

BRONZE AGE CONNECTIONS: FRANCE AND THE NETHERLANDS

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ABSTRACT: Metalwork connections between France and the Netherlands begin in the Tréboul phase, and extend to the time of the Plainseau axes and carps-tongue swords. Both in the Middle and Late Bronze Age French influences, whether from eastern or Atlantic France, are most conspicuous in the Meuse (Maas) région, and less well-represented in the western Coastal area. Tools and weapons predominate.

KEYWORDS: Bronze Age metalwork connections, France-Netherlands, Tréboul spearheads, Plaisir stopridge axes, Rosnoën rapiers, Grigny midwinged axes, spearheads with flame blade, Plainseau axes, carps-tongue swords, Hunze-Ems socketed axes.

1. INTRODUCTION

In this paper we examine the metalwork evidence for relations between France and the Netherlands during the Bronze Age.¹

The low density of find material in the Netherlands and adjacent areas makes it necessary to draw conclusions on a basis of an often rather meagre quantity of finds. The distributional evidence that we have available is also distorted to some degree by regional differences in natural erosional and depositional processes, differences in the degree and kind of find-productive économie activity (ploughing, dredging etc.) and differences in the collecting, conserving, and recording activity of professional and amateur archaeologists. If, in spite of all these and other problems, patterns of a reasonable coherence emerge, it would seem that the disturbances and distortions have not after all entirely concealed the underlying realities. So we offer our material for what it may be found to be worth, and hope that this first attempt at a synthesis will serve as a stimulus and starting point for future research.

2. THE MIDDLE BRONZE AGE

For the Early Bronze Age, the metalwork evidence for connections between France and the Netherlands is entirely negative. There is certainly nothing to suggest contact between the Netherlands and the Armorican Tumulus culture. This is in sharp contrast to the rather abundant evidence for Early Bronze Age contacts between Armorica and Britain (most recently Briard, 1987; MacSween & Burgess, 1984) on the one hand, and on the other, for the well

known connections between Britain and the North Sea Coastal areas (Butler, 1963 and subsequent developments).

The period of French-Netherlands metalwork contacts sets in at the time of the Armorican Tréboul industry.

Noteworthy is the occurrence in the Netherlands of half a dozen spearheads of Tréboul type (figs 1-2; Briard, 1956; 1958; 1965: pp. 79-102, fig. 25). All six of these have the characteristic Y Socket formation; most have typical décoration (ribbing, pointillé, incised Unes or hatched triangles); one has the remarkable large irregular peg-holes as sometimes found in Armorica (fig. 1). Only one of the six has a dealer's provenance; there is no particular reason to doubt the credibility of this group of finds as a whole. The spearheads concerned are good-sized, quality specimens, and are presumably actual imports from the Armorican area. But their occurrence here is, in view of the almost total absence of the type in northern France outside the Armorican area, and in Belgium, quite remarkable.

Our map (fig. 2) shows that four of our six finds are in the Maas (Meuse) valley in North Brabant and NL Limburg (to which can be added the lone Belgian specimen from Tongeren in Belgian Limburg) and two are in the North of the Netherlands.²

A few other objects in the Netherlands can be cited as probable French exports of the Tréboul phase. First of all, there is the rapier of Tréboul-St. Brandan type from Nijmegen (Butler & Bakker, 1961: p. 204, figs 7-8); a type also rather rare in northern France and Belgium (cf. Schauer, 1972; Blanchet, 1984: p. 156, fig. 74:1). The ceremonial swords of Plougrescant type from Ommerschans (Overijssel) and Jutfaas (near Utrecht) are pre-

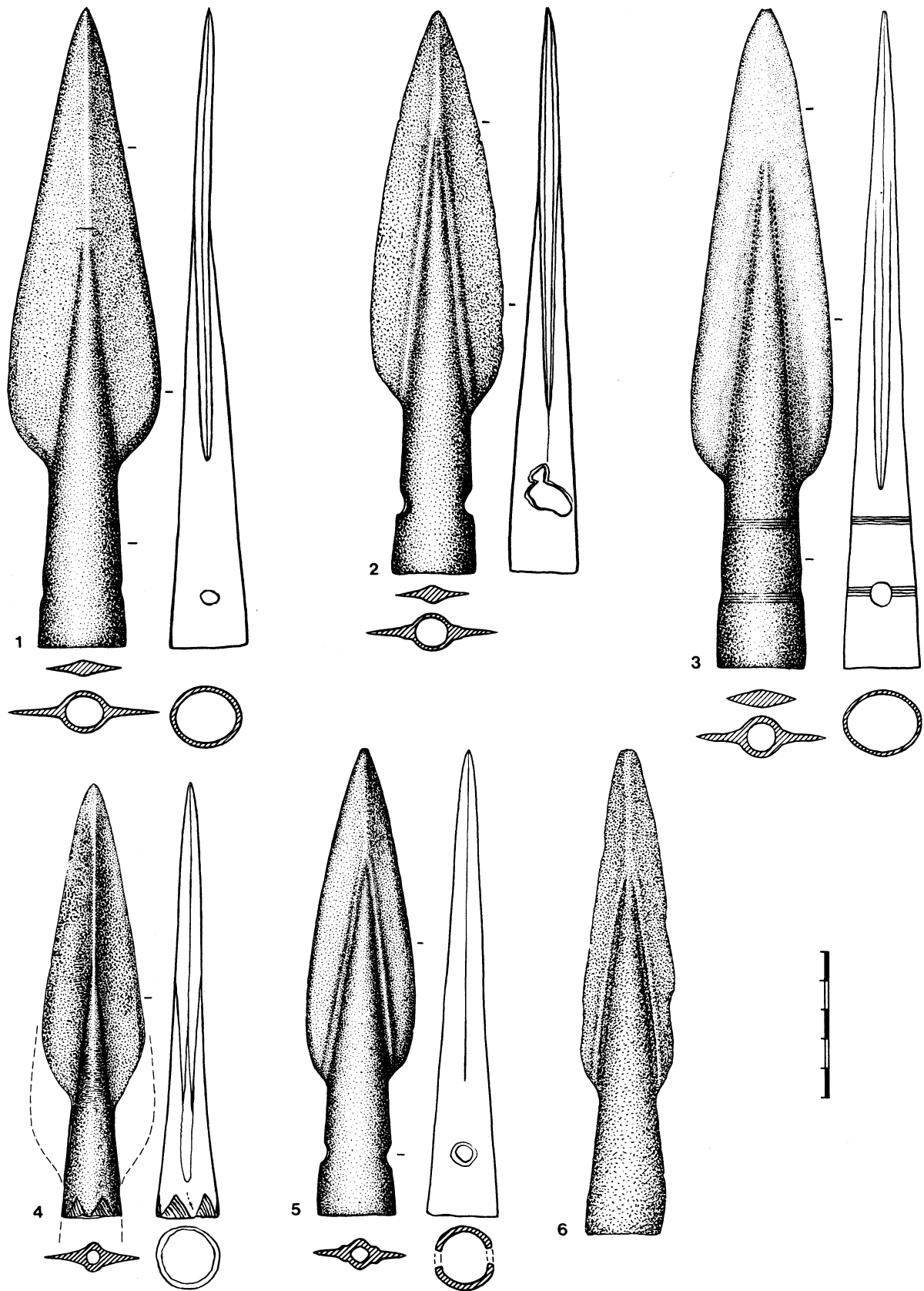


Fig. 1. Spearheads, type Tréboul in the Netherlands (cf. note 2).

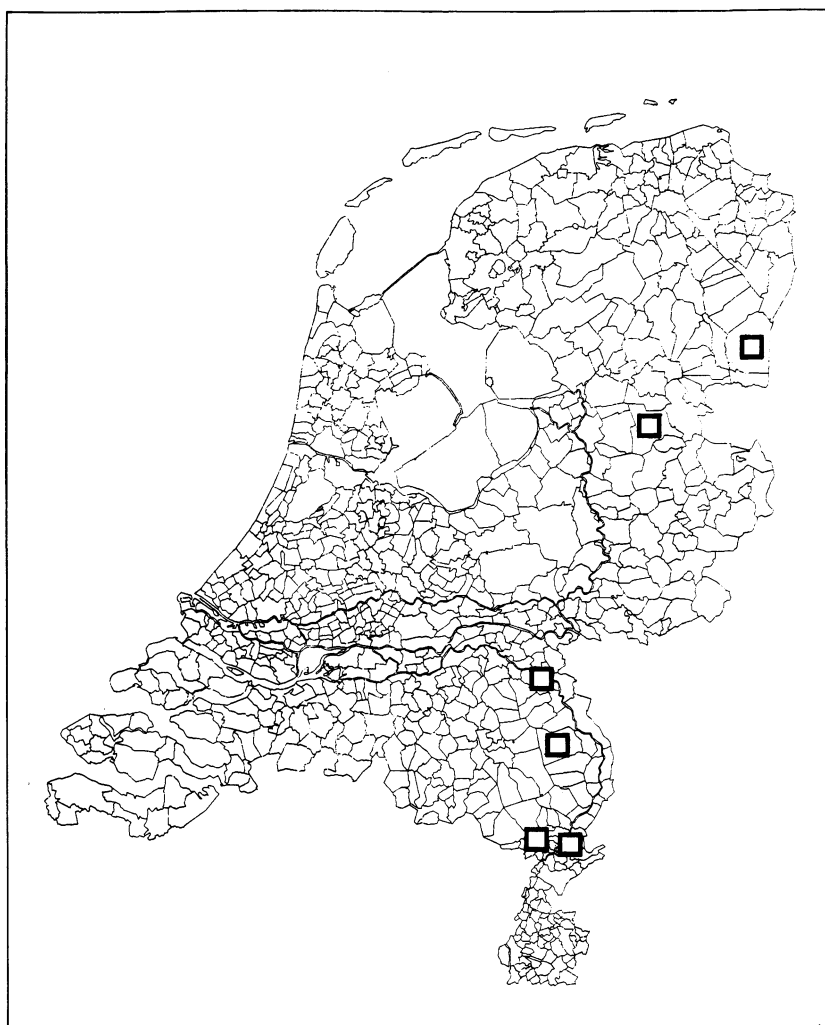


Fig. 2. Distribution of spearheads, type Tréboul (cf. note 2). Base map copyright Gekaart: Geografisch Instituut, Rekencentrum Rijksuniversiteit Groningen.

sumably also Armorican exports of the Tréboul phase, since they are, as Schauer has argued, derivatives of the Tréboul-St. Brandan rapiers and ought not to be much later in date (despite the chronological problem created by the Aegean or Pantalica razor in the Ommerschans hoard, cf. Jockenhövel, 1980: p. 81).

A number of axes of this period may also be cited as arguably West French imports to the Netherlands. Chief among them are four stopridge axes (*haches à bourrelet médiane*; in Blanchet and Mordant 1987, *haches à butée médiane*) of a type which does not appear to be particularly English.³

Two examples are decorated: one from Wassenaar, in the coastal dune area near the Hague, and the other at Maastricht in the Maas valley (fig. 3). Two similar but undecorated stopridge axes occur in the hoard from Voorhout, near Leiden in the South Holland dune area (together with 'Acton Park' North Welsh shield palstaves, etc.: cf. Butler,

1971: NL 14:3,5). Stopridge axes of this type are closely paralleled in a number of French hoards in the Paris Basin and Normandy, such as Plaisir (Mohen, 1977: fig. p. 47; Blanchet & Mordant, 1987: pp. 101-2, fig. 9: 1-5); Muids (Coutil, 1921: Pl. 2:17, 18; Blanchet & Mordant, 1987: p. 95, No. 27, fig. 12; Caen (Edine, 1961; Verron, 1971: p. 51, fig. 12; and Bagemont (Mohen, 1977: figs 31-32, 46 ff, figs 28-30; Blanchet & Mordant, 1987: p. 101, fig. 9:6-8). There is a bronze mould for a stopridge axe of this type from La Rue Sainte-Pierre, Seine-Inf., Normandy (Verron, 1971: pp. 48-49, No. 9; Verron, 1985: p. 143, fig. 1). These axes have a more developed stopridge than those of the Arreton type or the axes in the Bailleul-sur-Therain hoard. A vertical rib is sometimes present on the blade. Some have decoration with hammered furrows (occasionally in the form of inverted concentric V's, as with our specimens from Wassenaar and Maastricht), sometimes with other patterns. Here we may refer

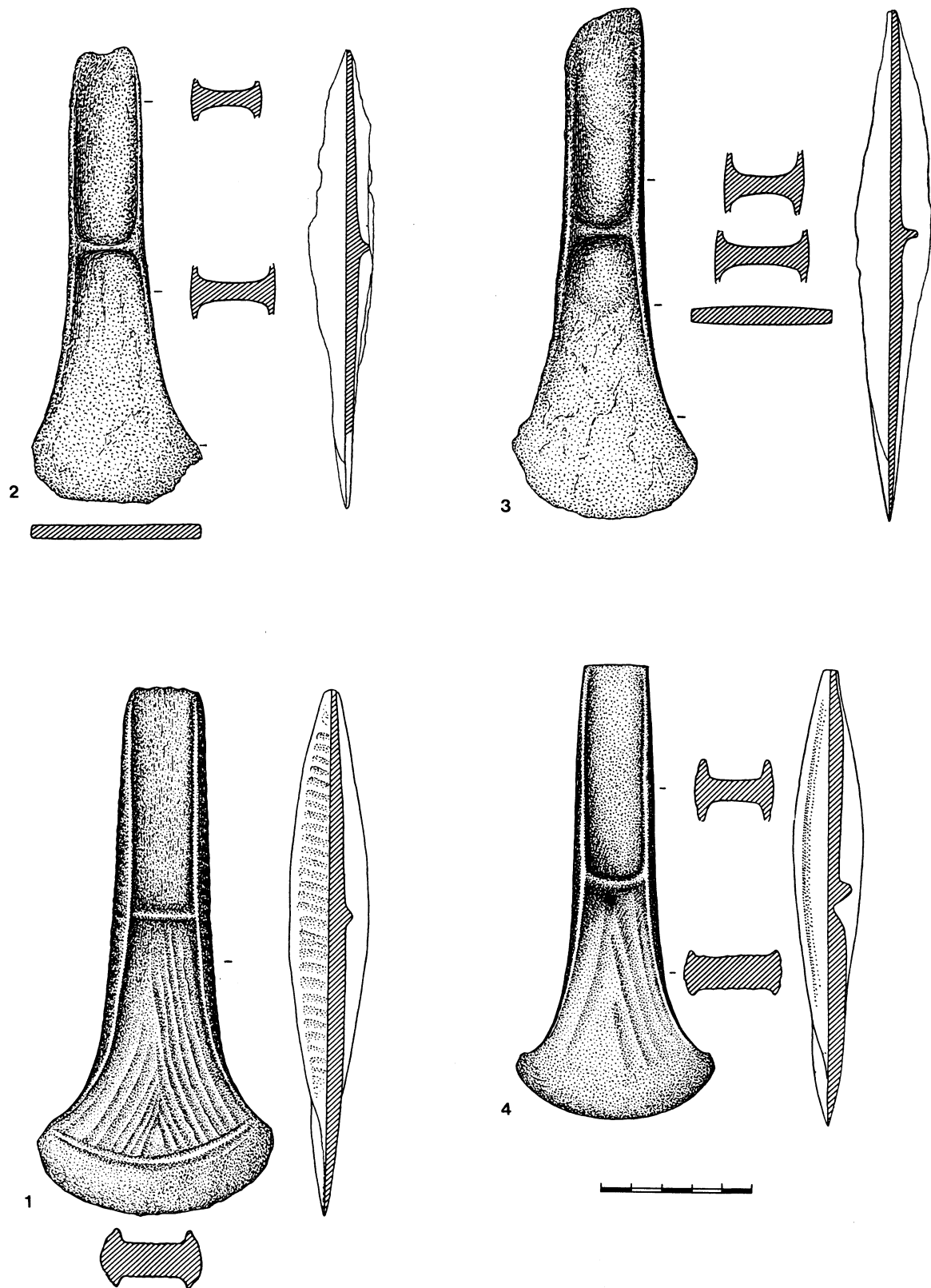


Fig. 3. Flanged axes of type Plaisir in the Netherlands (cf. note 3).

to them as stopridge axes of type Plaisir.

