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SACRIFICIAL LANDSCAPES

CULTURAL BIOGRAPHIES OF PERSONS, OBJECTS AND 'NATURAL' PLACES
IN THE BRONZE AGE OF THE SOUTHERN NETHERLANDS, C. 2300-600 BC

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Non multo post in Cantabriae lacum fulmen decidit repertaeque sunt duodecim secures, haud ambiguum summae imperii signum.

(Suetonius, book VII: Galba, Otho, Vitellius)

Und dast Sterben, dieses Nichtmehrfassen
Jenes Grunds, auf dem wir täglich stehn,
Seinem ängstlichen Sich-Niederlassen -:

In die Wasser, die ihn sanft empfangen
Und die sich, wie glücklich und vergangen,
Unter ihm zurückziehn, Flut um Flut

(R.M. Rilke 'der Schwan')

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7 Middle Bronze Age B

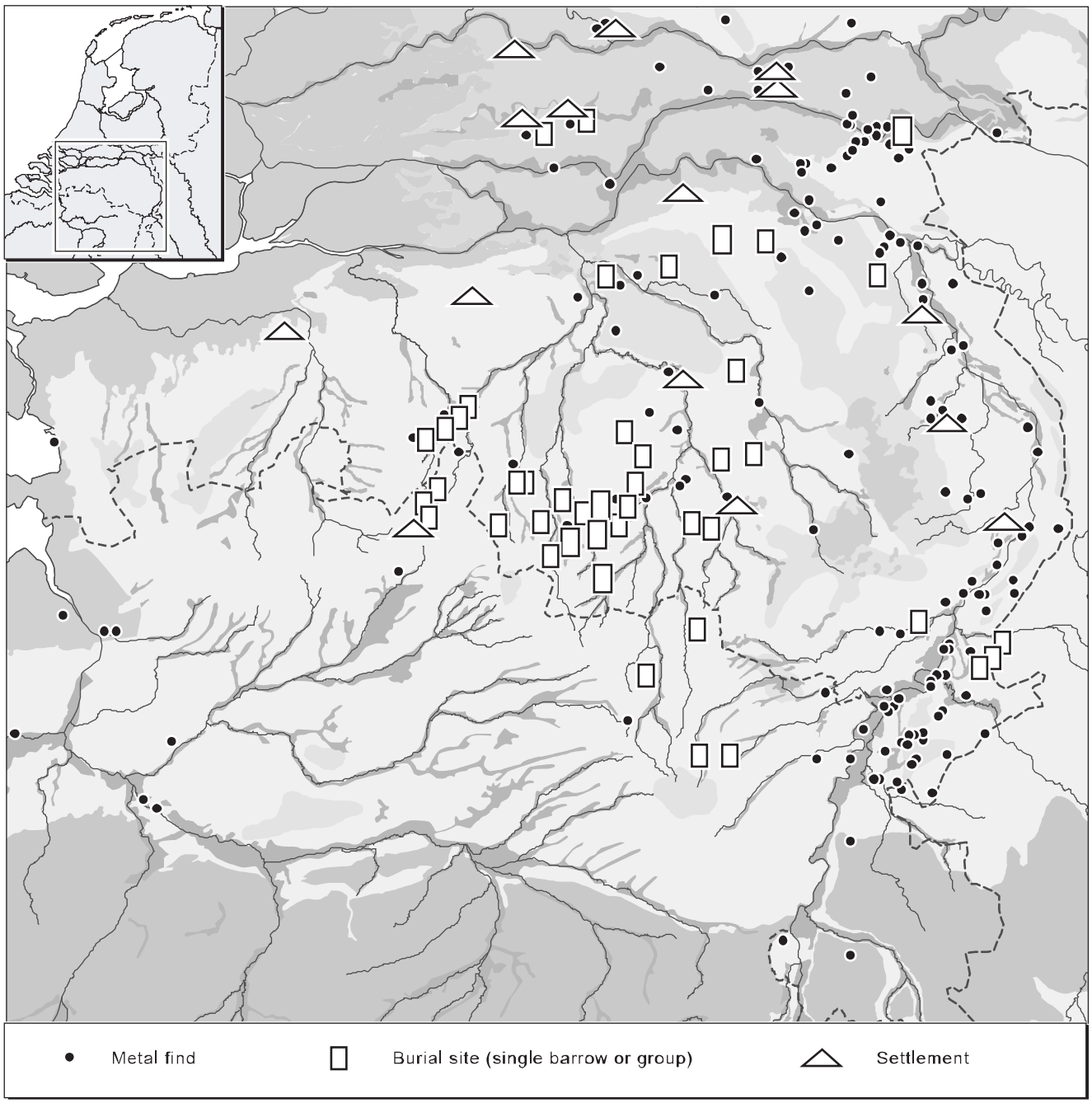

Figure 7.1 The distribution of metalwork finds of the MBA B in relation to the distribution of burial and settlement sites.

