerly been supposed. It is clear that some things traditionally linked with the Deverel-Rimbury culture and assigned to LB 2 must really be older. The types of objects derived from the primary silting of the ditches of the Wessex Deverel-Rimbury settlements – Class I razors, ribbed bracelets, a palstave – are types appropriate to our Taunton-Barton Bendish phase; the Ebbesbourne Wake hoard (p. 142) was buried in the lynchet of a Celtic Field system; the Plaitford hoard (p. 141) may have been associated with Deverel-Rimbury globular urns. These suggest the possibility that the Deverel-Rimbury culture may have its origins about the time suggested by Hawkes in 1942, rather than at the later time subsequently favoured. No specific name has yet been suggested for the pre-Deverel Rimbury urn culture or cultures which represent the British source of the Hilversum Urn culture of the Netherlands. Finds such as Ramsgate (Chap. XIV), where ribbed bracelets were found in an inhumation (!) grave, and Picardy Pins in a storage pit with a pot analogous to the Dutch Drakenstein Urns, and Birchington, Kent, where a palstave hoard was found in a pot ornamented with rings analogous to one in the Netherlands (p. 211), will have to be taken into account in evaluating the complicated cultural pattern at the time of the Taunton-Barton Bendish industry. The find from Hanley Cross, Sussex (pp. 197–8) also shows that inhumation burial was not entirely out of vogue in this phase.

II. LIST OF CONTACT FINDS, BRITISH ISLES – NORTHERN EUROPE

This list includes grave groups and hoards in the British Isles containing datable Northern exports; grave groups and hoards in Northern Europe containing British and Irish exports; and a few contact-finds from other areas (in brackets) which help fill gaps in the record. Unless otherwise noted, the trade-objects are actual imports or very close imitations which are indistinguishable, or nearly so, from actual imports. Finds of questionable value for cross-dating have as a rule been omitted.

Abbreviations:

G grave; H hoard; HH Hachmann Horizon; NMN Northern Middle Neolithic; NLN Northern Late Neolithic; M Montelius; TBB Taunton-Barton Berdish.

1. *Bognaesgaard.* G. Clay 'pot lid' with pattern closely imitating Irish gold sun disc of Wexford type. From megalithic tomb; typologically datable not later than NMN IV. Pl. XVIII. Pp. 171–3
2. *Himmelpforten.* G. Gold penannular ring of Irish type; in Funnel-beaker flat grave, with beaker, flint axe. NMN. P. 175 ff.

3. *Schwesing*. Similar gold ring, at margin of NMN megalithic tomb, but stratification uncertain. Probably NMN. P. 175.
4. *Acklam Wold*. G. Amber bead of NLN type. Beaker, flint dagger, etc. P. 162.
5. *Aylesford*. G. Four-riveted dagger, cf. Bargeroosterveld and small Unětice daggers. With dagger related to Breton-Wessex type, Irish flat axe. HH I. P. 200.
6. *Rusilow*. G. Western gold basket earring; in grave of Southeast Polish Barrow Grave culture, with Northern LN types. Pl. XIX*b*. Pp. 187–90.
7. *Wasosz*. H. Western gold basket earring, Northern Unětice bronzes. HH I. Pp. 187–90.
8. *Bennekom*. G. Gold ornament with oar-shaped terminals, related to Unětice and Northern forms, with ornamentation recalling Western gold basket earrings; probably with Veluwe Beaker, amber bead. Pp. 189–90.
9. *Pile*. H. Irish flat axe, with Unětice bronzes, Pile axes. HH I. P. 46, No. 6.
10. *Gallemose*. H. Irish Class I decorated axe, with Unětice bronzes, Pile axes. HH I. P. 46, No. 7.
11. *Lumby Taarup*. H. Irish Class I decorated axe, Pile axes. HH I. Pl. II*b*. P. 46.
12. *Skivarp*. H. Irish Class I axe, Pile axes. HH I. Pl. VIII: 26. P. 46, No. 14.
13. *Dieskau*. H. Irish Class I decorated axe, halberds of Irish form, Saxo-Thuringian bronzes, amber. HH I. Pl. I*b–c*. Pp. 20 ff., 34 ff., 46, No. 17.
14. *Wageningen*. H. Irish flat axe, halberd Type 4, other bronzes. HH I. Fig. 1. Pp. 17 ff., 45 no. 1.
15. *Migdale*. H. Bronze cones of Unětice-Tumulus type, with British-Irish bronzes. EBA. Pp. 187 ff.
16. *Virring*. H. Cast-flanged axe of non-Irish form but with Irish-style cabling on sides; grooved ogival dagger; North German cast-flanged axe; spearheads. VFM-HH II. Pp. 44, 111–2.
17. *Tinsdahl*. H. Bronze basket earrings related to Cowlam-Migdale type; A2 bronzes. HH II. P. 206.
18. *Plymstock*. H. Flanged axe of North German type (probably copy); Wessex II bronzes. Pp. 44, 238.
19. *Drouwen*. G. Class I razor, British or imitation thereof; Sögel assemblage. HH II. Fig. 33: 1; pp. 115 ff.
20. *Ilsmoor*. H. Shield palstaves, NW European stopridge axe, Northern bronze battleaxe, Northwest German palstaves. HH IV. Pl. V*c*; fig. 10; Chap. III.
21. *Stade*. H. (Unfinished castings). Shield palstaves, Northwest German palstaves, cakes of metal. HH IV. Chap. III.
22. *Voorhout*. H. Shield palstaves, plain palstaves, NW European stopridge axe, a typical flanged axe cf. Acton Park, lugged chisel. HH IV. Fig. 11; Chap. III.
23. *Riilow*. H. Shield, plain and midrib palstaves; Tumulus bronzes. HH IV. Pl. VI*a*; Chap. III.

24. *Babbin.* H. NW European stopridge axes, Bagterp spearheads, Tumulus bronzes. Chap. III.
25. *Hausberge.* H. Shield palstave, Tumulus dagger, flanged axe. HH IV. Pl. V*b*; Chap. III.
(26. *Habsheim.* H. Shield palstaves, Rhone-type flanged axes. HH IV. Chap. III.)
27. *Frojk.* H. Atlantic palstaves, Broholm II bronzes. Pl. VI*b*; Fig. 16: 1–3; Chap. III.
28. *Ostenfeld.* H. Atlantic palstaves, Kersten IIA bronzes. Fig. 16: 6–7; Chap. III.
29. *Liesbüttel.* G. Looped spearhead Hawkes C3, bronze-hilted dagger Kersten IIA, Type VI flint dagger. Pl. XIII*c*; pp. 98 ff.
30. *Sporuplund.* G. 'Dagger-bladed' spearhead of Wessex II or Irish (Omagh) origin; Broholm II sword, chape. Fig. 27; pp. 96–8.
(31. *Wiesloch.* G. Looped spearhead Hawkes D3; Rixheim sword; Urnfield pottery. Ha A1. Pl. XIV*a*; pp. 102 ff.)
32. *Glentrool.* H. Glentrool pin, twisted neckring, amber beads, British-Irish rapier, spearhead, palstave, etc. TBB. P. 143, no. 23.
33. *Blackrock.* H. Bronze dagger-hilt of Northern type, decorated spiral finger-ring of North German type, Sussex Loops, native palstaves, etc. TBB. P. 223, no. 22.
34. *Taunton.* (Union Workhouse). H. Socketed axe of Taunton-Hademarschen type; TBB. Pl. X*a*; pp. 75 ff.; p. 142, no. 15.
35. *Barton Bendish.* H. Doubled-wire twisted bracelet, twisted neckrings, large quoit-headed pin, etc. TBB. P. 142, No. 7.
36. *Hollingbury Hill.* H. Twisted neckring with plain ends, palstave, Sussex Loops, spiral finger-rings. TBB. Pp. 138 ff., p. 142, No. 19.
37. *St. John's.* H. Gold twisted bracelets of Kersten's Type E9 (M III), with other gold objects. Pp. 145–6.
38. *Portsmouth.* H. Bracelet with incised ornament, cf. Steenodde and Bignan; plain bracelets, looped palstave. TBB. P. 157–8, 222–10.
39. *Ramsgate.* G. Bracelets with incised decoration recalling that of Ilmenau bracelets; ribbed bracelet. TBB. P. 159 ff., 222 no. 12.
40. *Epe.* H. Palstave cf. Blackrock, two-knobbed sickle, stopridge axe. Pl. VIII*a*; fig. 17; pp. 68–9, 73 no. 17.
41. *Ffynhonnau.* H. Ferrules with pointed end of Central German M IV type; developed Ha A Urnfield knife; sword fragment; palstave. Pp. 133, 225.
42. *Bargeroosterveld.* H. Palstaves of Curwen's Type C; Northwest German *Nierenringe* M IV; debased Ha A Urnfield knife. Fig. 18; p. 69, 73 no. 18.
43. *Barrien-Bülten.* H. Palstave of Curwen's Type C; knife with 'double T' handle, M IV. P. 70, 73, no. 19.
44. *Elskilstrup.* H. Yetholm shield, Sørup shield. Pl. XV*a*; p. 130.