The Voorhout hoard on the South Holland coast, the Hüvede, Kr. Lingen hoard in the Emsland, the Rülöw hoard in Mecklenburg, the Bruchhausen hoard, and the Oldendorf, Kr. Halle hoard in Westfalen are all helpful for the crossdating of this type of flanged stopridge axe (most recent discussion: Kibbert, 1980: pp. 146-147, 149); it clearly belongs to the chronological phase Early Tumulus, Sögel-Wohlde, Acton Park, Tréboul.

There are also a few palstaves in the Netherlands which could be West French exports, though the occurrence of similar palstave types on both sides of the Channel makes the distinction between West French and British types difficult.^{3 3 4}

An early shield palstave from Vlodrop in Limburg (Bloemers, 1973: p. 21, afb. 4:8; present paper: fig. 4) is worthy of consideration in this respect. O'Connor (1980: pp. 431-432) has already characterized it as 'non-British'. The arch-shaped plastic side ornament does not occur on British palstaves, though it is found on some specimens from France and Belgium (cf. Muir: Coutil, 1921: fig. 2:25; Heusden, E. Flanders: Desittere, 1953: p. 91, fig. 4:5).

Another good parallel is the palstave from the small hoard from Hausberge, Kr. Minden (Kibbert, 1980: p. 192 No. 468); which is embellished with hammered furrow ornament in the same style as some of the Plaisir-type stopridge axes cited above. The characteristic Wohlde dagger in this hoard provides its dating. It seems likely that the Vlodrop, Heusden and Minden palstaves come from workshops in the lower Seine area.

A few palstaves with shield ornament from the coastal dune area around the Hague, a shield-and-rib palstave from Norg in Drenthe, and one or two shield-and-rib or trident palstaves from the Nijmegen area (see list below, note 4) could be imports either from Britain or from western France.

Thus, the certain and probable French exports to the Netherlands in the Tréboul phase and the following 'Later Middle Bronze Age' (in the French sense) have their main occurrence in the Maas valley, continuing on up to the Nijmegen area. A few pieces reach the North of the Netherlands. Some axes (stopridge axes, palstaves) occur in the South Holland dune area.

3. THE ROSNOËN PHASE

In this section we have to do with several types belonging to the French Bronze final I Phase, or in Brittany the phase Rosnoën. These include spearheads with flame-shaped blade, midwinged axes of type Grigny, and rapiers and dirks of type Rosnoën.

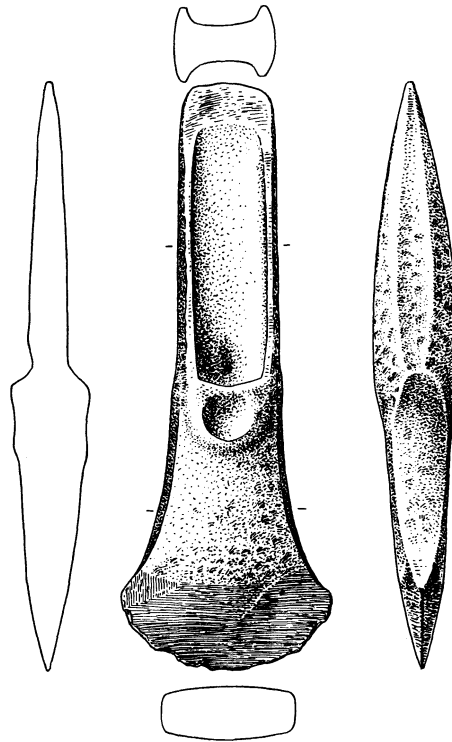


Fig. 4. Palstave, Vlodrop, Limburg. Scale 1:2.

3.1. Spearheads with flame blade

Pegged spearheads with a flame-shaped (ogival, or pear-shaped) blade were already in circulation over a wide area in the Middle Bronze Age, to judge by hoard finds such as Valsømagle in Denmark (Jacob-Friesen, 1967: Taf. 26-7), Ehestorf, Kr. Bremerförde in North Germany (Jacob-Friesen, 1967: Taf. 33) or Neuhaldensleben in Central Germany (von Brunn, 1968: Taf. 80). These spearheads of Valsømagle type (Jacob-Friesen, 1960: pp. 117-129, Taf. 27 ff) often have a ridged socket. This is frequently also the case with the flame-bladed spearheads in a number of characteristic French Later Middle Bronze Age and B.f.I. finds, such as Baux-Ste.-Croix, Eure (O'Connor, 1980: No. 43, fig. 18), Sucy-en-Brie, Val-de-Marne (Mohen, 1977: pp. 66-68) and Rosnoën, Finistère (Briard, 1965: fig. 51:1). In eastern England there is an example in the hoard of Orsett, Essex (O'Connor, 1980: fig. 33). Blanchet (1984) does not discuss the flameshaped spearheads, but O'Connor (1984: p. 448 List 21, p. 790 Map 14) lists and maps French and Belgian finds under the designation 'spearheads with ogival blade'. He shows that there are concentrations in the Paris basin and, especially, in the Belgian Schelde area (cf. Warmenbol, 1986). An example from the

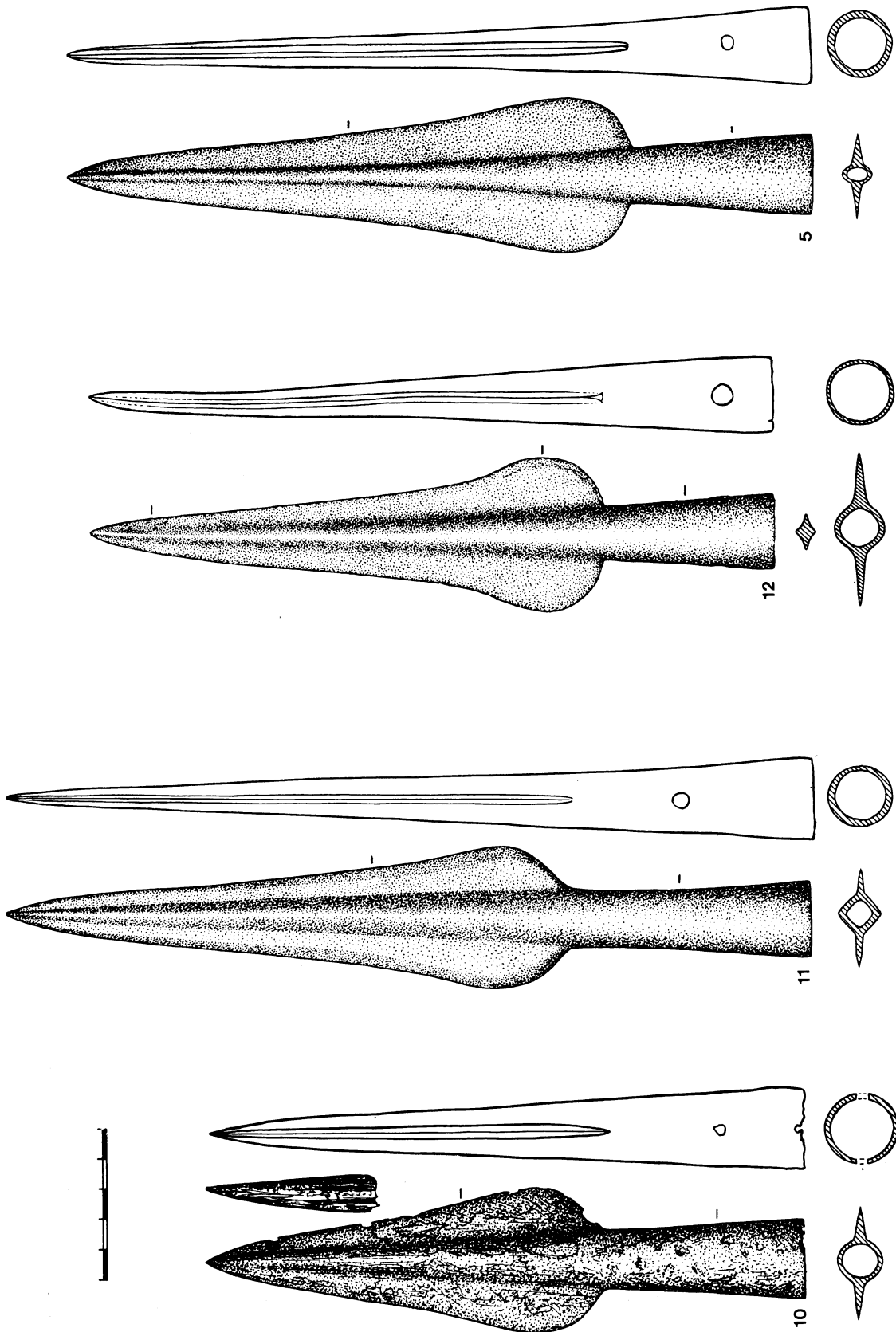


Fig. 5. Spearheads with flame blade and peg-holes in the Netherlands (1) (cf. figs 6, 7 and 8 and note 5).

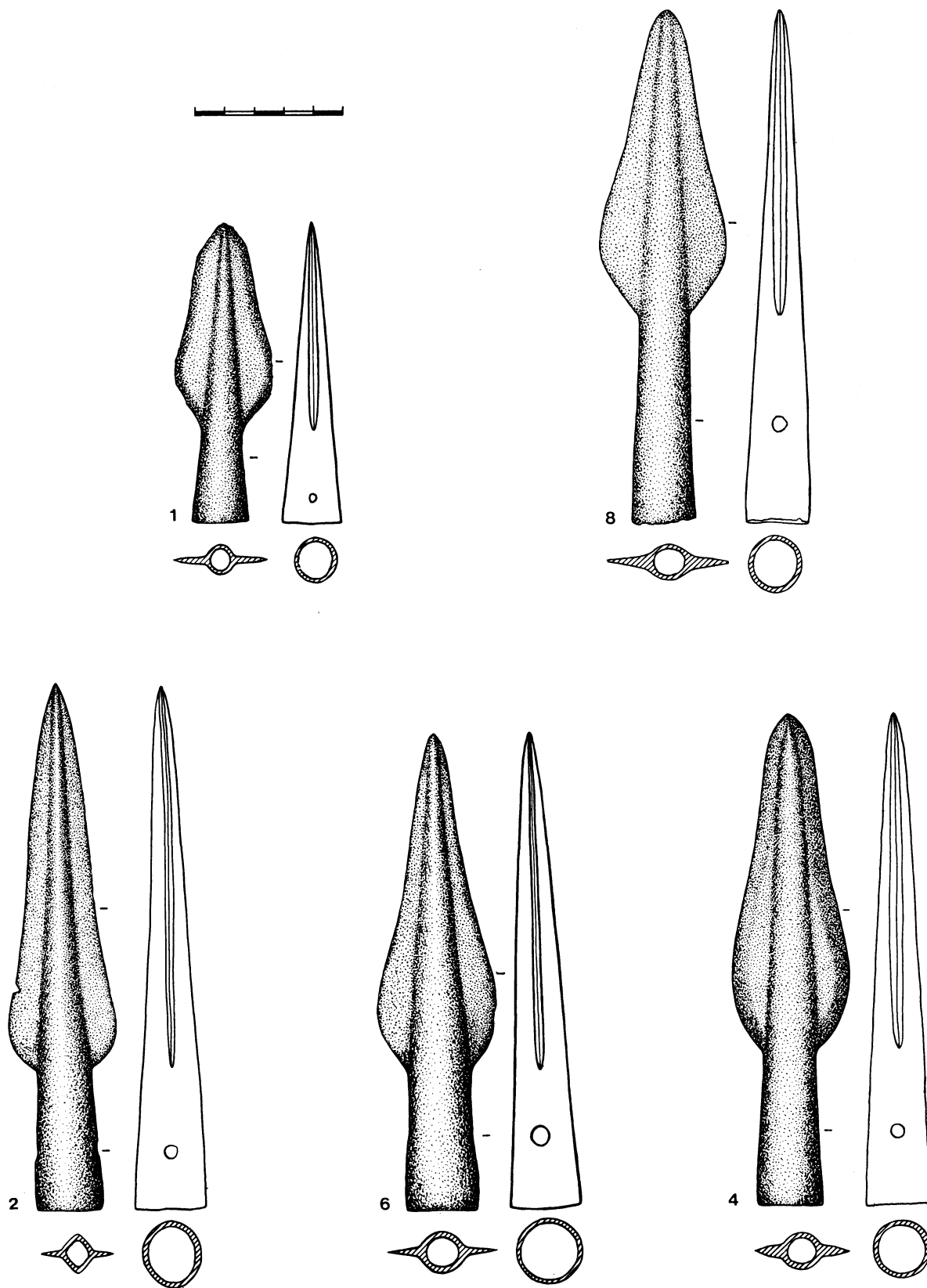


Fig. 6. Spearheads with flame blade and peg-holes in the Netherlands (2) (cf. figs 5, 7 and 8 and note 5).