7.1 Introduction

The later part of the Middle Bronze Age (1500-1050 BC) signals a significant rise in the number of archaeological sites. This does not only apply to data from settlements and barrows, but to bronze finds as well. For almost every locality in the region bronze finds are known (fig. 7.1). Apart from hundreds of single finds, these also include a number of multiple-object hoards.

The concept of Middle Bronze Age B as a chronological unit is not very useful for dealing with chronological developments in bronze typology, even less so than in the preceding period. The dating ranges of most types cross the chronological boundaries. A well-recognizable sub-phase in the Middle Bronze Age B that only seems to be meaningful for metalwork is the French *Bronze final I*, to which a number of French imports are dated (fig. 7.2; fig. 1.4).

For the present discussion, the Middle Bronze Age B is important because new bronze objects make their appearance (sickles), whereas others seem to have been deposited in some numbers for the first time (ornaments). It is of great significance that the first decisive evidence for bronze production in the southern Netherlands dates from this period.

After a brief introduction to the general developments in society and landscape during this period (section 7.2), and some remarks on the available data (7.3.), the different object categories will be discussed (7.4 to 7.8). This will be followed by an interpretation of the evidence on metalworking activities. Next, we shall assess the place metalwork had among contemporary material culture (7.10). This is followed by sections which chart the patterns in the generalized biographies of metalwork items for each stage in their life-path: production (7.11), circulation (7.12) and deposition (7.13).

7.2 Society and landscape during the Middle Bronze Age B

North-west Europe

In north-west Europe, the period from *c*. 1500 until 1200 BC is generally considered to have been a period of cultural integration and acculturation of wide areas in Europe. According to Kristiansen (1987, 33), international exchange networks had a range thousands of kilometres, 'transmitting ideological and cultural influences between the Mycenean area, Central Europe and Scandinavia'. In many of the non-metalliferous regions, the supply of bronze must have become so rich and regular as to allow the development of a substantial regional bronze production, often leading to objects displaying a distinct regional style. These include a wide variety of objects, including ones that were formerly made of other materials. There is evidence that bronze had become an inextricable element of local material culture, even in non-metalliferous regions, being used for the manufacture of tools, prestigious weapons, and socially significant ornaments as well. Having realized this, we may ask ourselves: did a similar development take place in the southern Netherlands as well?.

In many parts of Germany and – particularly – southern Scandinavia, the tradition of equipping warriors' graves with bronze swords as the most important item continues and becomes much more common even (Kristiansen 1997). During this period, however, high-status female identities also acquires significance, as can be seen from rich burials with a distinctive bronze ornament set (Wels-Weyrauch 1989).

The southern Netherlands

The Middle Bronze Age B is relatively rich in excavated settlement sites when compared with both the preceding and the succeeding period. House places are known both from the sandy part of the region and from the central river area (fig. 7.1; Theunissen 1999). It is argued that settlements were made up of no more than one or two long-houses existing at the same time (Roymans/Fokkens 1991). In general, we seem to be dealing here with fully agrarian, self-sufficient societies (Louwe Kooijmans 1998). There must have been a strong emphasis on cattle raising, which becomes evident from the byres present in the long-houses (Louwe Kooijmans 1998, 332). Fokkens (1999) argues that this emphasis should primarily be understood from the social role cattle had; adopting Roymans' terminology (1999) he speaks of a 'pastoral ideology'. There is no convincing evidence for specialization in food production, as argued for in other north-west European regions like Denmark (Kristiansen 1997, 287). Neither is there any evidence for settlement hierarchy, defensive structures or the existence of larger settlements (more than four contemporary houses (Roymans/Fokkens 1991). Settlements were typically 'unsettled': house locations seem to shift their locations once in a generation; re-use of the same farmyard hardly ever occurred (Gerritsen 2001; Schinkel 1998).