45. *Lovskal*. H. Southeastern socketed axes, M IV bronzes, winged axes. Pl. XIII*b*; pp. 85–6.
46. *Höver*. G or H? Transitional Wilburton-Ewart sword, sword with narrow tang, etc. Problematical find. P. 119.
47. *Plestlin*. H. Southeastern socketed axes, M V and Ha B bronzes. Pp. 85–6.
48. *Tempelburg*. H. Southeastern socketed axe, M V bronzes. P. 85, no. 8.
49. *Gurki*. H. British-Irish octagonal narrow faceted axe, M V bronzes. P. 87.
50. *Böck*. H. Thorndon knife, M V bronzes. P. 115.
51. *Kronshagen*. Ferrule resembling British type; M V bronzes. P. 133.
52. *Kirke Soby*. Late Ewart sword, spearhead with ornament of HaB derivation, punch. M V. Pp. 119–21.
53. *Dulduff*. Northern tanged sword, cauldron, socketed axes, etc. Fig. 34; pp. 121–2.
54. *Parc-y-meirch* (Abergele). Northern jangles, M V, with horse-gear, etc. Pp. 152–4.
55. *Edinburgh*. Sunflower pin resembling M VI East Swedish type; swords, looped half-ring. Pp. 150–1.
56. *Ommerschans*. Fragment of uncompleted ribbed bracelet of Ramsgate type; razor of Pantalica (Sicily) Type A; Plougrescant sword, other bronzes and stone tools. TBB–Pantalica I. P. 157.
57. *Gahlstorf*. Irish gold penannular ring with trumpet-shaped ends. In Harpstedt pot, M VI. P. 4.

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(For abbreviations, see pp. 263 ff.).

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ABBREVIATIONS

Aarb., Aarbøger.
Aarbøger for nordisk Oldkyndighed og Historie. Copenhagen.

ABI.
Evans, John. 1881. *Ancient Bronze Implements.*

Acta, Acta Arch.
Acta Archaeologica. Copenhagen.

Acta Arch. Hung.
Acta Archaeologica Hungarica. Budapest.

AJA.
American Journal of Archaeology. Bryn Mawr.

Antiq. J., Ant. J.
Antiquaries Journal. London.

Arch.
Archaeologia. London.

Arch. Ael., Arch. Aeliana.
Archaeologia Aeliana. Newcastle-on-Tyne.

Arch. Camb.
Archaeologia Cambrensis. Cardiff.

Arch. J.
Archaeological Journal. London.

Ber. ROB.
Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek. Amersfoort.

B.M. BAG.
British Museum. 1920. Bronze Age Guide.

B.M. LPA.
British Museum. 1953. Later Prehistoric Antiquities of the British Isles.

BPI.
Bulletina di Paletnologia Italiana. Parma and Rome.

BRGK.
Berichte der Römisch-Germanischen Kommission. Frankfurt a. M.

BSPF.
Bulletin de la Société Préhistorique Française. Paris.

Chron.
Montelius, O., 1900. Chronologie der ältesten Bronzezeit.

DB.
Broholm, H. C., 1943–4. *Danmarks Bronzealder.* 4 vols.

DO.
Danske Oldsager. II: Glob, P. V. *Yngre Stenalder.* III: Broholm, H. C., *Aeldre Bronzealder.* IV: Broholm, *Yngre Bronzealder.*

ESA.
Eurasia Septentrionalis Antiqua. Helsinki.

FNMA.
Fra National museets Arbejdsmark. Copenhagen.

Inventaria.
Inventaria Archaeologica.

IPEK.
Jahrbuch für Praehistorische und Ethnographische Kunst. Cologne.

JCHAS.
Journal of the Cork Historical and Archaeological Society.

JGAHS.
Journal of the Galway Archaeological and Historical Society.

JMDV.
Jahresschrift für Mitteldeutsche Vorgeschichte. Halle/Saale.

JRSAI.
Journal of the Royal Society of Antiquaries of Ireland. Dublin.

JSGU.
Jahresschrift der Schweizerischen Gesellschaft für Urgeschichte.

JVSTL.
Jahresschrift für die Vorgeschichte der Sächsich-Thüringischen Länder. Halle/Saale.

Manuel.
Déchelette, J., 1903–14. Manuel d'archeologie préhistorique, celtique et gallo-romaine.

Minnen.
Montelius, O., 1917. Minnen från vor Forntid.

NDV.
Nieuwe Drentse Volksalmanak.

NNU.
Nachrichten aus niedersachsens Urgeschichte. Hanover.

O.M., Oudh. Med.
Oudheidkundige Mededelingen uit 's Rijksmuseum van Oudheden te Leiden.

PCBI.
Childe, V. G. *Prehistoric Communities of the British Isles.* London, 1940 (reprint 1952).

PPS.
Proceedings of the Prehistoric Society. N.S. Cambridge.

PPSEA.
Proceedings of the Prehistoric Society of East Anglia. Cambridge.

PRIA.
Proceedings of the Royal Irish Academy. Dublin.

Proc. Cambridge Ant. Soc.
Proceedings of the Cambridge Antiquarian Society.

PSAS.
Proceedings of the Society of Antiquaries of Scotland. Edinburgh.

PZ.
Praehistorische Zeitschrift. Berlin.

Real.
Ebert, M., ed. Reallexikon der Vorgeschichte. 15 vol. Berlin.

RGZM. (Festschrift, Jahrbuch, etc.)
Römisch-Germanisches Zentralmuseum zu Mainz.

SAC.
Sussex Archaeological Collections.

Surrey Arch. Coll.
Surrey Archaeological Collections.

SYMA.
Suomen Muinaismuisto Yhdistyksen Aikakauskirya. Helsinki.

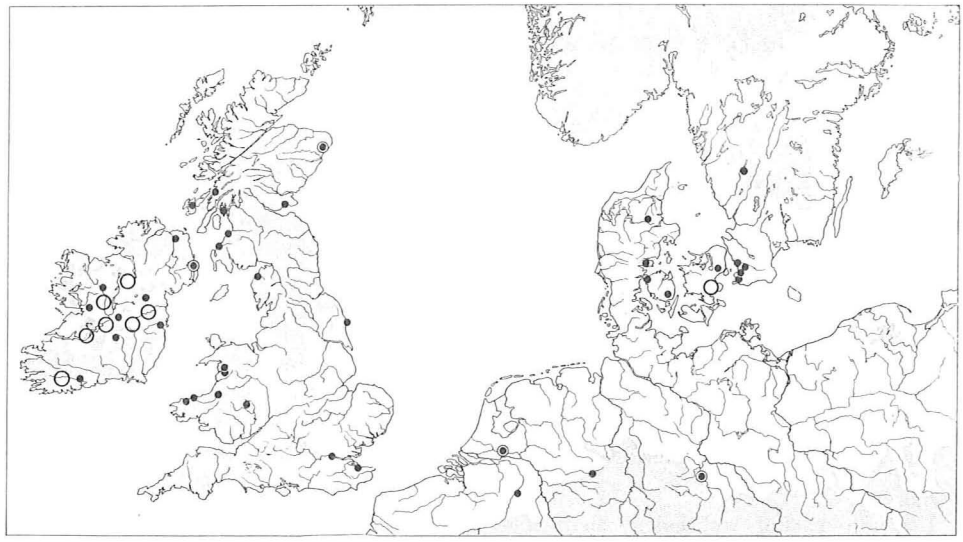
UJA.
Ulster Journal of Archaeology. Belfast.

ULIA.
University of London Institute of Archaeology.

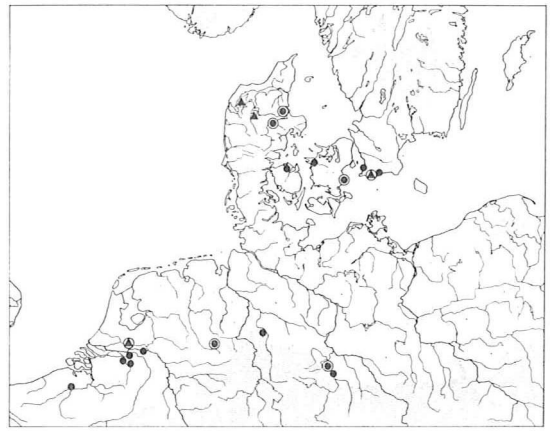
WAM.
Wiltshire Archaeological Magazine. Devizes.

W.A.
Wiadomosci Archaeologiczne. Warsaw.

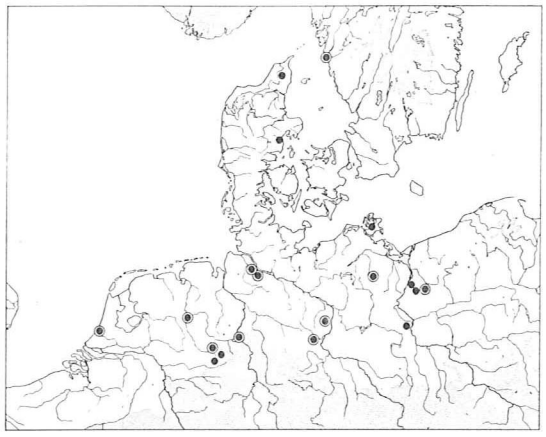
ZSAK.
Zeitschrift für schweizerischen Archaeologie und Kunst-Geschichte.



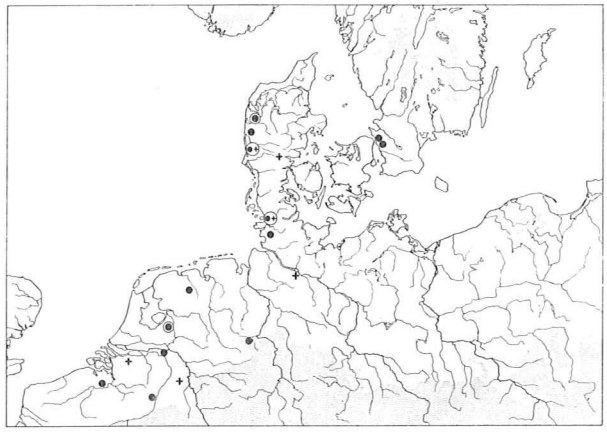
Map I. Halberds of Irish Type IV in Northern Europe (Chapter I; listed p. 26).
⊙ hoard; • stray find; O find-spot approximate.