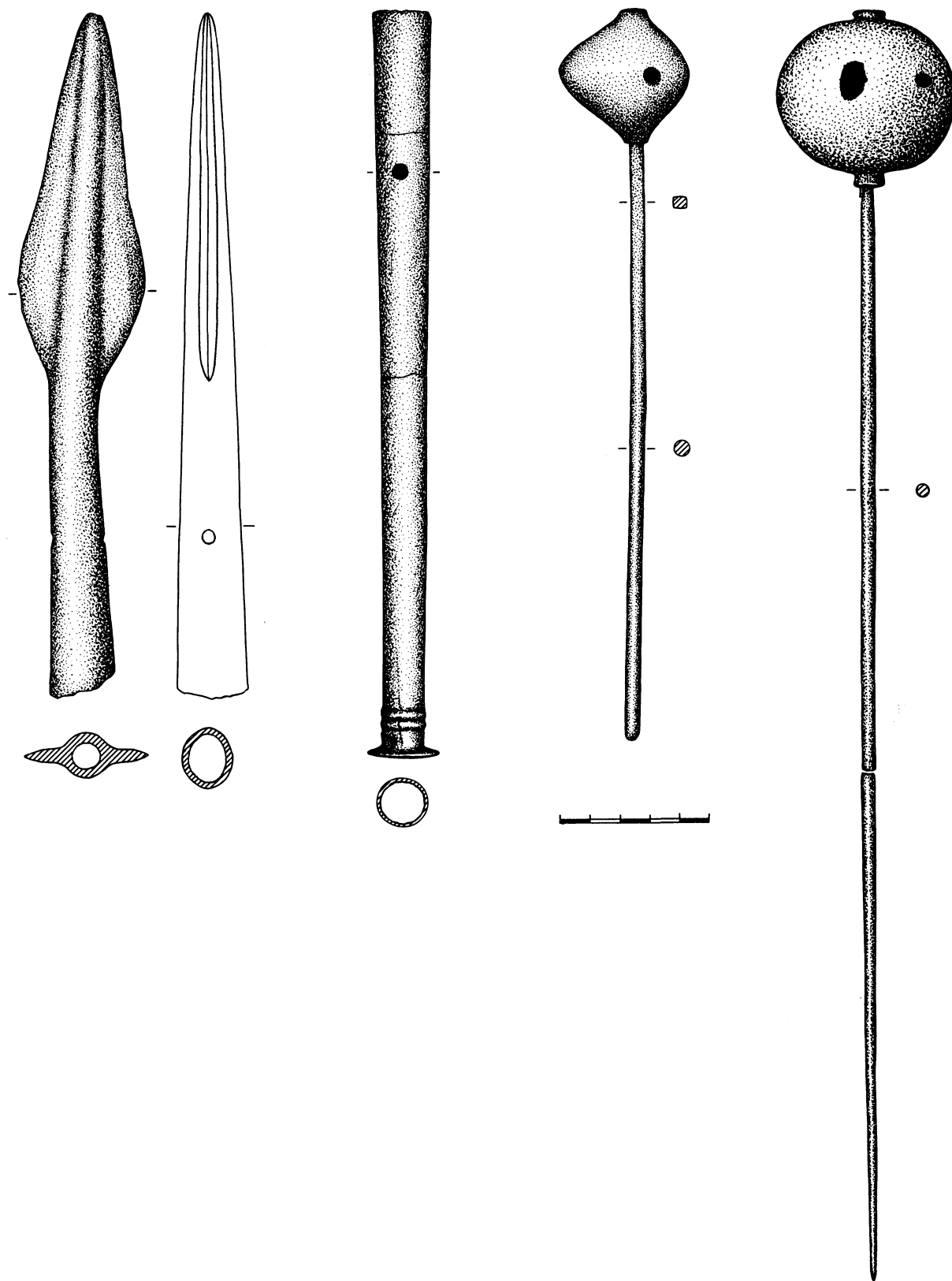


Fig. 7. Spearhead with flame blade and peg-holes in hoard, Heerde, Gelderland (cf. figs 5, 6 and 8 and note 5).

Belgian Maas area is that from Eksel, Belgian Limburg (Marien, 1952: p. 271 afb. 254:4; Bauwens-Lessenne 1968: p. 62).

Of the eleven Dutch examples (figs 5-8), the largest number are found in the Maas region and around Nijmegen, reaching the Rhine at Millingen, with one outlier in the western coastal dune area; several examples are without exact provenance.

The only datable examples in the Netherlands are from the two Late Bronze Age hoards of Heerde (fig. 7; Elzinga, 1957-58), and Berg-en-Terblijt (Butler, 1973: fig. 14). The Heerde hoard includes West Alpine pins of Ha B date, but the long-socketed spearhead with flame blade is remarkably similar to one in the Breton Rosnoën hoard and may therefore be older than its date of deposition; such long sockets were clearly out of fashion by the St. Briec-des-Iffs phase. Cf. the stone mould from Hanvec, Finistère (Briard & Onnée, 1985: p. 131, fig. 6); found with stone moulds for Middle Bronze

Age Armorican palstaves. The assemblage at Berg-en-Terblijt is probably of HaB1 deposition date (Kibbert, 1980 will have it Ha B2) but there are also older objects in the hoard (i.e. the palstave). Be this as it may, the distribution pattern along the Maas route suggests importation from the direction of France, and the long-socketed specimens especially tend to suggest the Rosnoën phase as the principal period of importation (fig. 8).

The spearhead from Kessel, NL. Limburg (fig. 6: No. 1, with triangular blade-tip), is very similar in form to the example from Antwerp (Warmenbol, 1986: fig. 2) and to the French parallels from the French hoards of B.f.IIIb which he cites. These would indeed suggest a Final Bronze Age date as he proposes; though here again it may be remarked that such spearheads are in fact rather atypical for B.f.III, and one may reasonably assume that they are residual Middle Bronze Age products.

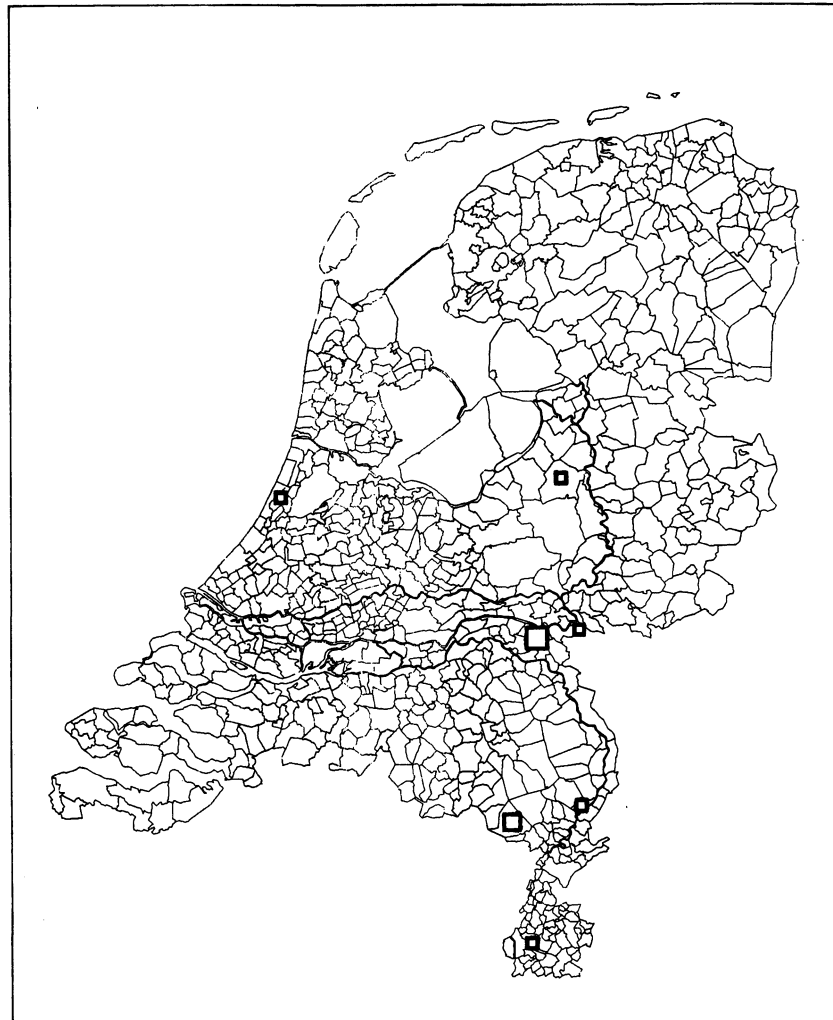


Fig. 8. Distribution of spearheads with flame blade and peg-holes in the Netherlands (cf. figs 5, 6 and 7 and note 5). Small squares: one find; larger square: two finds in one *gemeente*; largest square: three finds in one *gemeente*. Copyright as for figure 2.

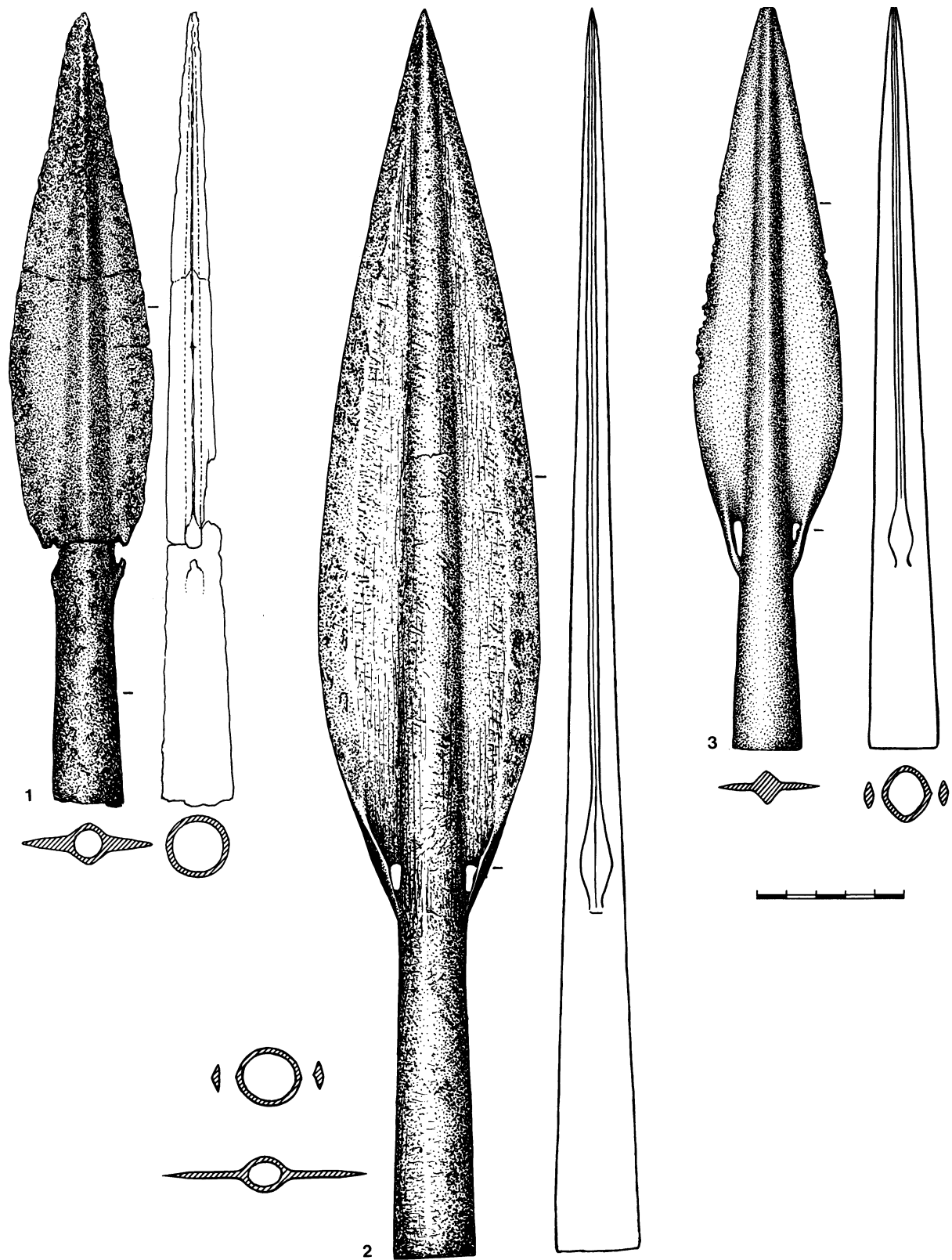
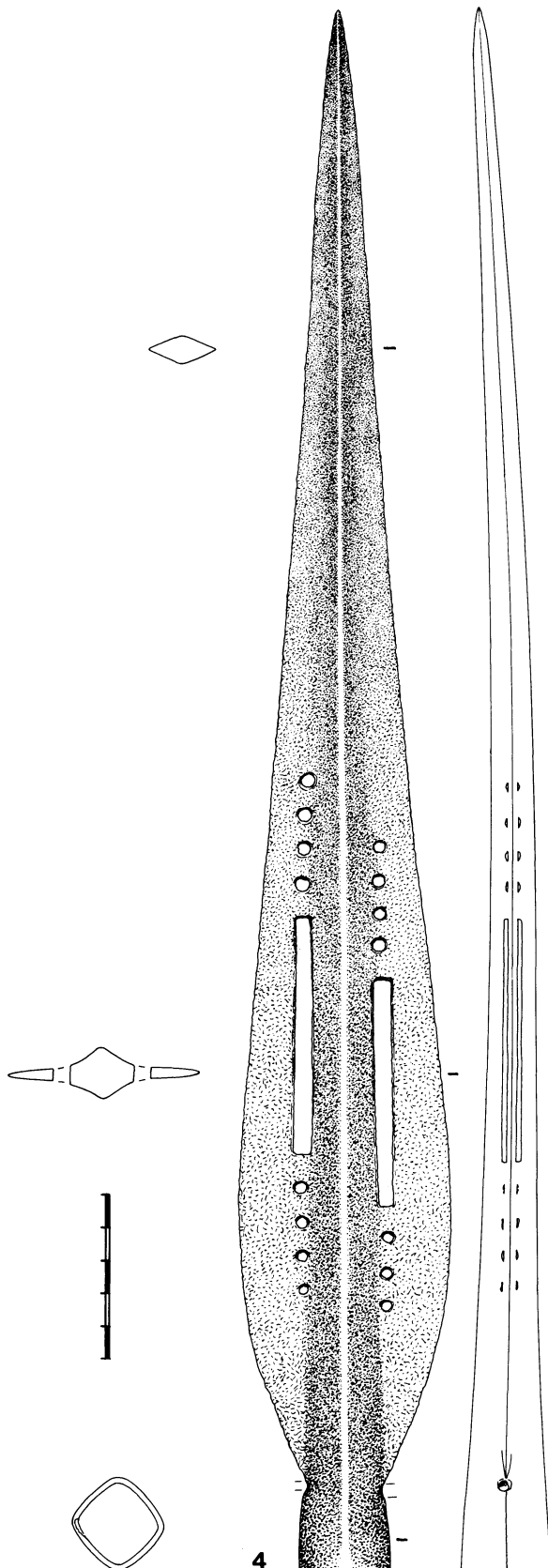


Fig. 9. Leaf-shaped, basal-looped spearheads (1-3) and spearhead with slits and holes in the blade (4) (cf. note 6).



3.2. Contrast: British looped spearheads

It is perhaps interesting at this point to examine the contrast between this distribution and that of the looped spearheads in the Netherlands, which clearly represent a group imported from Britain rather than from France (figs 9, 10).⁵ The few spearheads with leaf-shaped blade and with loops at their base have so far been found only in the northern part of the Netherlands. From 's-Hertogenbosch in North Brabant is a socket-looped spearhead, secondarily converted into a pegged spearhead (Butler, 1961). Along the Old Rhine at Bodegraven is a large triangular-bladed spearhead with basal loops, of Type Enfield (fig. 10). These finds are all quite outside the area in which the spearheads with flame blade concentrate (fig. 11).

3.3. The Tollebeek spearhead (fig. 9:4)

On the same map we have shown the find-spot of the extraordinary long spearhead with slits and perforations in the blade, which recently became known as having been found at Tollebeek in the Northeast Polder. This spearhead, evidently a prestige object, has its origins typologically in the British Wilburton complex, but parallels are nevertheless uncommon in Britain. They are, however, slightly more numerous in the Paris basin; from the Seine at or near Paris come two or three specimens probably from the same hand (Mohen, 1977; Butler & Hoogesteijn, in prep.). There is a related specimen from Claroix, Oise (Blanchet, 1984: p. 260, fig. 141), with, however, exceptionally, a markedly flame-shaped blade and there is a smaller example probably from Champagne (*British Museum Bronze Age Guide*: p. 129, fig. 136). The few related examples from Britain (two from the Thames at Bray; a small specimen from the Tyneside in Northumberland) are less like the Tollebeek specimen, which is therefore possibly an import to the Netherlands from the Paris area.