The practice of structuring the landscape with monumental barrows continues and actually seems to increase (Theunissen 1999, 72, 85; table 3.6 and 3.7). There is even evidence for a more pronounced ritual centred on barrows themselves, similar to the northern Netherlands (Lohof 1991, 270; Fontijn/Cuijpers 1998/1999, 62). More than before, barrows cluster in specific parts of the landscape, leading to the formation of true barrow landscapes (Fontijn/Cuijpers in press). In the formation of a structured, cultural landscape a further step had been taken.

7.3 Discussion of the available evidence

Although the number of finds of the Middle Bronze Age B is considerably larger than in the case of the preceding period (236 versus 86; table 7.1), the metalwork evidence

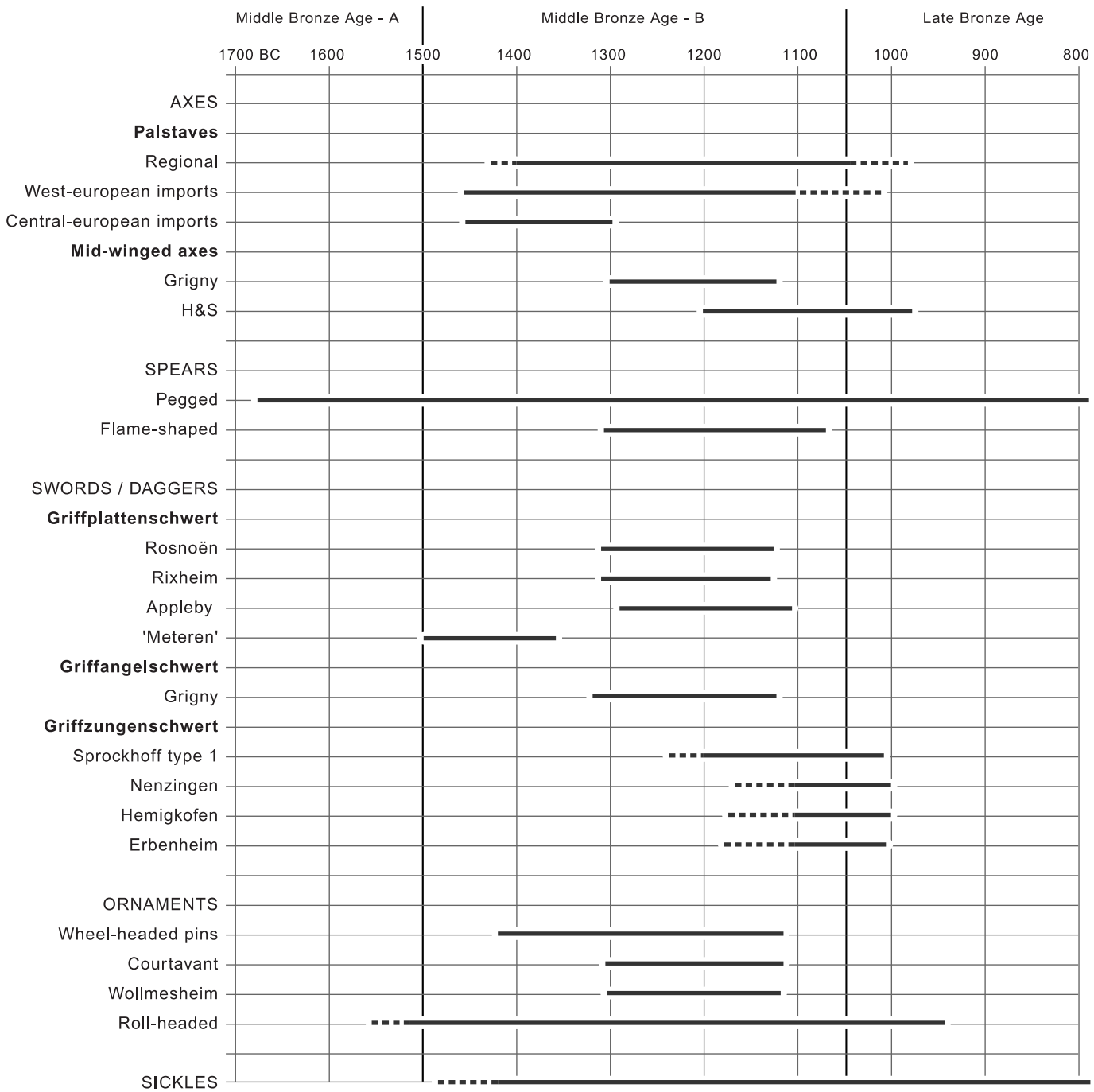

Figure 7.2 Dating ranges of the most important object types discussed in the text.