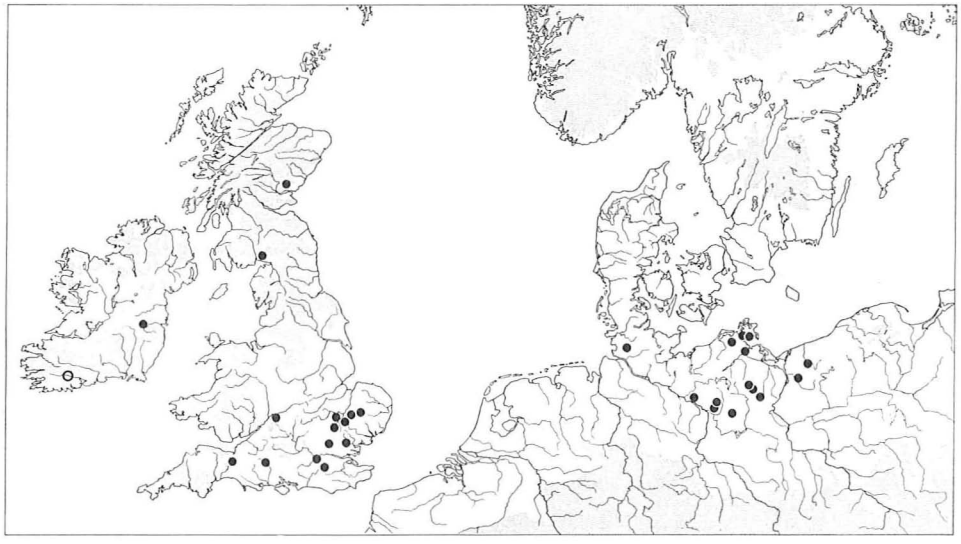
Map II. Irish flat and lowflanged axes in Northern Europe (Chapter II; listed p. 45).
▲ flat axe; • lowflanged axe; ⊙ (▲) in hoard.



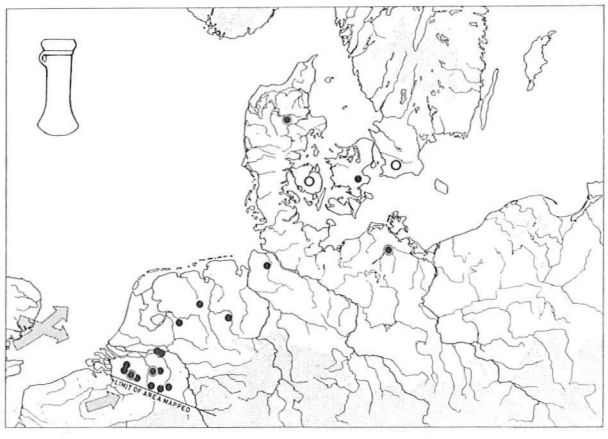
Map III. 'Shield' palstaves of the Ilsmoor horizon in Northern Europe (Chapter III; listed p. 71 under Types IA1b-c, no. 1–20).
⊙ hoard; • stray find.



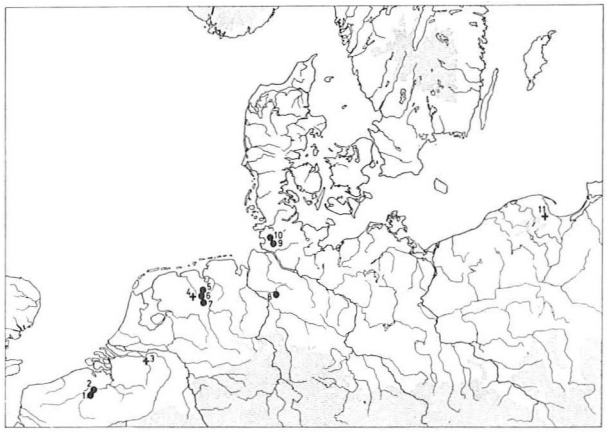
Map IV. Western palstaves of Period II (Broholm) in Northern Europe (Chapter III; listed pp. 71–2, no. 22, 24, 26, 27, 30, 31, 33–5, 38, 40–2, 44, 47, 48, 51, 53).
+ narrow-bladed; • broad-bladed; (•+) in hoard.



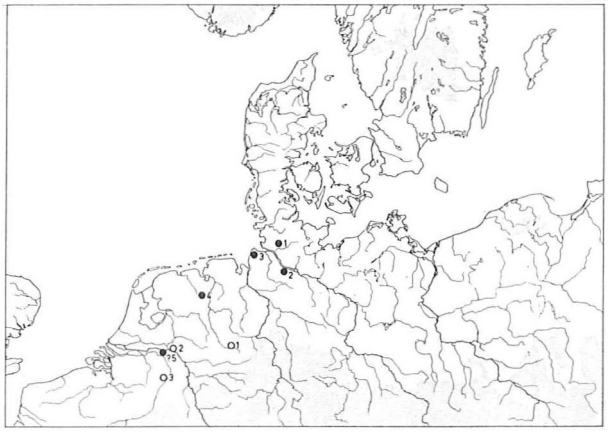
Map V. Socketed axes of Taunton-Hademarschen type. (Chapter IV; listed pp. 79–80).



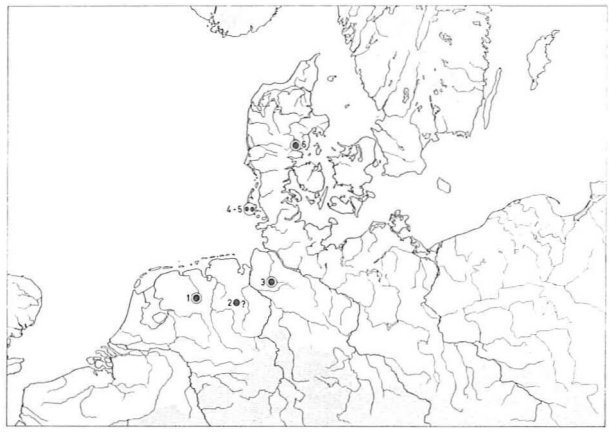
Map VI. Socketed axes of 'Southeastern' type in Northern Europe. (Chapter IV; listed p. 85).
⊙ hoard; • stray; O find-spot approximate.



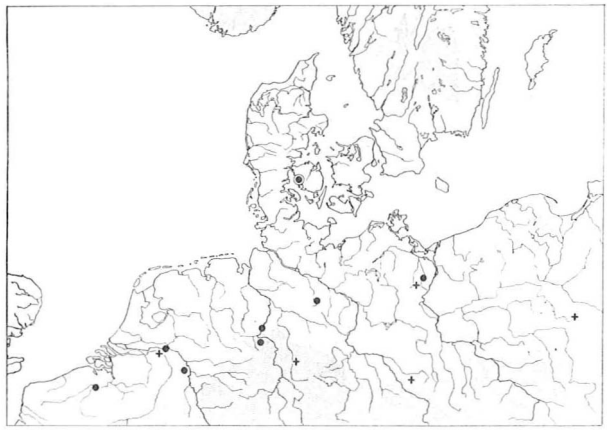
Map VII. Looped spearheads in Northern Europe. (Chapter V; listed p. 109–10).
• with loops at base of blade; + socket-looped.
1 Oudenaarde; 2 Wichelen; 3 's-Hertogenbosch; 4 Papenvoort; 5 Onstwedde; 6 Exlooërmond; 7 Bargeroosterveld; 8 Obergrunhagen; 9 Aasbüttel; 10 Liesbüttel; 11 Skowarcz



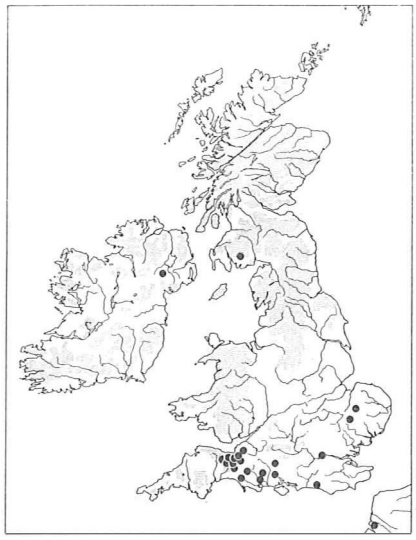
Map VIII. Rapiers of British-Irish forms in Northern Europe (Chapter VI; listed pp. 114–5).
• probable exports; O hybrid.



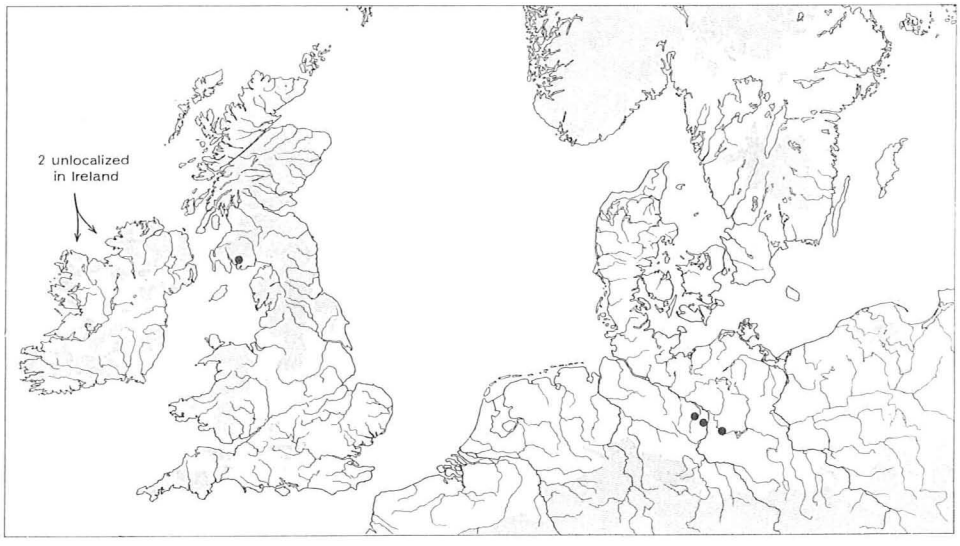
Map IX. Western Class I razors in Northern Europe. (Chapter VI; see pp. 115–7).
⊙ grave find; • stray)
1 Drouwen; 2 Cloppenburg; 3 Ehestorf; 4–5 Amrum; 6 Nim.