3.4. The Rosnoën rapiers

Evidently of Northwest French origin are the rapiers and dirks of Rosnoën type (figs 12-13), which, as Briard (1965: fig. 56) showed, occur in considerable numbers between the Loire and the Oise and the Somme, but are rare elsewhere (cf. the list and map of O'Connor, 1980: pp. 491-492 List 73, p. 808 Map 32). In Britain, there are examples in the Dover hoard, and a few from the Thames area (O'Connor, 1980: pp. 355-356 No. 108, figs 34-35).

In the Netherlands five examples are known.⁷ Of these, three constitute a tight local concentration along the Maas in the neighbourhood of Roermond. Three are quite large and impressive sp^{ci}-

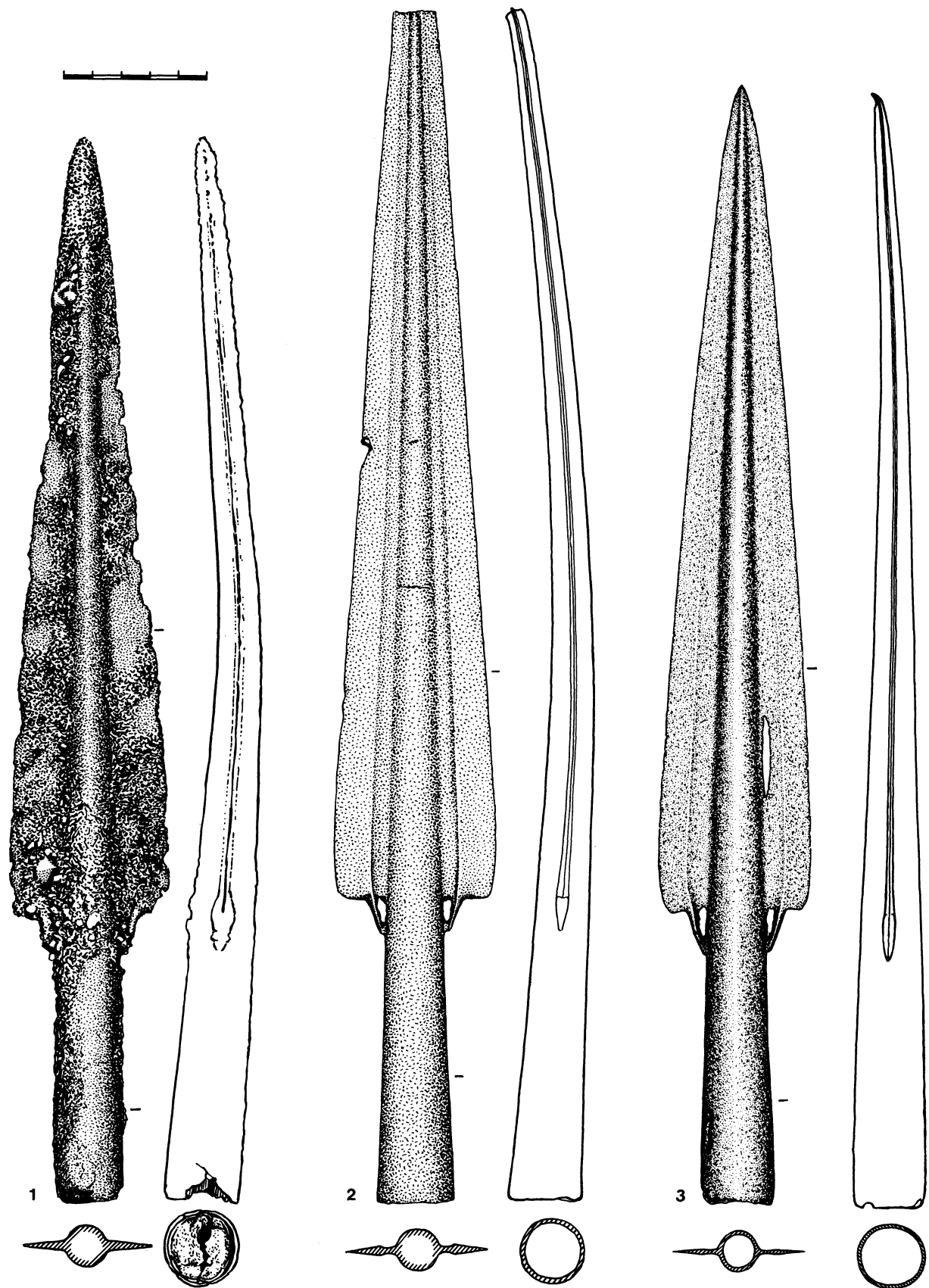


Fig. 10. Spearheads with triangular blade and basal loops (cf. note 6).

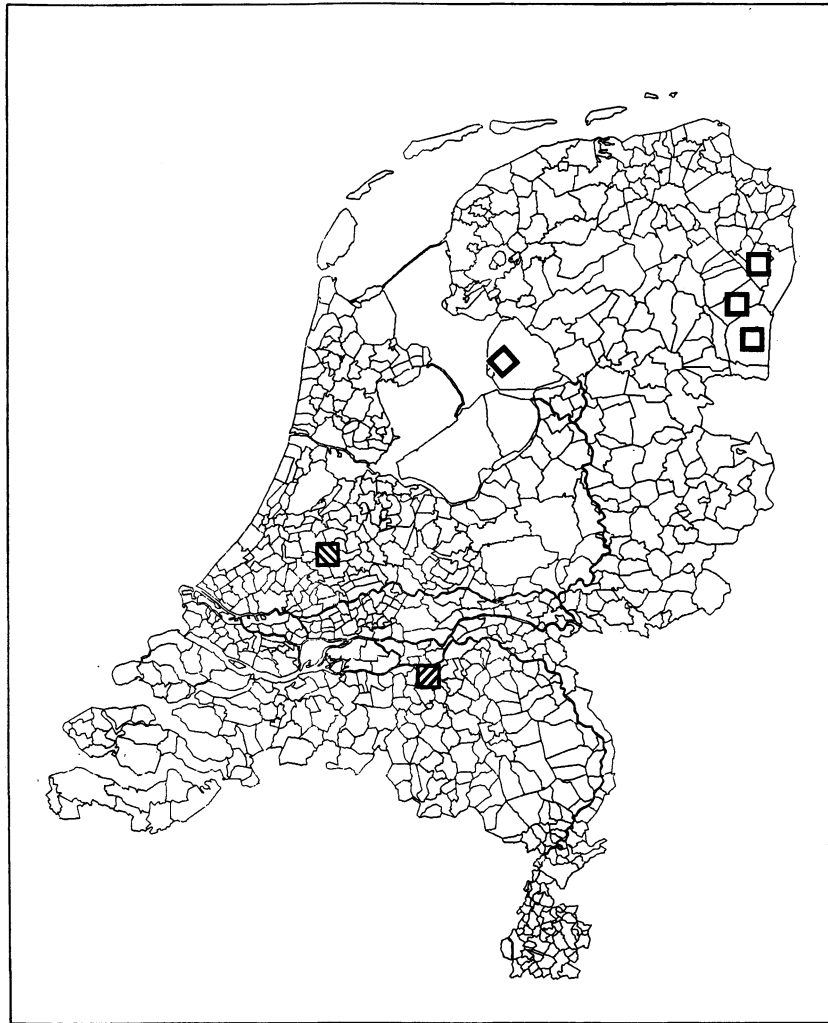


Fig. 11. Distribution of leaf-shaped looped spearheads and the Tollebeek spearhead in the Netherlands. Open squares: with leaf blade and basal loops; squares, heavy-striped: with leaf blade and socket loops; lozenge: with slits and holes in the blade (cf. fig. 9 and note 6). Copyright as for figure 2.

mens, and possibly prestige objects. There is one outlier, a dirk, in the north of the country, in Drenthe; and there is one specimen without provenance. This distribution is certainly curious, especially in view of the rarity of the type in France north of the Somme and in Belgium. The only examples known between Picardy and the NL Limburg group are an example from Wavrin (Nord; O'Connor, 1980: No. 6, citing Piningre, 1976: pp. 7-8, fig. 1) and the River Schelde at Wichelen, East Flanders (Desittere, 1976: p. 89, fig. 4.5; O'Connor's no. 23).

The French wave which thus hit predominantly the Maas region of the Netherlands in the Rosnoën-B.f.I. phase included two types of weapons (the flame spearheads and the Rosnoën rapiers), of West French origin, and one tool type (which, in the majority of cases, is of such quality that it might be considered, perhaps, as a sort of battleaxe) from eastern France. Their contemporaneity is not esta-

blished by Dutch evidence, but rather by French hoards. All three of these types are represented in the hoard of St-Just-en-Chaussée, Oise: Blanchet, 1984: figs 121:5 (spearhead), 121:7 (fragment Grigny axe) and fig. 120 (Rosnoën rapiers). Hoard 1 from Cannes-Ecluse (Seine-et-Marne; Gaucher & Robert, 1967: pp. 169-223) contains Grigny axes (figs 5-8) and Rosnoën swords (fig. 24), as well as a fragment of a probably flame-bladed spearhead (fig. 25:13). Grigny axes and Rosnoën rapiers are also associated in the Dover-Langdon Bay hoard off the British coast (O'Connor, 1980: figs 34-35).

If we regard these three types as a functional complex (which may be true only in the area of import), it is noteworthy that we have to do with a purely masculine affair: none of the numerous sorts of French ornaments of the period, such as bracelets and pins, are involved. It is, however, tempting to associate the importation of the only known example of an East French B.f.I. pin in the Nether-

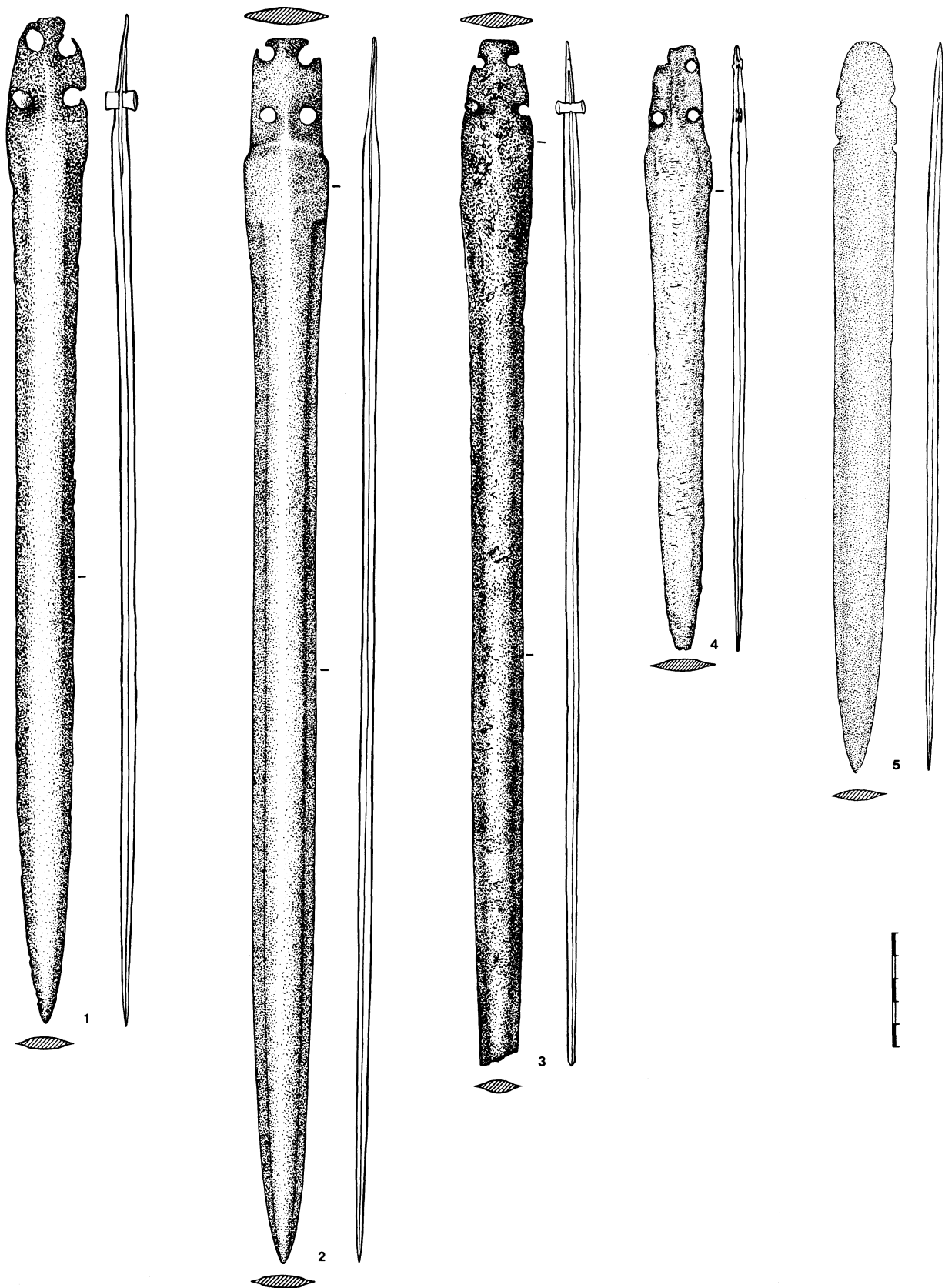


Fig. 12. Rapiers, type Rosnoën in the Netherlands (cf. fig. 13 and note 7).

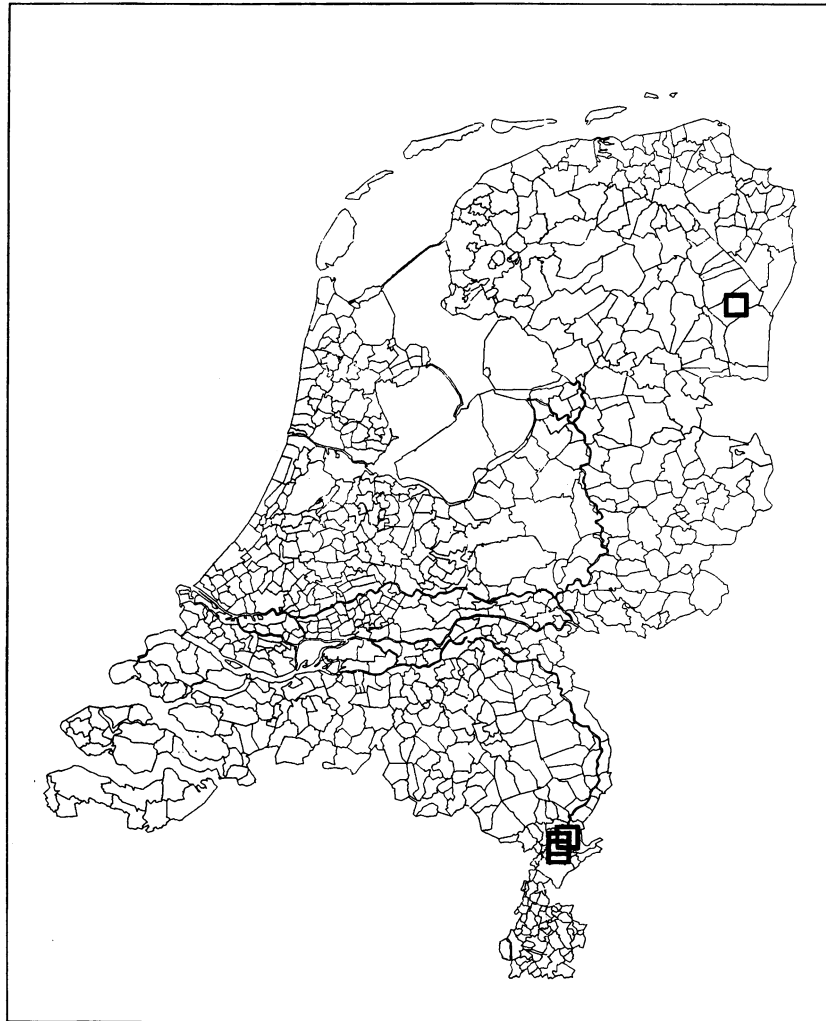


Fig. 13. Distribution of rapiers, type Rosnoen in the Netherlands (cf. fig. 12 and note 7). Copyright as for figure 2.

lands, the 'Villethierry' pin from a grave in the urnfield of Gasteren in Drenthe (Kooi, 1979; Butler, 1969; 1979: figs 47,56) with this French wave, where it conveniently provides a dating for the earliest, Gasteren phase of the North Netherlands urnfields.