Type / Object type	Context										Totals
	Major river	Stream valley	Marsh	Wet	Wet hoard**	Dry	Burial	Settl.	Barrow Hoard	?	
Swords											
Rosnoën	4	-	3	-	1	-	-	-	-	2	10
Cloontia	-	1	-	-	-	-	-	-	-	-	1
Rixheim	1	-	-	-	-	-	-	-	-	-	1
Grigny	1	-	-	-	-	-	-	-	-	-	1
Regional	1	-	-	-	-	-	-	-	-	-	1
Other	3	-	-	-	-	-	1	-	-	-	4
Spears											
Bühl	-	-	-	-	-	-	-	-	1	-	1
Flame-shaped	9	-	-	-	-	-	-	-	-	5	14
British types	1	2	-	-	-	-	-	-	-	1	4
Pseudo-flame	3	-	-	-	1	-	-	-	-	-	4
Arrowhead	-	-	-	-	-	-	2	1	-	-	3
Daggers	3	-	-	1	1	-	-	1	-	3	9
Ornament											
Wollmesheim*	1	-	-	-	-	-	-	-	-	-	1
Disc-headed *	-	-	1	-	-	1	-	-	-	-	2
Courtavant *	1	-	-	-	-	-	-	-	-	-	1
Wheel-headed*	2	-	-	-	-	1	-	-	-	1	4
Roll-headed*	-	-	-	-	-	-	-	2	-	-	2
Bracelet	-	-	-	-	1	-	-	-	-	-	1
Spiral	-	-	-	-	-	-	-	4	-	-	4
Gold spiral	-	-	-	-	-	-	-	-	-	1	1
Others	4	-	-	-	-	-	2	4	-	-	10
Palstaves regional											
Sinuous/ trapeze	7	2	9	2	4	2	-	-	-	20	46
Midrib/ridge	9	2	5	2	-	-	-	-	-	13	31
Unknown	3	2	1	-	-	-	-	-	-	9	15
Palstave import											
W. European	8	1	2	-	1	-	-	-	-	6	18
C. European	-	-	-	-	-	-	2	-	-	1	3
North Dutch	-	-	-	1	-	-	-	-	-	3	4
Mid-winged axes											
Grigny	-	-	1	-	4	-	-	-	3	6	14
H & S	2	-	-	-	2	-	-	-	-	4	8
Unknown	-	-	1	-	-	1	-	-	-	1	3
Tools											
Awl	-	-	-	-	-	-	-	3	-	-	3
Sickle	-	-	-	-	-	-	-	6	2	-	8
Knife	-	-	-	-	-	-	-	-	-	1	1
Chisel	-	-	-	-	-	-	-	2	-	-	2
Smiths' tools											
Bronze mould	1	-	-	-	-	-	-	-	-	-	1
Clay mould	-	-	-	-	-	-	-	2	-	-	2
Totals	64	10	23	6	15	5	7	25	6	77	238

Table 7.1 Metalwork and moulds from the Middle Bronze Age B (single finds and objects from hoards). Included are the pseudo-flame shaped spearheads, a number of which dates from the Late Bronze Age. Ornaments 'other' are: tweezers, beads, possible pin, pins with uncertain dating from Nijmegen. * Pins; W. western; C: central ** wet hoards: Escharen, Kessel, Sevenum, Neeroeteren, Nijmegen-Heesche Poort; Berg en Terblijt (Late Bronze Age).

of the Middle Bronze Age B is not very different. Most are single finds, many were dredged from rivers, and hardly any were found in burials, in spite of the relatively high number of Middle Bronze Age B barrows excavated (Theunissen 1999). There are only a few hoards, all rather small: Sevenum, Swalmen-Hillenraad tumulus 1 and 2, the Holset barrow[1], Kessel (province of Dutch Limburg) and a probable hoard from Nijmegen-Heesche Poort (appendix 1). All finds except one (a gold ornament from Susteren) are bronze items. A special feature of the Middle Bronze Age B is that a number of bronzes was found on settlement sites (appendix 9). This does not automatically imply that bronze deposition on settlements was typical for the Middle Bronze Age B alone: rather, there are not many settlement sites that can be dated to either the Middle Bronze Age A or the Late Bronze Age. Another special feature is that this is the first period for which we have some evidence of metalworking tools and probably even bronze production sites (appendix 8).