Map X. Western flange-hilted swords in Northern Europe. (Chapter VII; listed p. 120).
• Late Ewart type; + carps tongue. O hoard.

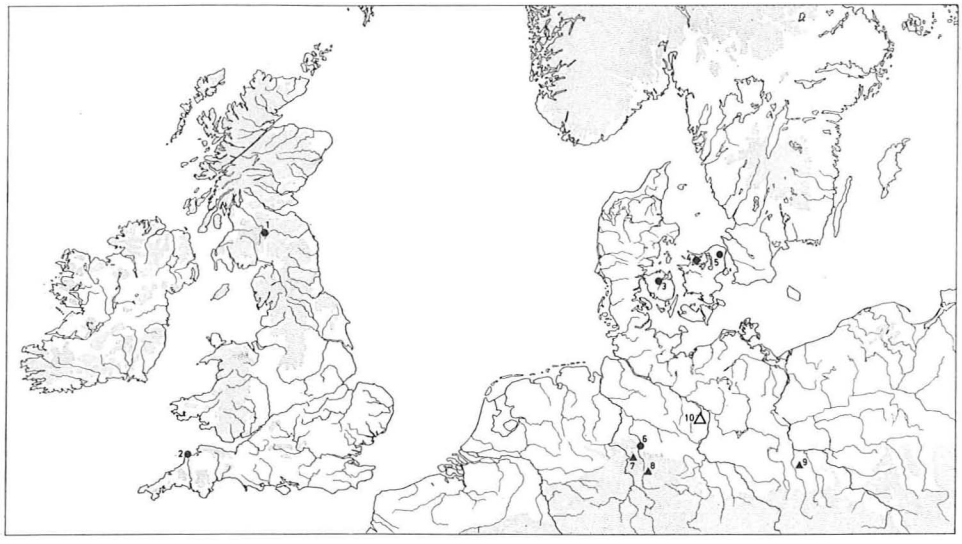


Map XI. Bronze twisted bar neck-rings in the British Isles. (Chapter XI; listed p. 141–3).



Map XII. Pins of Glentrool type (Chapter XII; listed p. 148).

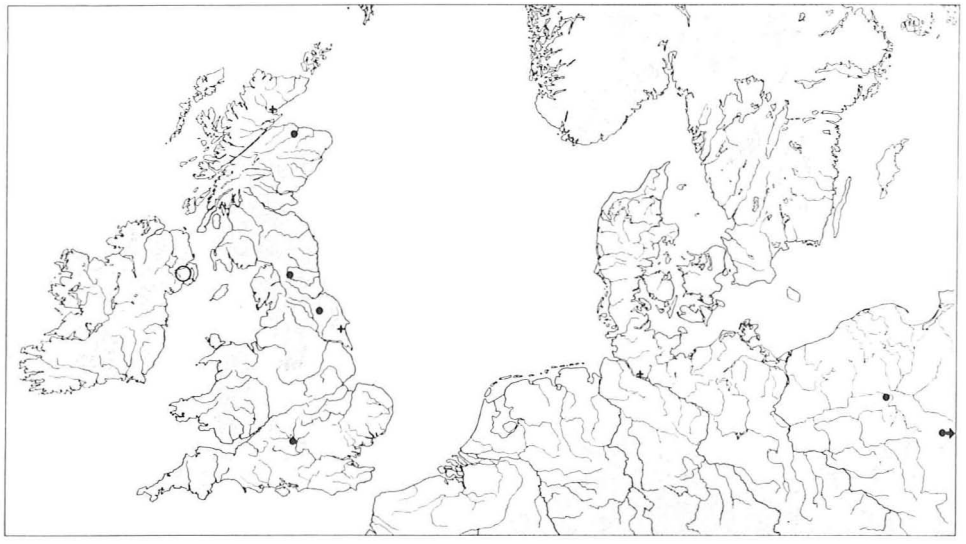
Map XIII. Jangles of North European type. (Chapter XIII; listed p. 154).
+ Form I; • Form II.



Map XIV. Lunulae of gold ('edge-grooved' type only) and copper or bronze lunulae in Northern Europe. (Chapter XVII; listed pp. 185–6).

• gold edge-grooved; ▲ copper or bronze; Δ ditto, find-spot approximate.

1 Coulter; 2 Harlyn Bay; 3 Skovshøjrup; 4 Grevinge; 5 Fredensborg; 6 Schulenburg; 7 Bodenwerder; 8 Göttingen; 9 Oegeln; 10 'Altmark'.



Map XV. Basket-shaped earrings of Western type in Northern Europe.
(Chapter XVIII; listed p. 190).

Map XVI. Certain early sun discs of copper, gold or baked clay. Location map.
(Chapter XVI).

1 Co. Wexford; 2 Kirk Andrews; 3 Huntiscarthe; 4 Mere Down; 5 Monkton Farleigh; 6 Salten; 7 Bognaesgaard; 8 Niederkränig; 9 Brzesc Kujawski.

INDEX OF FIND-SPOTS CITED IN TEXT

Abbrevations for countries:

A	Austria	DK	Denmark	NL	the Netherlands
B	Belgium	Engl.	England	Pol.	Poland
CH	Switzerland	F	France	S	Sweden
D	Germany	Irel.	Ireland	Scotl.	Scotland

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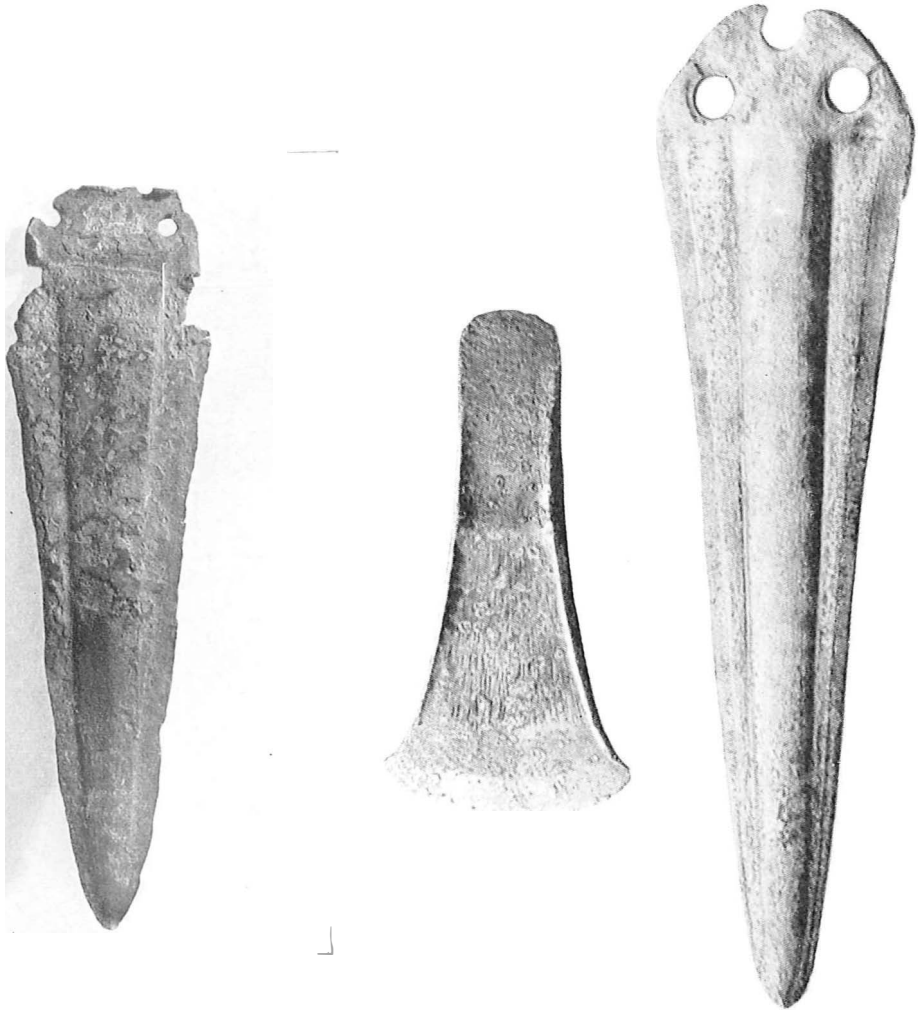
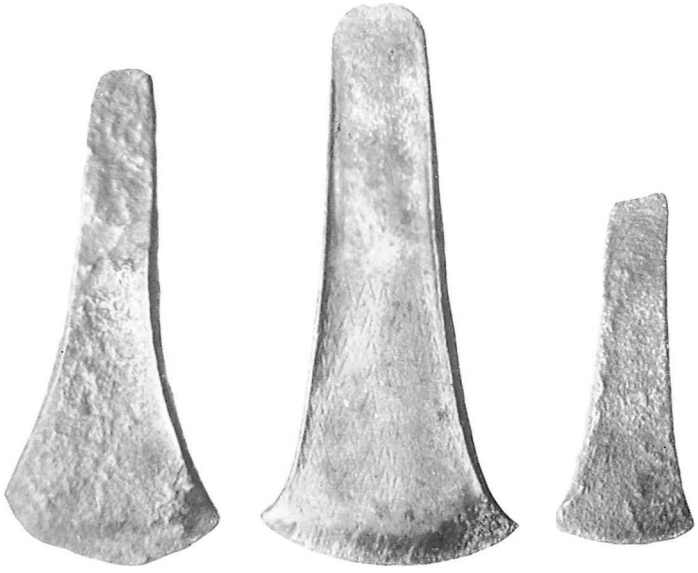
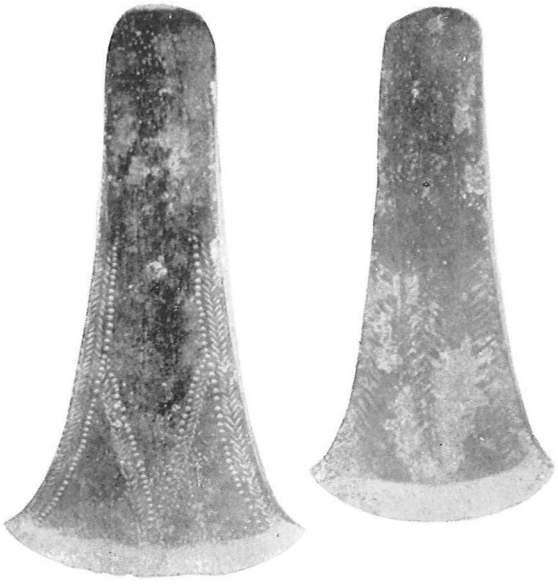