3.5. The Grigny axes

Re-examination is in order of the possible origins of the midwinged axes found in the Low Countries. We have, hitherto thought of winged axes as, generally speaking, a 'Central European' phenomenon. Millotte et al. (1968), in a classic paper accompanying a corpus of the French midwinged axes, have shown, however, that there was a core area of midwinged axes in western Switzerland and eastern France, from which there was a radial spread, inter alia, to the Seine area, the Marne, and the Moselle. In his analysis of the winged axes of the

central part of western Germany, Kibbert (1980: pp. 47-56) has carried the story farther. He has shown that his midwinged axes of 'Type Grigny' are indeed far less common in western Germany than in eastern France. In the area of his study they are really only fairly numerous in the Middle Rhine region. Their almost total absence in the North Rhine-Westphalian area is really most striking; so that it is no longer possible to imagine that the Rhine route played a role in their dissemination northwards.

There is, however, a thin but clear chain of finds of Grigny axes going northward from the French areas of concentration via the Maas. The chain begins with three finds from the French département Meuse, illustrated by Milotte et al. (their No. 103-5, from Inor, Pouilly-sur-Meuse, and Verdun respectively) through the Belgian Meuse valley (prov. Namur: Matagne-la-Petite; prov. Liege: Fle-

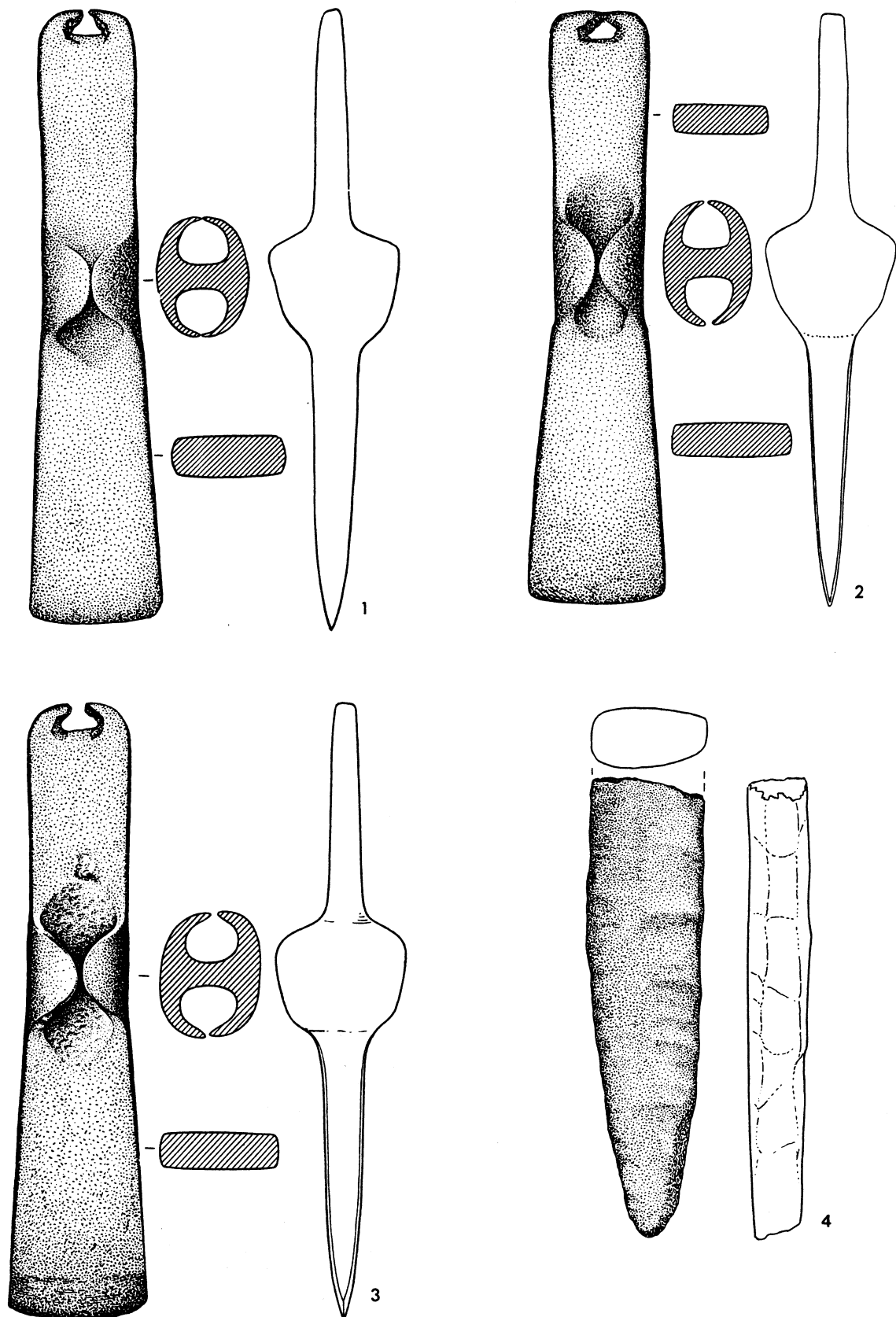
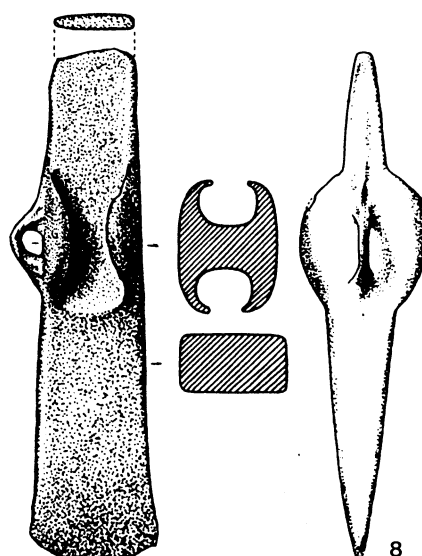
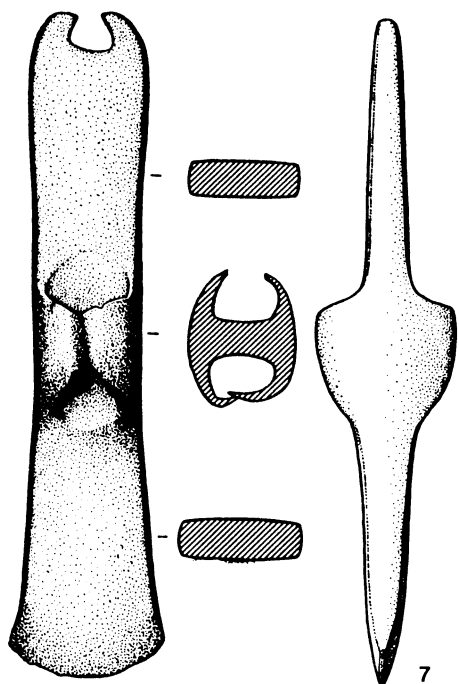
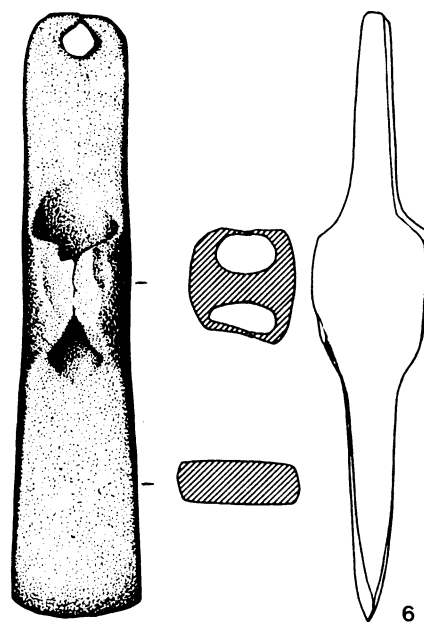
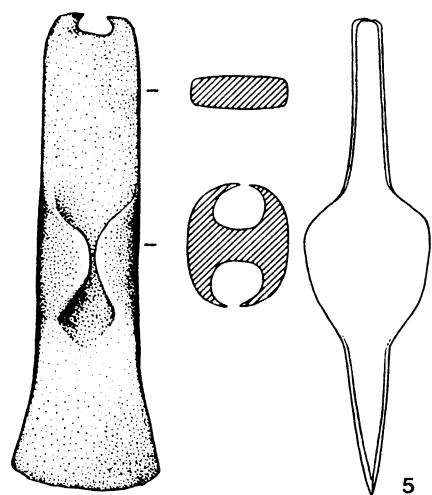


Fig. 14. Midwinged axes of type Grigny in the Netherlands (cf. fig. 15 and note 8).



malle-Haute; Belgian Limburg: Neeroeteren hoard); NL Limburg: the two hoards from Swalmen; Heijen; finally Elst in the Betuwe. The German find from Wankum, Kr. Geldern (Kibbert, 1980: No. 94) is, though on the German side of the border, not far from the Maas, and evidently is to be associated with our Maas chain. A geographical stray is the Grigny axe dredged up between Amsterdam and Diemen along the IJsselmeer coast (figs. 14-15).

Some of the Grigny axes apparently imported along the Maas route are quite large and impressive specimens; this and the fact that they occur in two seemingly ritual hoards (those in the tumuli at Swalmen), plus the hoard of Neeroeteren, which seems to have contained at least one Grigny axe (the exact nature of the other axes is unknown) suggests that these axes were not unimportant artefacts, and possessed prestige value.

In addition, there is a looped midwinged axe from 'South Limburg' (exact find-spot unrecorded) which must also be an import from France; its best parallels are from the Somme area, such as one from the Caix hoard (Blanchet, 1984: pp. 244-247, fig. 133).

The dating of Grigny axes, according to Kibbert, is primarily the earlier part of the Urnfield period (*frühe and ältere Urnenfelderzeit*), with allowance for some examples occurring in hoards of later deposition.

4. THE PLAINSEAU PHASE

A French wave which did *not* reach the Netherlands is that represented by the St. Brieuc-des-Iffs industry of Brittany and the Paris basin; unless the Tollebeek spearhead mentioned above (3.3) be taken as an exceptional representative of this industry.

We have seen that in the Middle Bronze Age and the Rosnoën phase weapons and weapon-like axes were the main constituents of French influence in the Netherlands. In the climatic Late Bronze Age phase represented in the Paris basin and Picardy by the Plainseau industry, more mundane axes seem to be the principal export product (figs 16-17).

Twenty-five years ago the present writer (Butler, 1963: pp. 82-86) presented a series of axes in Belgium, the Netherlands and beyond as 'southeastern' socketed axes; the term 'southeastern' having reference to the southeast of England. It has since become clear that the axes in question are not really exports from Britain, but are rather of the (admittedly related) type which in recent years has become known as the socketed axe of Plainseau type, certainly the characteristic type of socketed axe in France from the Paris basin northwards (Gaucher & Mohen, 1974: p. 62; cf. Blanchet, 1984:

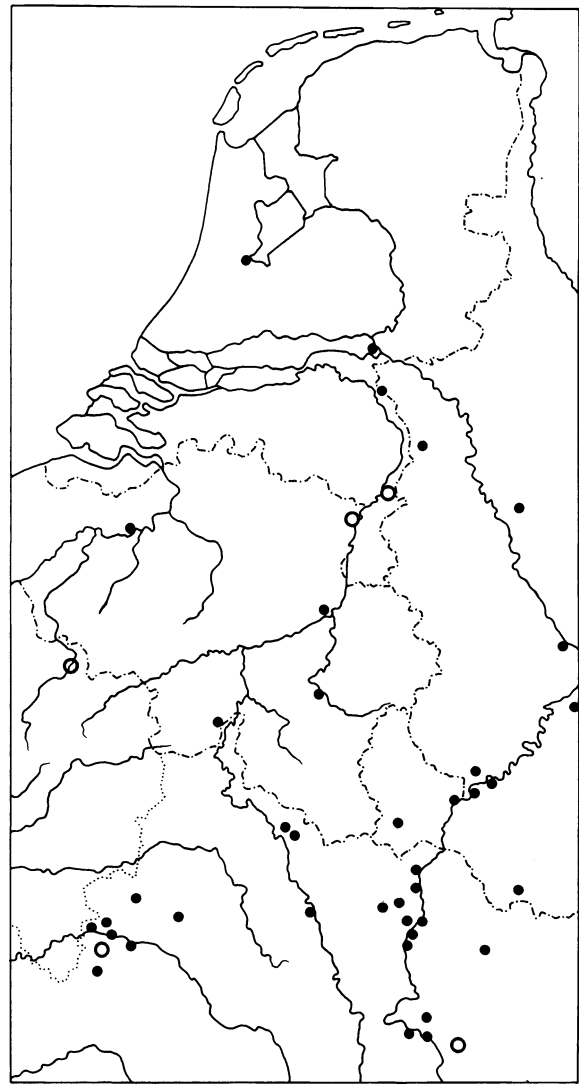


Fig. 15. Distribution of axes of type Grigny in the Maas/Meuse valley and adjacent areas (cf. fig. 14 and note 8). Open circles: hoards.

pp. 278 ff, esp. 282; Gaucher, 1981: p. 72, figs 145 ff; Briard & Verron, 1976: fiche 711, 1-2p; O'Connor, 1980: pp. 161 ff).

This type is well-represented in Belgium (Desittere, 1953: list p. 91, fig. 3; O'Connor, 1980: pp. 163-164, List 123, Map 48), though these lists need to be critically re-examined to distinguish between true Plainseau axes, true British 'southeastern' axes, local Belgian varieties (Hoogstraten hoard, Warmenbol, 1987; Han cave finds) and to eliminate possible modern imports. Our map (fig. 18) shows nine find-spots in the Netherlands (there are also a few unmappable specimens without exact provenance) of typical Plainseau axes which can be presumed to be imports from the Picardy/North French region.⁸

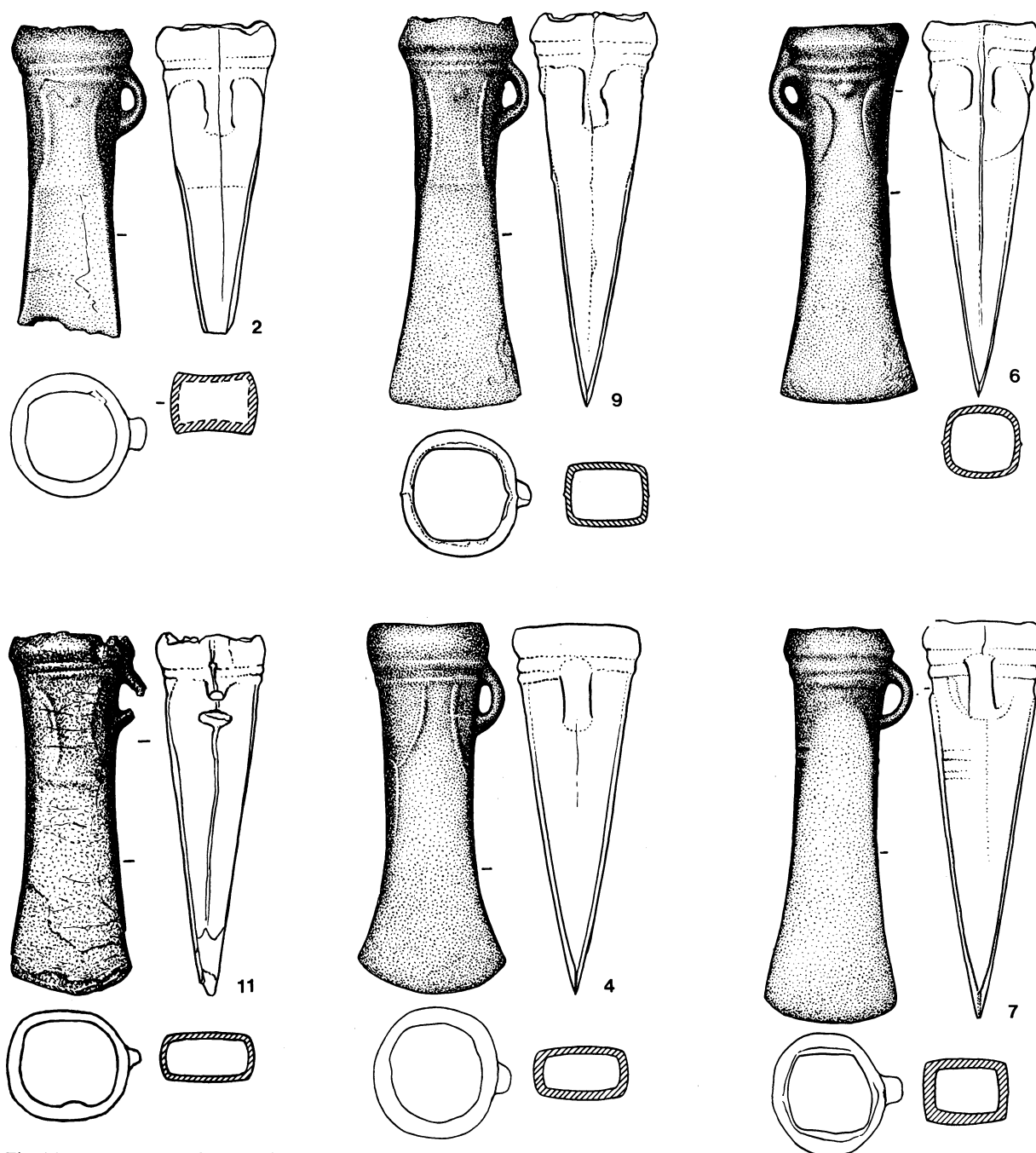


Fig. 16. Socketed axes of type Plainseau (1) (cf. fig. 17 and note 9).

Most of the imports are in the south of the Netherlands, i.e. in NL Limburg and North Brabant, with only two finds in the north of the Netherlands. The reason for the import of these axes is obscure, since the region in question had its own axe industry (Butler, 1973).

A complement to the Plainseau axes is the small number (three) of carps-tongue swords known in the Netherlands: one along the Maas in Limburg, two in the Arnhem area.⁹ With this small group may

be associated the German North Rhine find from Wesel, Kr. Rees (Joachim, 1973: p. 259, fig. 2). Carps-swords are an 'Atlantic' type, with their major concentrations in Armorica and southern England; they do not seem, however, to have penetrated to any significant extent into Picardy or Belgium. Whether these swords reached their destination as the result of maritime contact via the English Channel and the Rhine estuary, or via the Maas route, is unclear (figs 19-20).

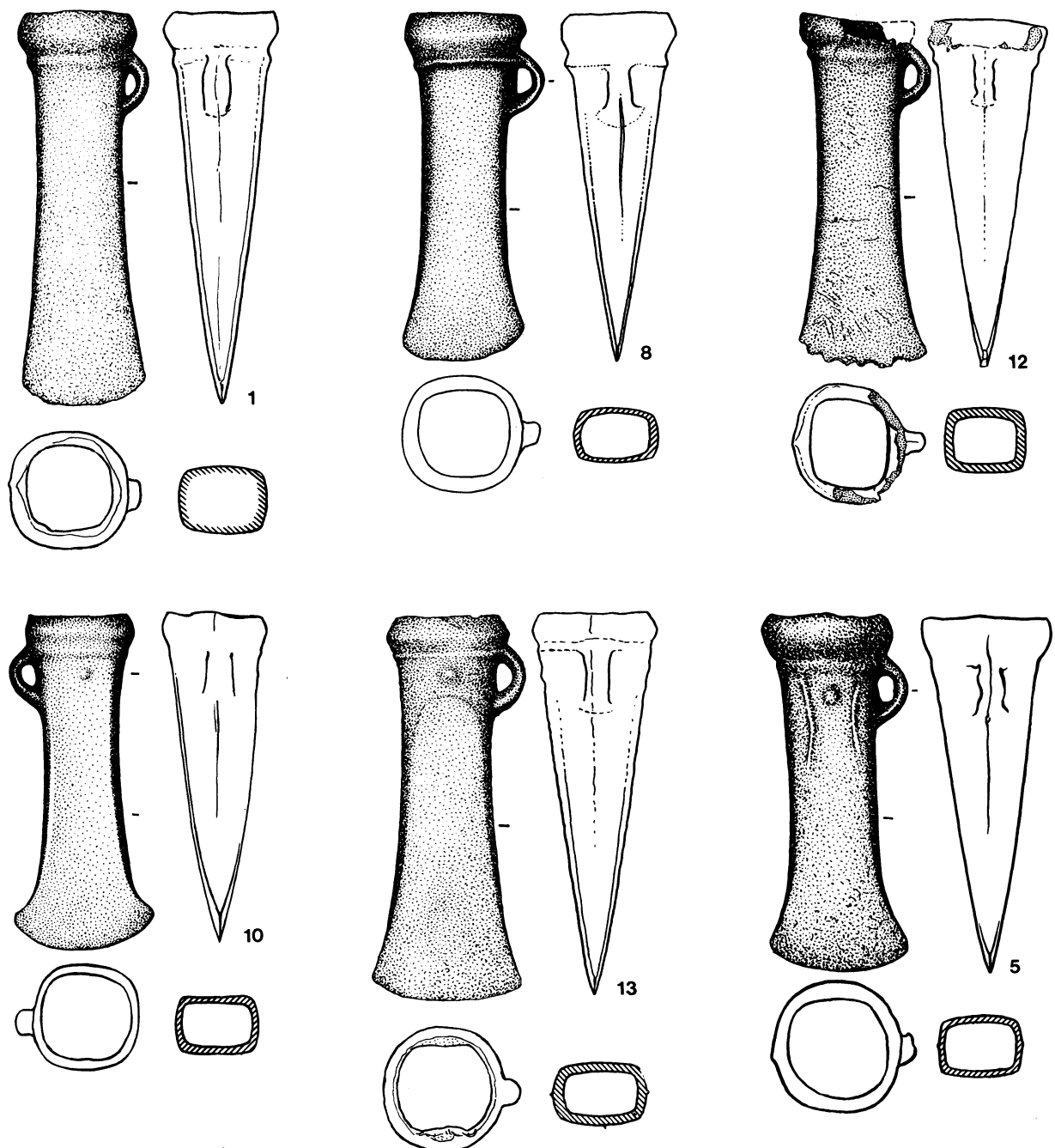


Fig. 17. Socketed axes of type Plainseau (2) (cf. Fig. 16 and note 9).

5. HUNZE-EMS SOCKETED AXES

A typical 'Hunze-Ems' socketed axe *mit profilier-tem Tüllenmund* was illustrated by Coutil (1921: p. 497, fig. 1:70) as having been found at Vaux-sur-Aube, Calvados. This complements the similar example from the Birchington, Kent hoard on the Thames in southeast England: (Worsfold, 1943: PL.XL3; O'Connor, 1980: pp. 384-385 no. 15; II,

fig. 59:15). Examples of these typically North Netherlands-German Emsland products also found their way eastward as far as East Germany and western Poland (hoards from Plestlin, Kr. Demmin and Vietkow, Kr. Stolp: Sprockhoff, 1941: Taf. 42-51). These seem to point to maritime contacts, along the English Channel, the North Sea and Baltic coasts.

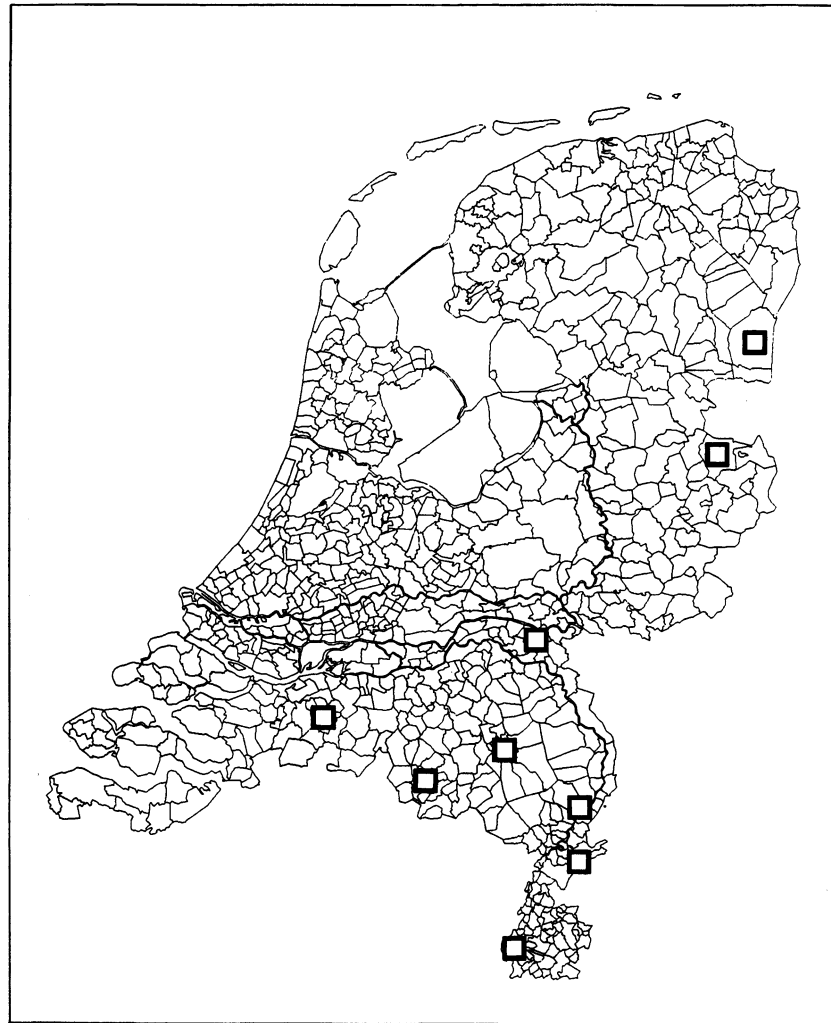


Fig. 18. Distribution of socketed axes of type Plainseau in the Netherlands (cf. figs 16-17 and note 9). Copyright as for Figure 2.

6. INTERPRETATIONS

We have seen that most of the evidence for Bronze Age metal-work connections between the Netherlands and France occurs in the Maas area, suggesting that the Maas route was of importance for the northward penetration of French influences. Even explicitly Armorican types, i.e. the Tréboul spearheads of the earlier Middle Bronze Age and the Rosnoën rapiers of the B.f.I. phase, appear to come by this route, though with the few carps-tongue swords at the end of the Bronze Age the route of arrival is unclear. The Maas route also brought East French products, such as the Grigny axes, and presumably via this route came also the occasional rare object such as the Gasteren pin.

What sort of contacts could have led to the importation early in the Middle Bronze Age of Armorican Tréboul spearheads and the Nijmegen Saint-Brandan sword to the Maas valley, over a

distance of the order of 700 kilometres? The Maas area was then possibly something of a frontier zone between two major cultural groupings: the Sögel-Wohlde-Early tumulus sphere on the east, and on the west the Hilversum-Drakenstein complex, with its North French relatives which have come into focus to some extent in recent years (cf. Blanchet, 1984; Burgess, 1987). It would be rather naive to assume that such prehistoric cultural constructs behaved as mutually antagonistic power blocs; on the other hand, it is not necessarily absurd to imagine tensions and conflicts where differing cultural groups, with perhaps different languages, customs and interests, came into contact. It is also likely that in the period concerned weapons and tools of quality were not being produced everywhere, and that importation from a distance was required to meet the needs of defense and/or to confirm the status of the local leaders. The well-known rich inventories from Drouwen in Drenthe

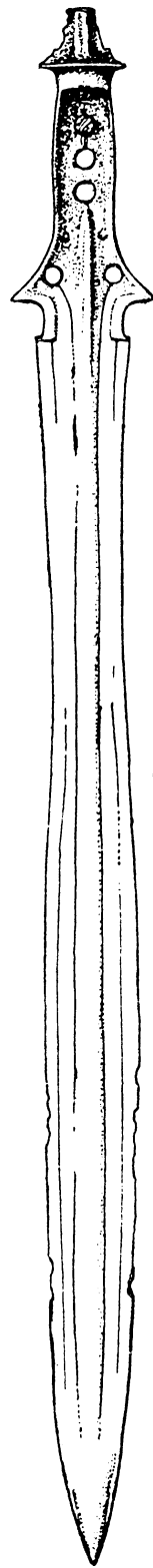


Fig. 19. Sword from Lobith, Gelderland. After Vollgraff and Roes (cf. fig. 20 and note 10). Scale 1:3.

(most recently Butler 1987) and Overloon on the NL Limburg-North Brabant border (Butler, 1971: NL 13), containing imports from far off, are eloquent enough in this respect. The imported Tréboul spearheads and other items mentioned above are in this sense a western answer to the Sögel-Wohldede arms and accoutrements from the East. The exact nature of the exchange network which resulted in their arrival along the Maas remains obscure.