a. Halberd from Wichelen, Prov. Antwerp, Belgium. After De Laet and Glasbergen.
b. Decorated axe from Dieskau Hoard II, Saalkreis, Saxony. After Förtsch.
c. The Irish-type halberd from Dieskau Hoard II. After Förtsch.

a



b

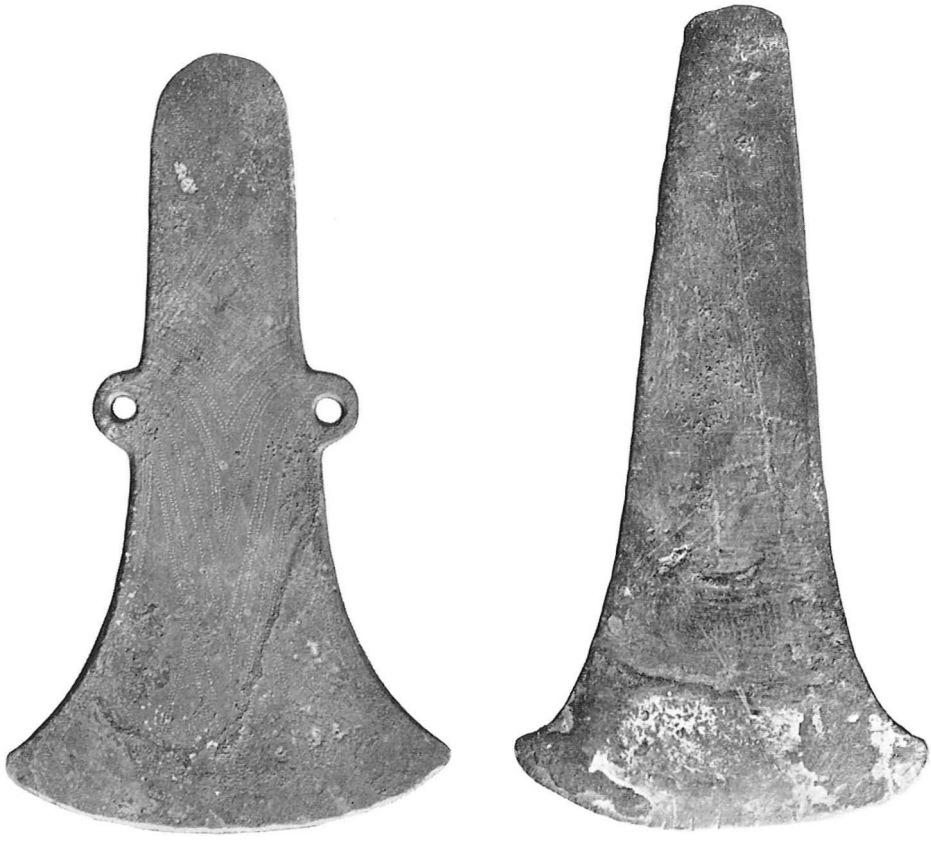


c

a. Copper flat axe from Fredsø, Mors (Limfjord, N. Jutland). Photo National Museum, Copenhagen.

b. Hoard from Lumby Taarup, Fyn. Photo National Museum, Copenhagen.

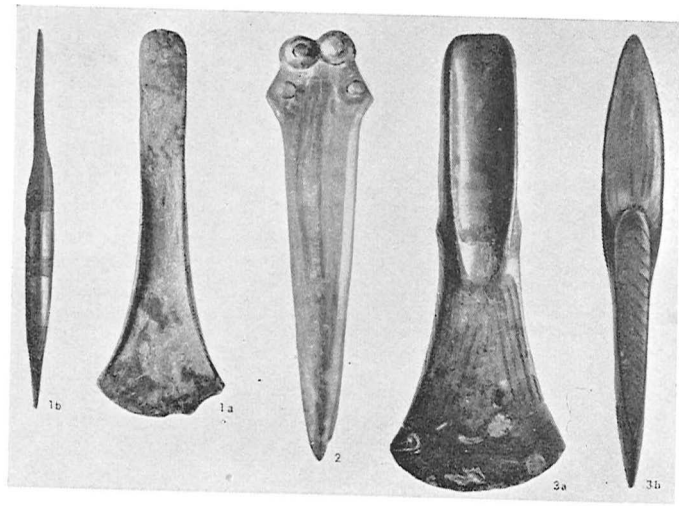
c. Decorated axes from Knockaun, Co. Waterford, Ireland. Photo National Museum of Ireland, Dublin.



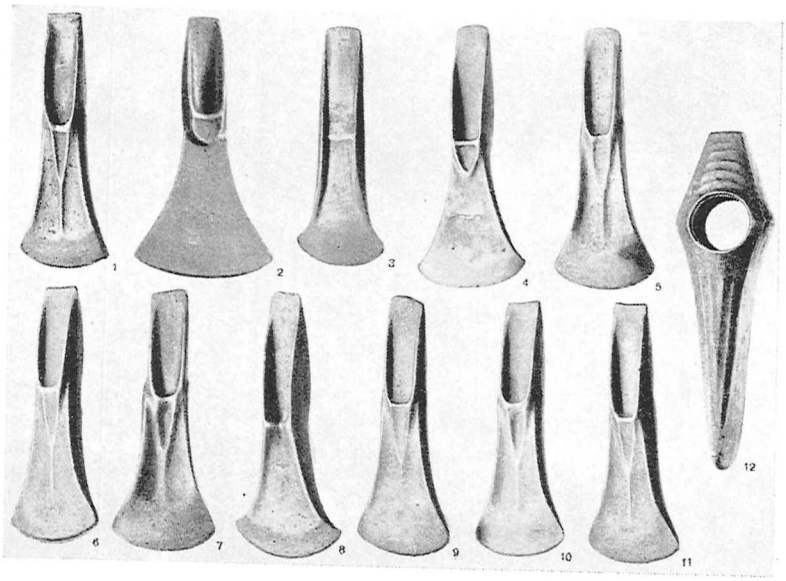
Decorated axes from Ulstrup, Jutland. Photos Forhistorisk Museum, Aarhus. (Cf. fig.4).

Lowflanged axes from the Netherlands. Upper row: 1 Emmen, Drenthe; 2 Kam collection, Nijmegen; 3 Valthe, Drenthe. Lower row: 4 's-Heerenberg, Gelderland; 5 Suawoude, Friesland; 6 Donkerbroek, Friesland. 1, 3 Mus. Assen; 2 Rijksmuseum Kam, Nijmegen; 4 RMO Leiden; 5, 6 Mus. Leeuwarden. Photos CFD Groningen and RMO Leiden.

a

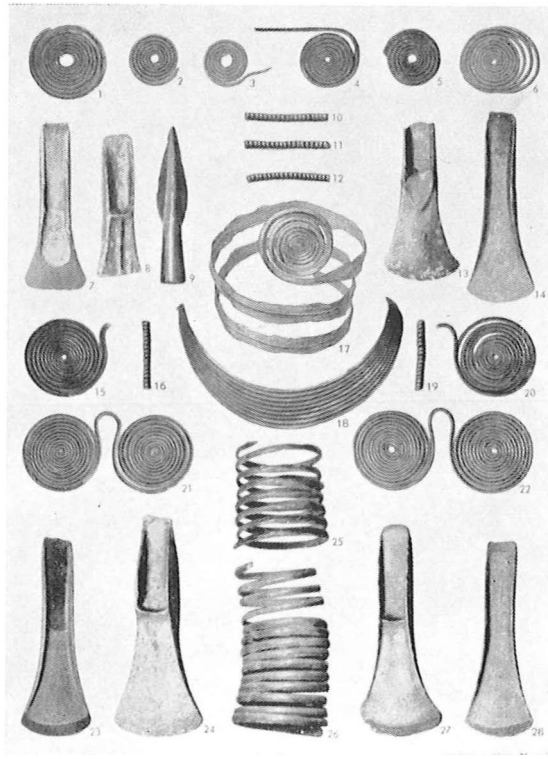


b

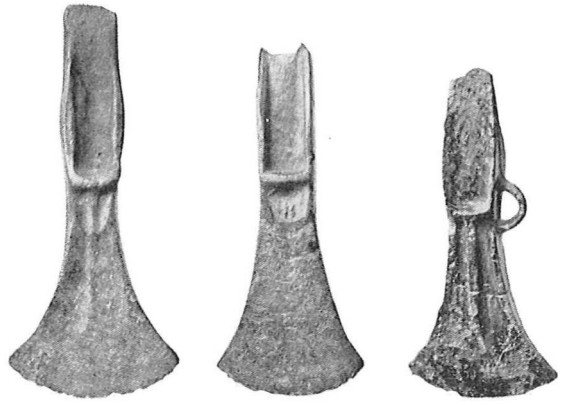


c

a. Hoard from Neuhaldensleben, Saxony.
b. Hoard from Hausberge, Kr. Minden, Westphalia.
c. Hoard from Ilsmoor, Kr. Stade (lower Elbe area). After Sprockhoff, 1941. (= Fig. 10).