The B.f.I.-Rosnoën wave is somewhat more complicated, as it involves components from at least two different directions - from Armorica and from eastern France - which join on to the flame-bladed spearheads of less clear origins. We are not likely to be dealing with a folk migration, as the import element is a purely masculine complex, the female component is lacking. The presence of local types of palstaves in the Maas valley (Butler, 1973: figs 1-6) tends to suggest that a local toolproducing industry was already established by that time; whether weapons were also being produced locally is not clear. We should perhaps be thinking of an established cultural group inhabiting the Maas valley with a deficiency in weapon production, satisfying its needs by long-distance exchanges. What went back in return is obscure; it is in any event likely to have been non-metallic. The socketed axes of Plainseau type are the normal, every-day work axes of the Paris basin and Picardy, and represent perhaps no more than an export product from a metallurgically more active region to one less active.

7. NOTES

1. This paper was originally presented to the 'Colloque du Bronze' in Lille in 1984. Its publication has been delayed in order to be able to take account of the material published in the great work of Blanchet (1984). This and other recent publications have occasioned some revision of our text. The present survey obviously owes a great deal to the material assembled by Desittere (1976) and O'Connor (1980), and it is intended that this paper be read in conjunction with those works. The lists accompanying the present paper may, however, differ in detail from theirs, as we have edited them in conjunction with our own researches on Bronze Age Metalwork in the Netherlands and in the course of the preparation (together with W. de Vries-Metz) of a *Prä-historische Bronzefunde Europas* volume on bronze axes in the Netherlands, Belgium and the northern part of France. There are also differences in interpretation and emphasis. We are grateful to M. A. Martel for assistance in the Final compilation of this article.

The drawings for this paper were prepared for my monograph *Bronze Age metal-work in the Netherlands* (in prep.), with the support of the Biologisch-Archaeologisch Instituut (Groningen), the Albert Egges van Giffen Instituut voor Prae- en Protohistorie (Amsterdam), and the Netherlands Organization for Pure Scientific Research (ZWO). Full documentation of the finds will appear in that work, and is here given in summary form only. The distribution maps were drawn by the Cyber computer of the University of Groningen. The mapping program for this was devel-

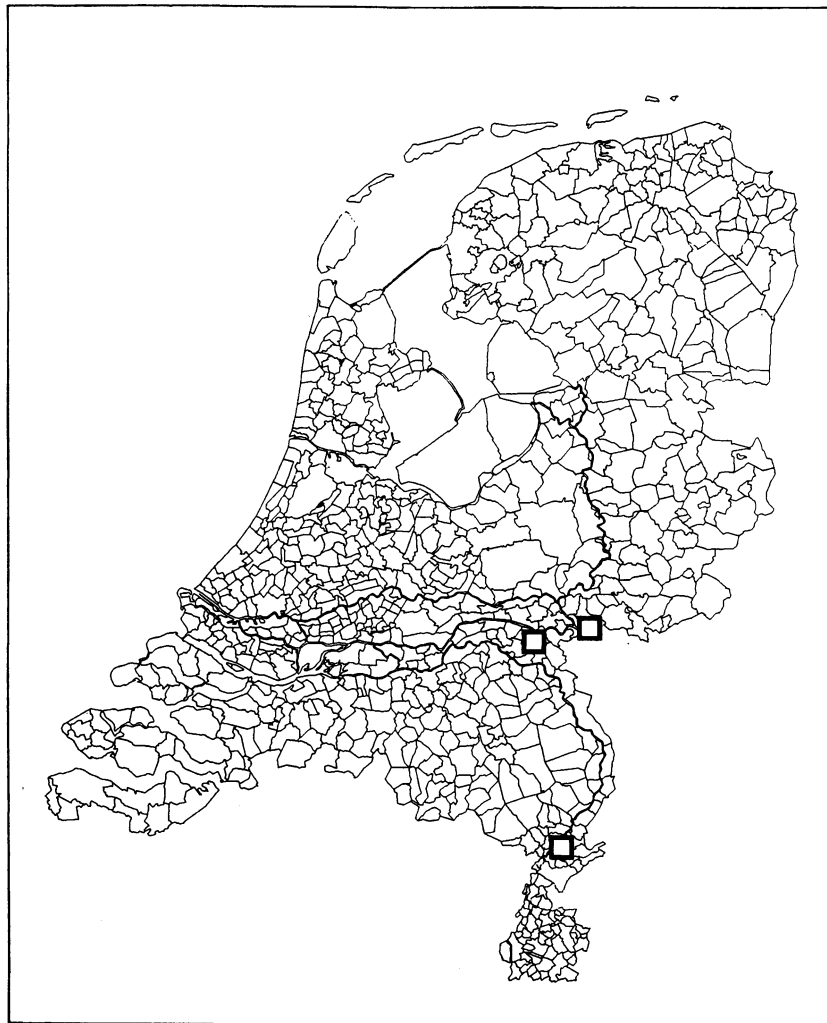


Fig. 20. Distribution of carps-tongue swords in the Netherlands (cf. fig. 19 and note 10). Copyright as for figure 2.

oped by the Geographical Institute and the Computer Centre of the University. The outline map of the Netherlands per *gemeente* (commune) here used as the base map was prepared and digitalized by the Geographical Institute. Each *gemeente* is assigned a number. To produce a distribution map, the user feeds in, together with the necessary parameters, a list of the relevant *gemeente* numbers together with, for each point, a code number defining the kind and size of symbol wanted. The map is then drawn and labelled by the computer with the help of the electrostatic plotter. Here the symbols have been redrawn by hand for clarity in reproduction. I am especially grateful to Dr. Jean-Claude Blanchet for his generous help with French connections, and with the collecting of material by myself and colleagues for the PBF volume now in preparation on the bronze axes of the Low Countries and the northern part of France.

2. *Tréboul* spearheads in the Netherlands (cf. ngs 1-2):

NL Limburg: (1) Smakter Spurkt, gem. Venray: Mus. Venray, no number; (2) Grathem: private; (3) Roermond, R. Maas: Mus. Leiden, 1 1971.11.3; ex coll. van der Pijl.

North Brabant: (4) between Cuyk and St. Agatha, R. Maas: Mus. Leiden, k 1949.9.1; dealer's provenance.

Overijssel: (5) Witharen, Gem. Ommen: Mus. Enschede, 392.

Drenthe: (6) Nieuw-Weerdinge, Gem. Emmen: Mus. Leiden, c 1926.12.1; peat find.

An example from Kessel NL Limburg, cited by Briard (1965: p. 106) and after him by Desittere and O'Connor, is unknown to me.

For Belgium and for France outside the Armorican area, O'Connor's Map 11 shows one Tréboul spearhead from near the mouth of the Seine, one in Nord (Aubigny-aubas), one from the Schelde, and one from the Belgian Maas area (Tongeren).

Witharen (above, No. 5) is close to the find-spot of the Ommerschans hoard, and if one accepts the Tréboul-phase dating of the importation of the Ommerschans sword (as apart from the date of deposition) one could reasonably suppose that the two objects were imported together.

This list supersedes, for the Netherlands, those of Desittere (1976: p. 89 Liste I) and O'Connor (1980: p. 445 List 18, Map 11).

An earlier version of our map (fig. 2) was published by Butler & Sarfatij (1970-71: fig. 1a, p. 301) and shows also the St. Brandan and Plougrescant-type swords.

3. *Stopridge* axes of type *Plaisir* (fig. 3):

South Holland: (1) Wassenaar: Mus. Leiden, h 1908.12.1; (2 and 3) Voorhout: Mus. Leiden, h 1908.10.6 and 8; hoard,

with shield-pattern palstaves (including 'north Welsh' shield pattern), lugged chisel.

NL Limburg: (4) Maastricht, R. Maas: Mus. Nijmegen, 6.10.21.

French examples are illustrated by Coutil (1921); Sprockhoff (1941: Abb. 37); Mohen (1977: figs pp. 46-9); Blanchet (1984); Blanchet & Mordant (1987).

Stopridge axes in southern Britain are classified as 'flanged axes, Class II*' by Rowlands (1976: pp. 27 ff). How many of these would be comparable to the Plaisir type is unclear. No. 500A in Schmidt and Burgess 1981, from Southfield Farm, Everingham, E.R. Yorkshire, is a possible example; so is No. 521A also, but it is dubiously provenanced. See also their pp. 89-90, 'bar-stop axes (*Stegbeile*) and 119-125 for discussion of the chronological context.

4. *West European decorated palstaves in the Netherlands: Shield palstaves*!

South Holland! (several examples) Voorhout hoard: Mus. Leiden, h 1907.1.19; The Hague, Savornin Lohmanplein, The Hague: Mus. van het Onderwijs; The Hague, Loosduinen, sand pit 'Rusthoek': private coll.; Leimuiden: Mus. Leiden, h 1987.10.1.

NL Limburg! Vlodrop: Mus. St. Odiliënberg, 91/1 (fig. 4; Bloemers, 1973: p. 21 afb. 4:8).

Drenthe! Norg: Mus. Assen, 1908.7.3.

No provenance: Legermuseum, Leiden, Daa-2.

Shield-and-rib palstave:

NL Limburg: Stevens weert (Bloemers, 1973: p. 21 Afb. 4:7).

Trident palstaves:

Gelderland! between Wijchen & Nijmegen: Mus. Nijmegen, GNAC 23.

No provenance: Mus. Nijmegen, GNAC 3.

5. *Spearheads with flame-shaped blade in the Netherlands* (figs 5-8):

NL Limburg! (1) Kessel, gem. Kessel, R. Maas: Mus. Leiden, 1 1931.2.12, ex coll. Gildemeester; (2) Swartbroek, gem. Weert: Mus. Asselt, 88; (3) Vilt, Gem. Berg en Terblijt, in hoard: Mus. Maastricht and Brussels.

Gelderland! (4) Winseling, gem. Nijmegen, R. Waal: Mus. Nijmegen, GNAC 32; (5) Nijmegen: Mus. Arnhem, BH 128; (6) Nijmegen: Mus. Leiden, e 93.10.49, dealer's provenance; (7) Millingen, Mus. Nijmegen, 10.1951.6; dealer's provenance; (8) Huissen: Mus. Arnhem, BH 129; (9) Heerde, 'de Dellen', in hoard: Mus. Arnhem, GAS 1957.7.3.

Drenthe: (10) no exact provenance: Mus. Assen, 1954.3.4.

South Holland: (11) Ruigenhoek, gem. Noordwijkerhout: Mus. Leiden, h 1929.5.2.; ex coll. van der Wal.

There are two further specimens without exact provenance: one (12) in a private collection completely unprovenanced, the other (13) 'from the Waal', without further details: Mus. Nijmegen, XXX.e.41.

For the Belgian and French finds, see O'Connor, 1980: p. 65 List 21, Map 44; also Warmenbol, 1987. There are minor concentrations in the Paris basin and in the Belgian Schelde basin, but only one example (Tongeren) in the Belgian Maas area.

6. *Looped spearheads in the Netherlands and the Tollebeek spearhead* (figs 9-11):

Looped spearheads with leaf-shaped blade and basal loops:

Drenthe! (1) Bargerosterveld, gem. Emmen: Mus. Assen, 1898.II.3.; (2) Exloërmond, gem. Odoorn: Mus. Assen, 1908.XII.1.

Groningen: (3) Blekslage, gem. Onstwedde: Mus. Groningen, 1918.V.I.

For France and Belgium, see O'Connor, 1980: List 20, Map 13 (shows nine examples in the Paris basin; two others in North France), but Blanchet (1984: pp. 175-178, 196) illustrates five examples in northern France (figs 89:4-5,

90:1, 91:1-2). See also Desittere, 1976: p. 89, fig. 1 (four examples in the Schelde region).

Looped spearheads with triangular blade and basal loops (= Schauer's type Enfield):

Of three examples in collections in the Netherlands, only one is exactly provenanced, the hitherto unpublished example from Bodegraven. An example which the present writer published as being probably from Nijmegen or area (Butler, 1963) has been subsequently shown, on the basis of a mineralogical study of the sand and gravel adhering to it, certainly not to have come from any of the river systems in the Netherlands (determination Prof. B. Boekschoten, then of the Geological Institute of the University of Groningen; now Free University, Amsterdam).

(1) no provenance: Mus. Nijmegen, XXX.e. 15 (modern import: see above);

South Holland: (2) Bodegraven: Mus. Leiden, h 1982.2.1.;

(3) no provenance: private collection.

In Belgium, four examples are known from the Schelde region; and there are also four examples in northern France (Desittere, 1976: fig. 1; Blanchet, 1984: pp. 176-177, figs 89:3, 90:2-4; cf. O'Connor, 1980: List 56, Map 27).

Looped spearheads with leaf-shaped blade and socket loops:

North Brabant! (1) 's-Hertogenbosch: Mus. 's-Hertogenbosch, 9499 (loops secondarily removed and replaced with peg-holes).

Drenthe! (2) Papenvoort, gem. Borger: Mus. Assen, 1923.II.1.

O'Connor (1980: p. 446 List 19, Map 12) lists and maps a number of examples in the Seine region, four examples in northern France, and one in the Schelde region in Belgium. Blanchet (1984, fig. 89: 1,2, 6) illustrates three examples in northern France (Compiègne, Armancourt, Amiens).

Pegged spearhead with slits and round holes in the blade:

Northeast Polder. Tollebeek: private possession; copy in Mus. Schokland.

Three similar examples from the Seine at or near Paris (Mohen, 1977: pp. 246,248,255, fig. 456); one from the Oise at Clairoux (Blanchet & Lambot, 1980: figs pp. 205-206); two from the Thames valley (Ehrenburg, 1977: fig. 23:17,20). Related smaller examples: possibly Champagne; Ovington, Northumberland.

7. *Rapiers and dirks of type Rosnoën in the Netherlands* (figs 12-13):

NL Limburg: (1) no exact provenance: Mus. Leiden, Gl. 70, ex coll. Guillon; (2) Ool, Gem. Herten. R. Maas: private; (3) gem. Limmen: study collection B.A.I. Groningen, 1954.VI. 1.; (5) Roermond: Mus. Maastricht, 233A.

Drenthe: (4) Exloërkijl, gem. Odoorn: Mus. Assen, 1923.V.2.

Desittere lists an example from Weurt, Gelderland (Nijmegen, No. 3). This specimen is unknown to me; the inventory number cited is in any case incorrect. A specimen he lists from Nijmegen ('Mus. Leiden, I 602') is also obscure.

For Picardy, see Blanchet, 1984: pp. 231-232, 233, fig. 123:2, 235, fig. 124, 238, 239, fig. 128. Noteworthy is the group of examples in the scrap metal hoard of Saint-Just-en-Chaussée on the Oise (Blanchet, 1984: pp. 226-228, figs 120-121). In Belgium an example is known from the R. Schelde at Wichelen (Desittere, 1976: p. 89). See also O'Connor, 1980: pp. 491-492 List 73, Map 32.

8. *Midwinged axes of type Grigny in Belgium and the Netherlands* (figs 14-15):

Neeroeteren: hoard, Belgian Limburg: Mariën, 1952: p. 217, fig. 199:1, 226, 480; Bauwen-Lesenne, 1968: p. 250; four axes found, at least one is of Kibbert's variety Altrip, the others are lost.

Ménil-Favai, nr. Hotton, Belgian Limburg: Mariën, 1952:

- p. 268, fig. 251 (photo), cave find. (Variety: Nauheim).
Matagne-la-Petite, Prov. Namur: Museum Brussels, B.890 (old no. 10396; An 34). (Variety: Swalmen).
Flémalle-Haute, Prov. Liège, River Meuse: Museum Liège, No. JB.27. (variety: Grächen).
Swalmen, NL Limburg: two hoards, in Tumulus 1 and 2 respectively; three axes: Butler, 1973: Abb. 7; 342 footnote 14; van der Waals & Lanting, 1974: pp. 68-72, figs 30-31 (two of variety Swalmen; one of variety Altrip).
Heijen near Gennep, NL Limburg: study coll. B.A.I. Groningen, 1963.X.1. (variety: Swalmen).
Wankum, Kr. Geldern: Museum Kevelaer, B 3. (variety: Altrip).
Elst, Gelderland (Betuwe): Museum Arnhem, B.H.123. (variety: Swalmen small).
No exact provenance: Museum Venlo, no number (variety: Swalmen).
No exact provenance: Museum Asselt, no number (variety: Swalmen).
- Looped Grigny axe*:
'South Limburg' NL: private collection.
 N.B. Some of the midwinged axes on the distribution map for the Netherlands which we published (Butler, 1973: Abb. 8) are not of type Grigny; but belong (like the winged axes from the Berg-en-Terblijt hoard) to the derivative varieties which Kibbert includes in his 'alphabetical' groups. Kibbert has however erroneously included all of them as Grigny axes on his map (1980: Taf. 84).
9. *Socketed axes of type Plainseau in the Netherlands* (figs 16-18):
NL Limburg: (1) Posterholt: Mus. Maastricht, 243; (2) Kessel: private; (3) Wessum, R. Maas: Bloemers, 1985: pp. 158, 157 Afb. 7:3; (4) Borgharen: Mus. Maastricht, 222.
North Brabant: (5) nr. Helmond: Mus. Leiden, B.C.1. from hoard?; (6) Breda: Mus. Breda, 432; (7) Hapert, gem. Hoogeloon: private.
Gelderland: (8) Nr. Nijmegen: Mus. Nijmegen, GNAC 10; (9) nr. Nijmegen: Mus. Arnhem, GAS 1958.9.30.
Overijssel: (10) Elzen, gem. Markelo: Mus. Zwolle, 121.
Drenthe: (11) Bargerosterveld, Gem. Emmen: Mus. Assen, 1897.10.10.
Provenance unknown: (12) Mus. Arnhem, GAS 323; (13) Mus. Asselt, no number.
10. *Carps-tongue swords in the Netherlands* (figs 19-20):
NL Limburg: (1) Ool, gem. Herten: private. Bloemers, 1973: pp. 17-19 afb. 4:3.
Gelderland: (2) Lobith, gem. Herwen en Aerdt, Bijlandse Waard: private; present location unknown: Vollgraff & Roes, 1942: pp. 283-285, fig. 1A (= present paper: fig. 19; cited by de Laet, 1974: p. 359 as from 'Herwen'); of Vénat variety (Cowen, 1971); (3) Nijmegen: Mus. Leiden, e 1906.1.4, via dealer.
 Not far upstream from Nijmegen is the find from Wesel, Kr. Rees, Nordrhein-Westfalen (Joachim, 1973: p. 259, fig. 2). O'Connor (1980: List 158, Map 58) lists examples from northwestern France and Belgium; including 8 finds from Picardy and four from the Belgian Schelde area; but none from the Belgian Maas region.
- BLANCHET, J.C. & C. MORDANT, 1987. Les premières haches à rebords et à butée dans le Bassin parisien et le nord de la France. In: *Les relations entre le continent et les îles britanniques à l'Age du Bronze. Actes du Colloque de Lille*. Amiens, pp. 89-118.
 BLOEMERS, J.H.F., 1973. Archeologische kroniek van Limburg over de jaren 1971-1972. *Publications de la Société Historique et Archéologique dans le Limbourg* 109, pp. 7-55.
 BRIARD, J., 1956. Le dépôt de fondeur de Tréboul en Douarnenez (Finistère). *Travaux du Laboratoire d'Anthropologie Rennes*, pp. 33-51.
 BRIARD, J., 1958a. Le dépôt de fondeur de Tréboul en Douarnenez (note complémentaire). *Travaux du Laboratoire d'Anthropologie Rennes*, pp. 35-36.
 BRIARD, J., 1958b. Le dépôt de Penavern en Rosnoën (Finistère). *Travaux du Laboratoire d'Anthropologie Rennes*, pp. 24-34.
 BRIARD, J., 1965. *Les dépôts bretons et l'Age du Bronze atlantique*. Rennes.
 BRIARD, J., 1987. Wessex et Armorique, une révision. In: *Les relations entre le continent et les îles britanniques à l'Age du Bronze. Actes du Colloque de Lille*. Amiens, pp. 77-87.
 BRIARD, J. & Y. ONNÉE, 1985. Le dépôt de moules de Pennavern à Hanvec, Finistère (Bronze moyen). In: J. Briard (ed.), *Paléoméallurgie de la France atlantique 2. Travaux du Laboratoire Anthropologique Rennes*, pp. 119-136.
 BRIARD, J. & G. VERRON, 1976. *Typologie des objets de l'Age du Bronze en France, IV: Haches (2) herminettes* (= Société Préhistorique Française). Paris.
 BRUNN, W.A. VON, 1968. *Mitteldeutsche Hortfunde der jüngeren Bronzezeit* (= Römisch-Germanische Forschungen 29). Berlin.
 BURGESS, C., 1987. Les rapports entre la France et la Grande-Bretagne pendant l'Age du Bronze. Problèmes de poterie et d'habitats. In: *Les relations entre le continent et les îles britanniques à l'Age du Bronze. Actes du Colloque de Lille*. Amiens, pp. 307-318.
 BURGESS, C. & A. MACSWEEN, 1984. *Au temps de Stonehenge*. Tournai.
 BURGESS, C. & P. NORTHOVER, in press. *The Bronze Age metalwork and metallurgy of Wales*.
 BUTLER, J.J., 1961. A looped spearhead converted to a pegged spearhead from 's-Hertogenbosch (North Brabant). *Helinium* 1, pp. 54-55.
 BUTLER, J.J., 1963. Bronze Age connections across the North Sea. *Palaeohistoria* 9, pp. 1-286.
 BUTLER, J.J., 1971. *Bronze Age grave groups and hoards from the Netherlands* (1) (= Inventaria Archaeologica: the Netherlands, 2, set NL 11-16). Bonn.
 BUTLER, J.J., 1973. Einheimische Bronzebeilproduktion im Niederrhein-Maasgebiet. *Palaeohistoria* 15, pp. 319-343.
 BUTLER, J.J., 1986. Drouwen: end of a 'Nordic' rainbow? *Palaeohistoria* 28, pp. 133-168.
 BUTLER, J.J., 1987. Drouwen: Het einde van de noordse regenboog?. *Nieuwe Drentse Volksalmanak* 104, pp. 103-150.
 BUTLER, J.J. & J.A. BAKKER, 1961. A forgotten Middle Bronze Age hoard with a Sicilian razor from Ommerschans (Overijssel). *Helinium* 1, pp. 193-210.
 BUTLER, J.J. & H. SARFATY, 1970-71. Another bronze ceremonial sword by the Plougrescant-Ommerschans smith. *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 20-21, pp. 301-309.
 COUTIL, L., 1921. l'Age du Bronze en Normandie, Eure, Seine Maritime, Orne, Calvados et Manche. In: *Comptes rendus de l'Association Française pour l'Avancement des Sciences* 45; *Congres à Rouen*. Rouen, pp. 791-812.
 COUTIL, L., 1931. Hache à talon de l'Age du Bronze de Preeswood (Shropshire) Angleterre. *Bulletin de la Société Préhistorique Française* 28, p. 266.
 COWEN, J.D., 1955. Eine Einführung in die Geschichte der bronzenen Griffzungenschwerter in Süddeutschland und den

8. REFERENCES

- BAUWENS-LESENNE, M., 1968. *Bibliografisch repertorium van de oudheidkundige vondsten in Limburg, behoudens Tongeren-Koninksem (vanaf de vroegste tijden tot de Noormannen)* (= Oudheidkundige Repertoria A:8). Brussel.
 BLANCHET J.C., 1984. *Les premiers métallurgistes en Picardie et dans le nord de la France* (= Mémoires Société Préhistorique Française 17). Paris.

- angrenzenden Gebieten. *Bericht der Römisch-Germanischen Kommission* 36, pp. 52-155.
- COWEN, J.D., 1971. A striking maritime distribution pattern. *Proceedings of the Prehistoric Society* 37 (II), pp. 154-166.
- DESITTERE, M., 1976. Autochtones et immigrants en Belgique et dans le sud des Pays-Bas au Bronze final. In: S.J. de Laet (ed.), *Acculturation and continuity in Atlantic Europe mainly during the Neolithic period and the Bronze Age* (= *Dissertationes Archaeologicae Gandenses* 16). Brugge, pp. 77-94.
- EDEINE, B., 1961. De quelques objets de l'Âge du Bronze, inédits ou peu connus, trouvés dans le département de Calvados. *Bulletin de la Société Préhistorique Française* 58, pp. 676-692.
- ELZINGA, G., 1957-58. Een bronsdepot op de Veluwe in de gemeente Heerde, Gelderland. *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 8, pp. 11-25.
- GAUCHER, G., 1981. *Sites et cultures de l'Âge de Bronze dans le Bassin parisien* (= *Supplément Gallia Préhistoire* 15). Paris.
- GAUCHER, G. & J.-P. MOHEN, 1974. *L'Âge du Bronze dans le nord de la France* (= *Spécial no. du Bulletin de la Société de Préhistoire du Nord*). Amiens.
- GAUCHER, G. & Y. ROBERT, 1967. Les dépôts de bronze de Cannes-Ecluse (Seine-et-Marne). *Gallia Préhistoire* 10, pp. 169-223.
- JACOB-FRIESEN, G., 1967. *Bronzezeitliche Lanzenspitzen Nord-deutschlands und Skandinaviens*, I-II (= *Veröffentlichungen der urgeschichtlichen Sammlungen des Landesmuseums zu Hannover* 17). Hildesheim.
- JOACHIM, H.-E., 1973. Neue Metallfunde der Bronze- und Urnenfelderzeit vom Niederrhein. *Bonner Jahrbücher* 173, pp. 257-266.
- JOCKENHÖVEL, A., 1980. *Die Rasiermesser in Westeuropa* (= *Prähistorische Bronzefunde Europas* VIII:3). München.
- KIBBERT, K., 1980. *Die Äxte und Beile im mittleren West-deutschland I* (= *Prähistorische Bronzefunde* IX: 10). München.
- KIBBERT, K., 1984. *Die Äxte und Beile im mittleren West-deutschland II* (= *Prähistorische Bronzefunde Europas* IX: 13). München.
- KOOI, P.B., 1979. *Pre-Roman urnfields in the north of the Netherlands*. Groningen.
- LANTING, J.N. & J.D. VAN DER WAALS, 1974. Oudheidkundig onderzoek bij Swalmen I. Praehistorie. Opgravingen in de jaren 1936-38 en 1968-73. *Oudheidkundige Mededelingen van het Rijksmuseum van Oudheden te Leiden* 55, pp. 1-111.
- MILLOTTE, J.-P., G. CORDIER & P. ABAUZIT, 1968. Essai de typologie protohistorique: les haches à ailerons médians. *Revue Archéologique de l'Est et du Centre-Est* 19, pp. 7-67.
- MOHEN, J.-P., 1977. *L'Âge du Bronze dans la région de Paris*. Paris.
- MUCKELROY, K., 1981. Middle Bronze Age trade between Britain and Europe: a maritime perspective. *Proceedings of the Prehistoric Society* 47, pp. 275-297.
- NEEDHAM, S. & M. DEAN, La cargaison de Langdon Bay à Douvres (Grande-Bretagne). La signification pour les échanges à travers la Manche. In: *Les relations entre le continent et les îles britanniques à l'Âge du Bronze. Actes du Colloque de Lille*. Amiens, pp. 119-124.
- O'CONNOR, B., 1980. *Cross-channel relations in the later Bronze Age* (= *BAR Intern, series* 91). Oxford.
- RAVESCHOT, P., 1973. Bronzen vleugel- en hulsbijlen uit de bronstijd en de vroege ijzertijd in België, I-II. (Unpublished licentiaatsverhandeling Rijksuniversiteit Ghent).
- ROWLANDS, M., 1976. *The organisation of Middle Bronze Age metalworking*, I-II (= *BAR British series* 31). Oxford.
- SCHAUER, P., 1972. Ein westeuropäisches Bronzeschwert aus dem Main bei Frankfurt-Höchst. *Germania* 50, pp. 16-29.
- SCHMIDT, P.K. & C.B. BURGESS, 1981. *The axes of Scotland and northern England* (= *Prähistorische Bronzefunde Europas* IX:7). München.
- SPROCKHOFF, E., 1941. Niedersachsens Bedeutung für die Bronzezeit Westeuropas. *Bericht der Römisch-Germanischen Kommission* 31 (2), pp. 1-138.
- VERHAEGEN, J.A., 1984. *Prehistorie en de vroegste geschiedenis van West-Brabant* (= *Bijdragen tot de studie van het Brabantse Heem* 24). Waalre.
- VERRON, G., 1971. *Antiquités préhistoriques et protohistoriques du Musée départemental des Antiquités de la Seine-Maritime*. Rouen.
- VERRON, G., 1976. Les civilisations de l'Âge du Bronze en Normandie. In: J. Guilaine (ed.), *La Préhistoire Française, II. Les civilisations néolithiques et protohistoriques*. Paris, pp. 387-401.
- VERRON, G., 1985. Les activités métallurgiques en Normandie durant l'Âge du Bronze. In: J. Briard (ed.), *Paléométallurgie de la France atlantique* (2). *Travaux du Lab. A.P.P.Q.A. Rennes*, pp. 137-164.
- VERWERS, W.J.H., 1988. *Archeologische kroniek van Noord-Brabant 1983-1984* (= *Bijdragen tot de studie van het Brabantse Heem* 32). Waalre.
- VOLLGRAFF, C.W. & A. ROES, 1942. Nieuwe oudheidkundige vondsten uit Lobith. *Mededelingen der Ned. Akad. van Wetenschappen, Afdeling Letterkunde*, N.S. 5, no. 6, pp. 1-44.
- WARMENBOL, E., 1986. Brons- en ijzertijd te Antwerpen VII: Speer op het spoor. *Bulletin van de Antwerpse Vereniging voor Bodem- en Grotonderzoek* 6, pp. 1-6.
- WARMENBOL, E., 1987. Deux dépôts de haches à douille découvertes en province d'Antwerpen. La diffusion de la culture du Plainseau en Belgique. In: *Les relations entre le continent et les îles britanniques à l'Âge du Bronze. Actes du Colloque de Lille*. Amiens, pp. 133-149.
- WILLEMS, W. J.H., 1985. Archeologische kroniek van Limburg over 1984. *Publications de la Société Historique et Archéologique dans le Limbourg* 121, pp. 146-196.
- WORSFOLD, F.H., 1943. A report on the Late Bronze Age site excavated at Minnis Bay, Birchington, Kent, 1938-40. *Proceedings of the Prehistoric Society* 9, pp. 28-47.