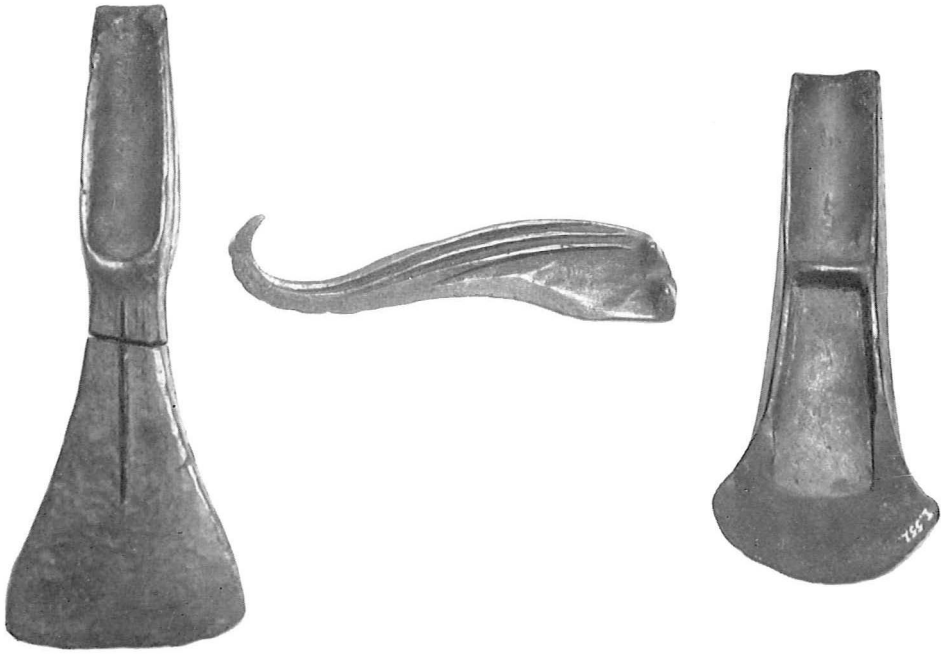


a. Hoard from Rülow, Mecklenburg. After Sprockhoff.

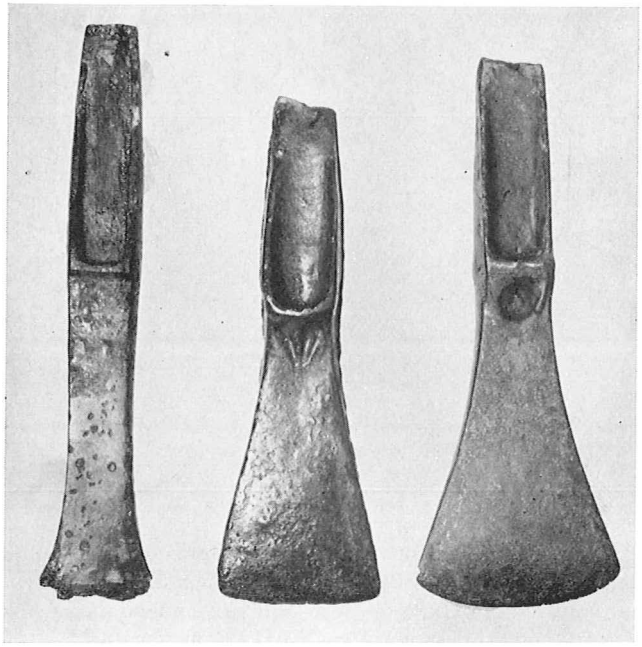


b. Palstaves from (left) Tim and (centre) unknown Danish find-spot; (right) the Frøjk hoard, NW Jutland. After Broholm.

Palstaves and flanged axes from the Netherlands. Upper row: 1 Emmercompascuum, Drenthe; 2 Aijen, Limburg; 3 Rijsbergen, North Brabant. Lower row: 4 Gem. Norg, Drenthe; 5 Kam coll., Nijmegen; 6 between Wijchen and Nijmegen, Gelderland. Mus. Assen, Leiden and Nijmegen. Photos CFD Groningen and RMO Leiden.

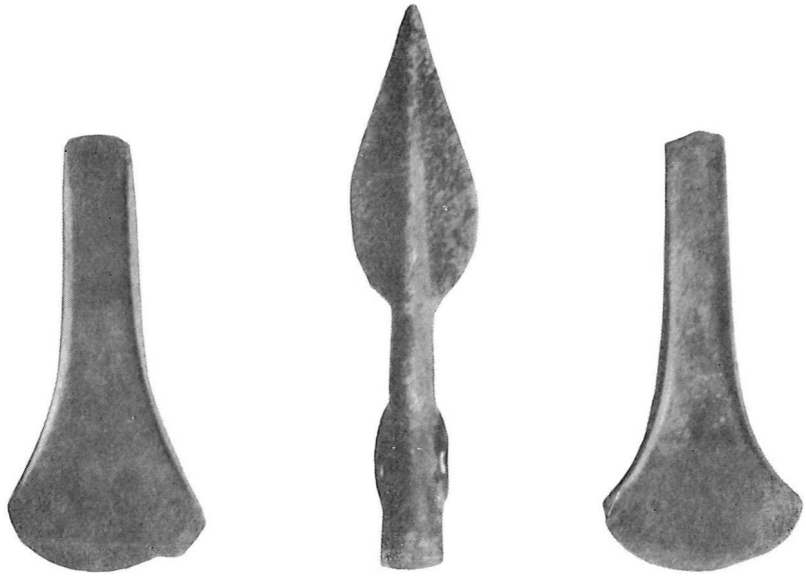


a. Hoard from Epe, Gelderland. = Fig. 17. Photo RMO Leiden.

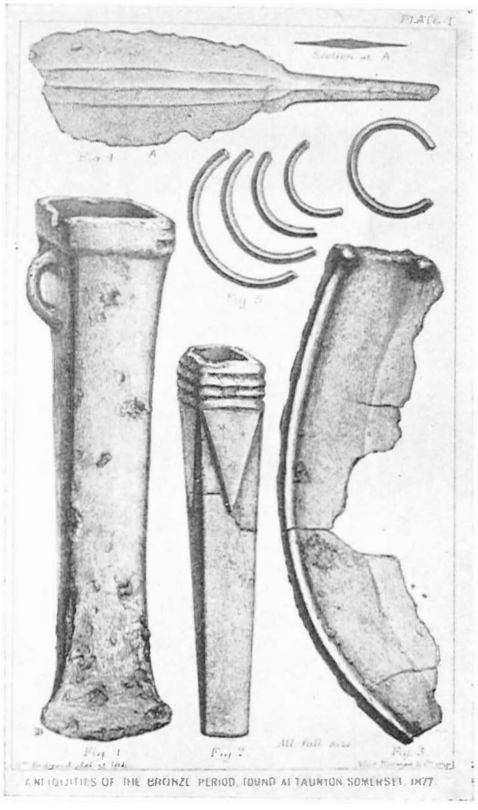


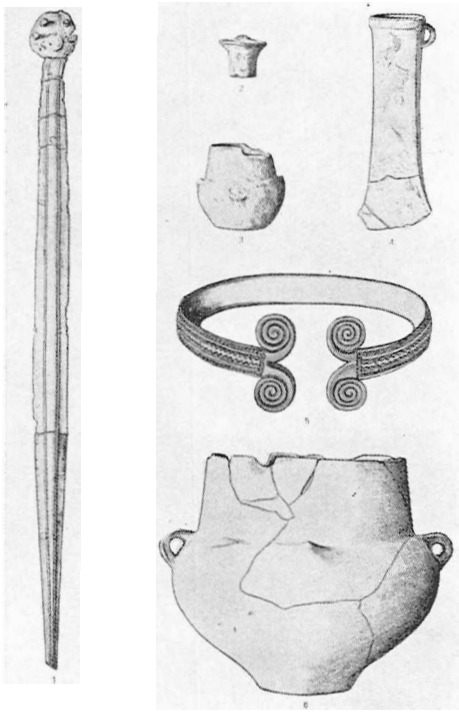
b. Palstaves from Jutland. 1 Lindeballe, 2 True, 3 Viby near Aarhus. Photo Aarhus Museum.

a. Palstave hoard from Pamhule, SE Jutland. Photo Mus. Haderslev.



b. Alleged hoard from Scowarz (Schönwarling) near Danzig. After Sturms.





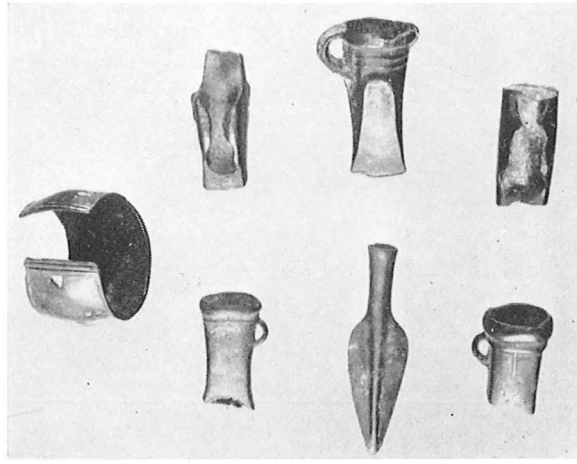
a. From the Taunton (Union Workhouse) hoard, Somerset, England. After Pring.
b. Grave find from Hademarschen, Kr. Rendsburg, Schleswig-Holstein. After Sprockhoff, 1941.

From the Valsømagle hoard. After Forssander.

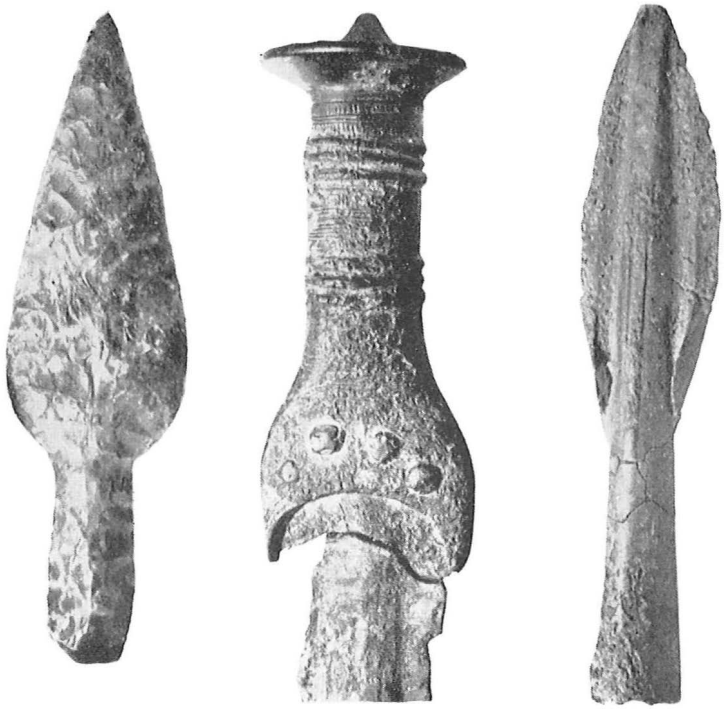
Socketed axes and a bronze mould from the Netherlands. Upper and centre rows: 'South-eastern' socketed axes from 1 near Helmond, Brabant; 2, 3 Kam coll., Nijmegen; 4, 5 Heppenert, Maaseyck, Limburg. 'Faceted' axe (lower row, centre): from the Waal at Nijmegen. Bronze mould (bottom row, left and right): Havelte, Drenthe. Museums: RMO Leiden and Assen. Photos CFD Groningen and RMO Leiden.

a

b

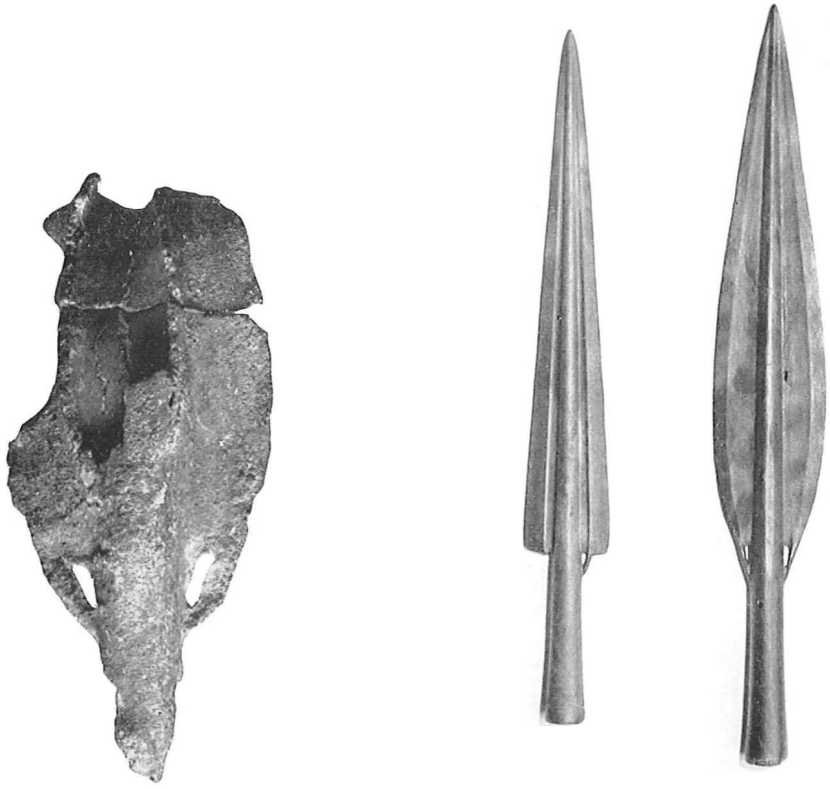


a. Razor from grave at Nim, NE Jutland. Photo courtesy Dr. B. Sylvest. (= Fig. 33 : 2).
b. Hoard from Løvskal, Amt Viborg, Jutland. Viborg Museum. Author's photo.

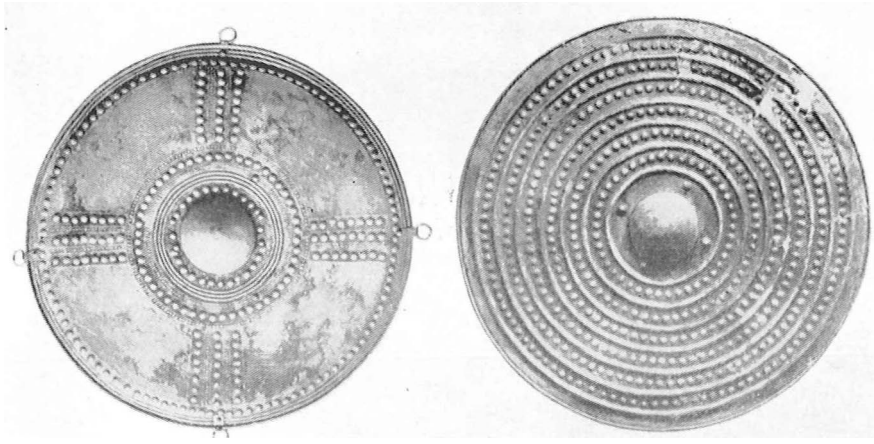


c

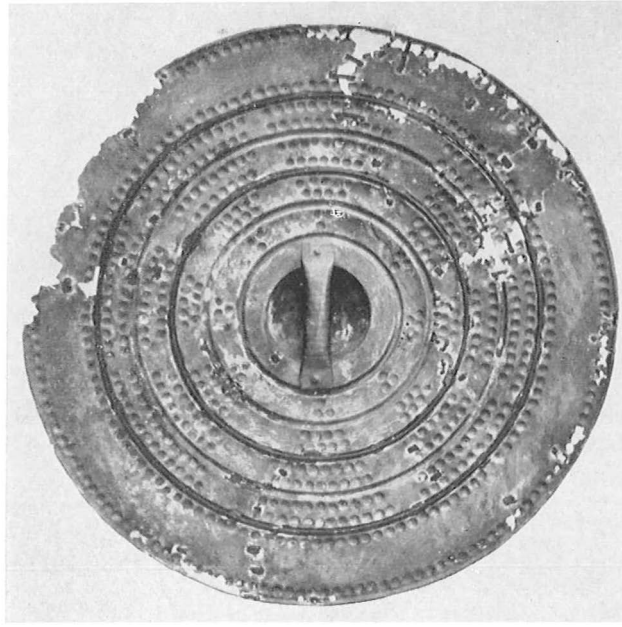
c. Grave group from Liesbüttel, Kr. Rendsburg, Schleswig-Holstein. After Kersten.



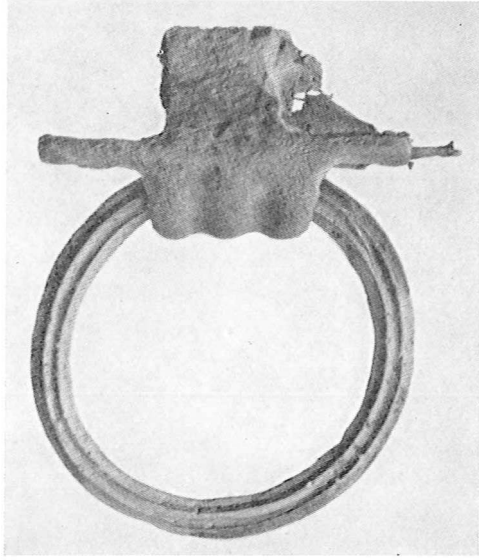
a. The burnt and distorted fragment of a basal-looped spearhead from an Urnfield grave, Wiesloch near Heidelberg, Germany. Photo B. Heukemes.
b. Looped spearheads from Oudenaarde and Wichelen, Belgium. After De Laet and Glasbergen.



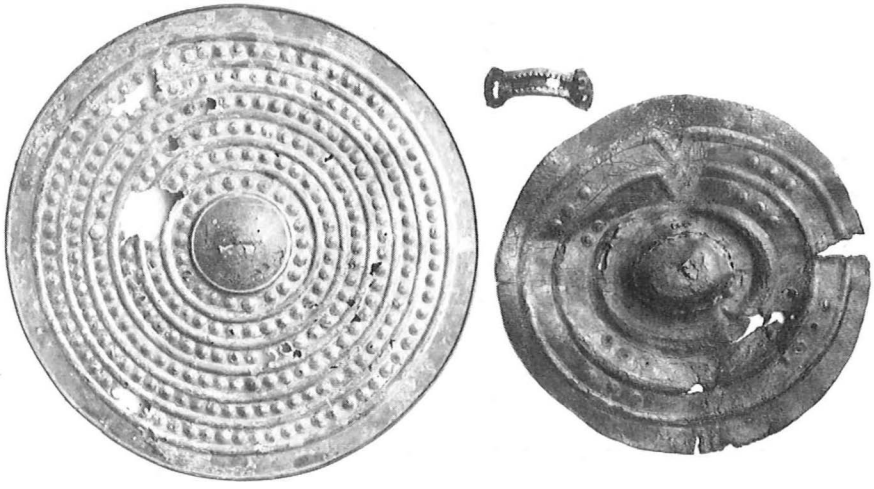
a. Shields from Elskilstrup (Sørup Mose), Falster, Denmark. After Coles.



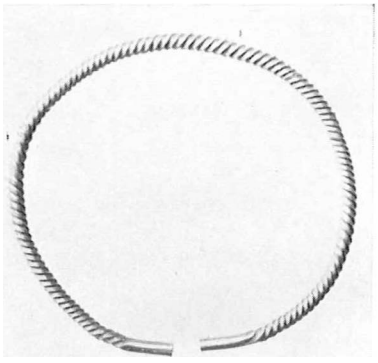
b. Shield from Lommelev Mose, Falster. After Broholm.



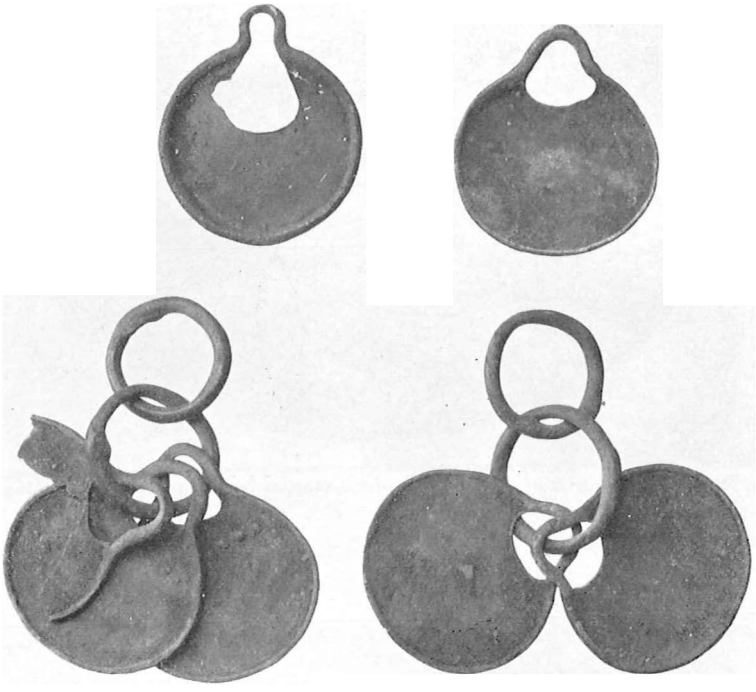
a. Handle and attachment from cauldron found at Abildholt, NW Jutland. After Becker.



b. Shields from (1) Clonbrin and (2) Lough Gur, Ireland. Photo NM Ireland.

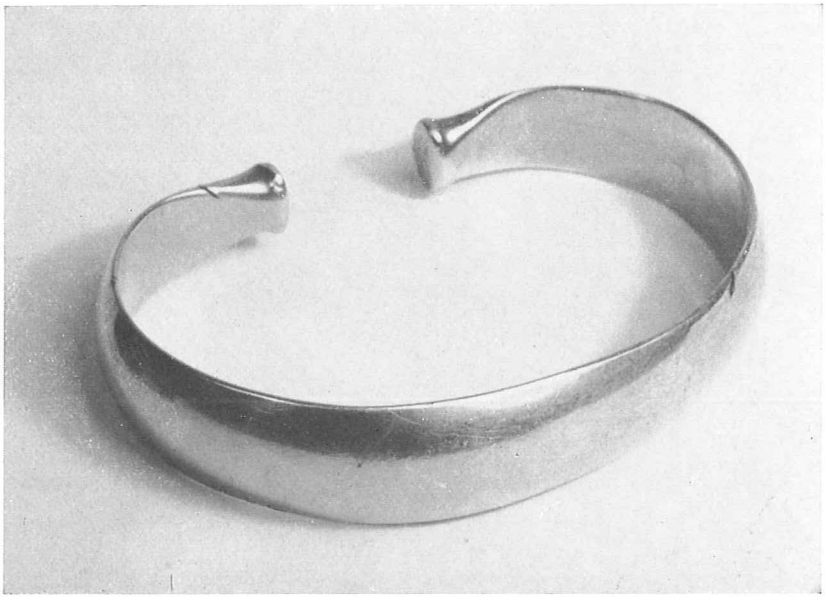


a. Gold twisted bracelet of Kersten Type E9 from Denmark. After Broholm.

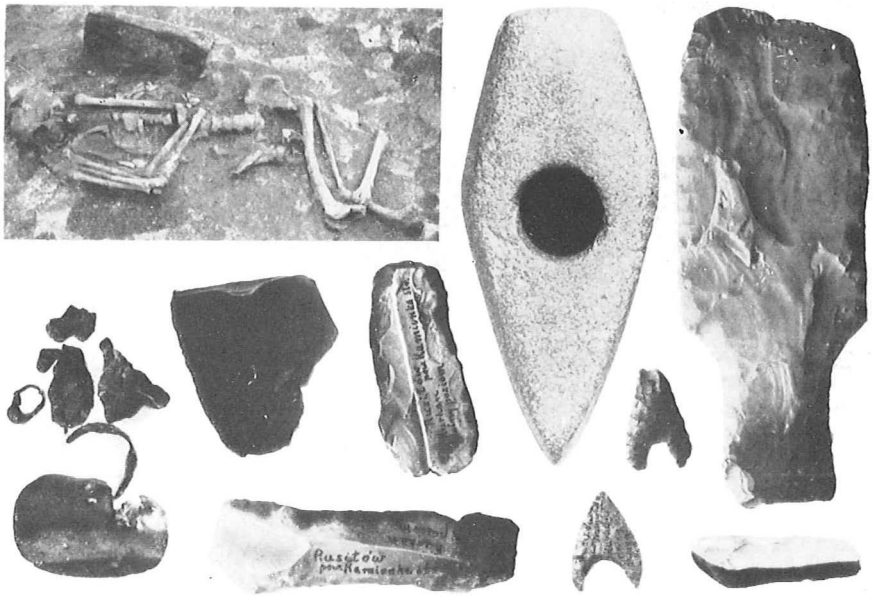


b. Jangles from the hoard of Holsteinborg, Zealand, Denmark.
Photo National Museum, Copenhagen.

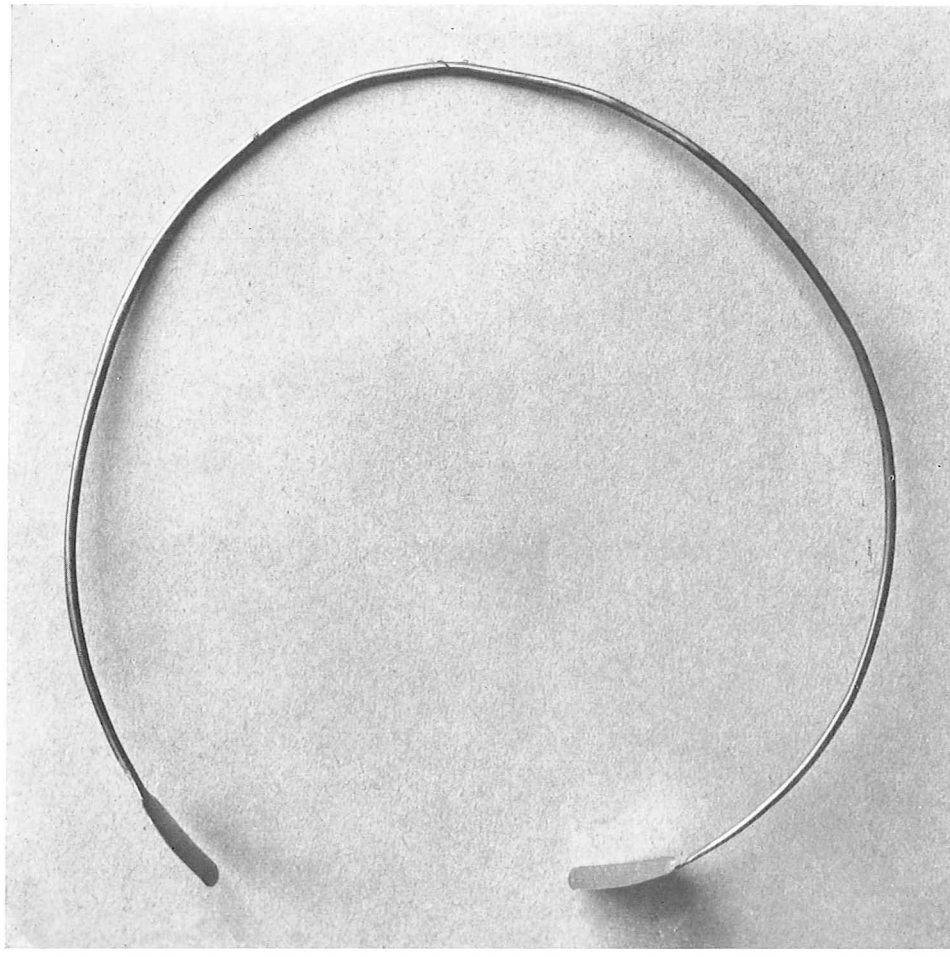
Clay disc from Bognaesgaard, Zealand. Photo National Museum, Copenhagen. Scale 1 : 1.



a. Gold bracelet, Lunteren, Gelderland. After Butler and Van der Waals. Photo RMO Leiden.



b. Grave group from Rusilow, Poland. Courtesy Prof. T. Sulimirski.



Gold diadem or neckring from Arlon, Prov. Namur, Belgium. Photo ACL, Brussels.

TABLE OF COMPARATIVE CHRONOLOGY