7.4 Palstaves and mid-winged axes

As before, axes are the most common object known (142). They can be divided into palstaves, a further development of stopridge axes, and mid-winged axes. The former are defined here as axes with a stopridge where the septum below the stopridge is distinctively thicker than the septum above it. The mid-winged axes represent quite a different way of connecting the axe to a shaft, that is characteristic, however, for central European axes. Winged axes are known in the Netherlands only since the later part of the Middle Bronze Age B (the Grigny axes; Butler/Steegstra 1999/2000). Palstaves are by far the most frequent type. The earliest examples are imports (fig. 7.3), but later on regional products dominate. The imports are mainly from west European regions. Palstave imports from Nordic regions are well represented on the Dutch coast and north of the Rhine (Butler/Steegstra 1997/1998, 168-79). They are conspicuously absent, however, from the study region.

Independent dating evidence is very scarce for the Dutch and Belgian palstaves, but there are indications that in the southern Netherlands palstaves, both regional and imported ones, occurred until somewhere in the Late Bronze Age (see the discussion in Butler/Steegstra 1997/1998, 268-9). As the transitional and late palstaves typical for the Late Bronze Age in Britain and France are almost non-existent in the Netherlands, as imports as well as in local imitations, Butler and Steegstra (1997/1998, 268-9) argue that palstaves must have become very rare by then. So it can be assumed that in the southern Netherlands palstaves are primarily a feature of the Middle Bronze Age B (fig. 7.2).

7.4.1 Imported palstaves

West European imports

A number of palstaves have been found that were probably all imported from north-west France or Britain (listed in appendix 2.5 ; for their spatial distribution see fig. 7.3). Most are dated to the French *Bronze moyen II* phase or the British Taunton phase (‘primary shield palstaves of ‘non-British type’ (fig. 7.4); type Wantage, type Stibbard, type Normand, and palstaves with midrib and side-flanges (Butler/Steegstra 1997/1998, 185-93).The Rosnoën axes seem to have had a much longer dating range, possibly extending from *Bronze final I* into the Late Bronze Age (*Bronze final II* or even *IIIa*, see the discussion in Butler/Steegstra 1997/1998, 195). The looped axe from Zaltbommel, very similar to British ‘transitional’ palstaves, is among the few examples of a type dated exclusively to the Late Bronze Age (Schmidt/Burgess 1981, 131; Butler/Steegstra 1997/1998, 197). The Portrieux axe seems to have an extremely long dating range and our find cannot be more accurately dated than Middle Bronze Age B to Late Bronze Age (cf. Briard 1965, 109-18).
A notable feature of a number of types is that they are decorated.

For most types discussed under this heading, particularly the decorated ones, it is reasonable to suggest that they were imported from ‘western Europe’, taken to imply north-west France or southern Britain (personal comment J. Butler). A differentiation for a British or French origin is not always possible to make, but shield palstaves with arches on their side seem to be unknown from Britain, and must be French imports (the ‘non-British’ shield palstaves; O’Connor 1980, 431-2). There are indications that this life of long-distance exchange was in itself significant. The Asselt palstave was never sharpened and deposited in blunt, unworked condition. The same seems to have been the case with the Stibbard axe from Eerselen, found in a swamp. The Rosnoën axe that possibly came from a hoard, Nijmegen-Heesche Poort, was already broken when deposited. The two regional axes with which it was claimed to have been deposited, were intact, however. Thus, some axes seem to have gained significance by their exchange history only. In most cases, however, the axes had been used. From their find context it can be deduced that the majority comes from watery places.

Central European imports

There are only two finds of imported palstaves with a very different place of origin. They are attributed to the Niedermockstadt type, Var. Reckerode, as defined by Kibbert (1980, 232-6). Only one (from Vught) was found in the study region. The other one (Doorwerth) comes from a barrow situated directly north of the river Rhine, and thus properly speaking outside the study area (fig. 7.3; appendix 2.5).

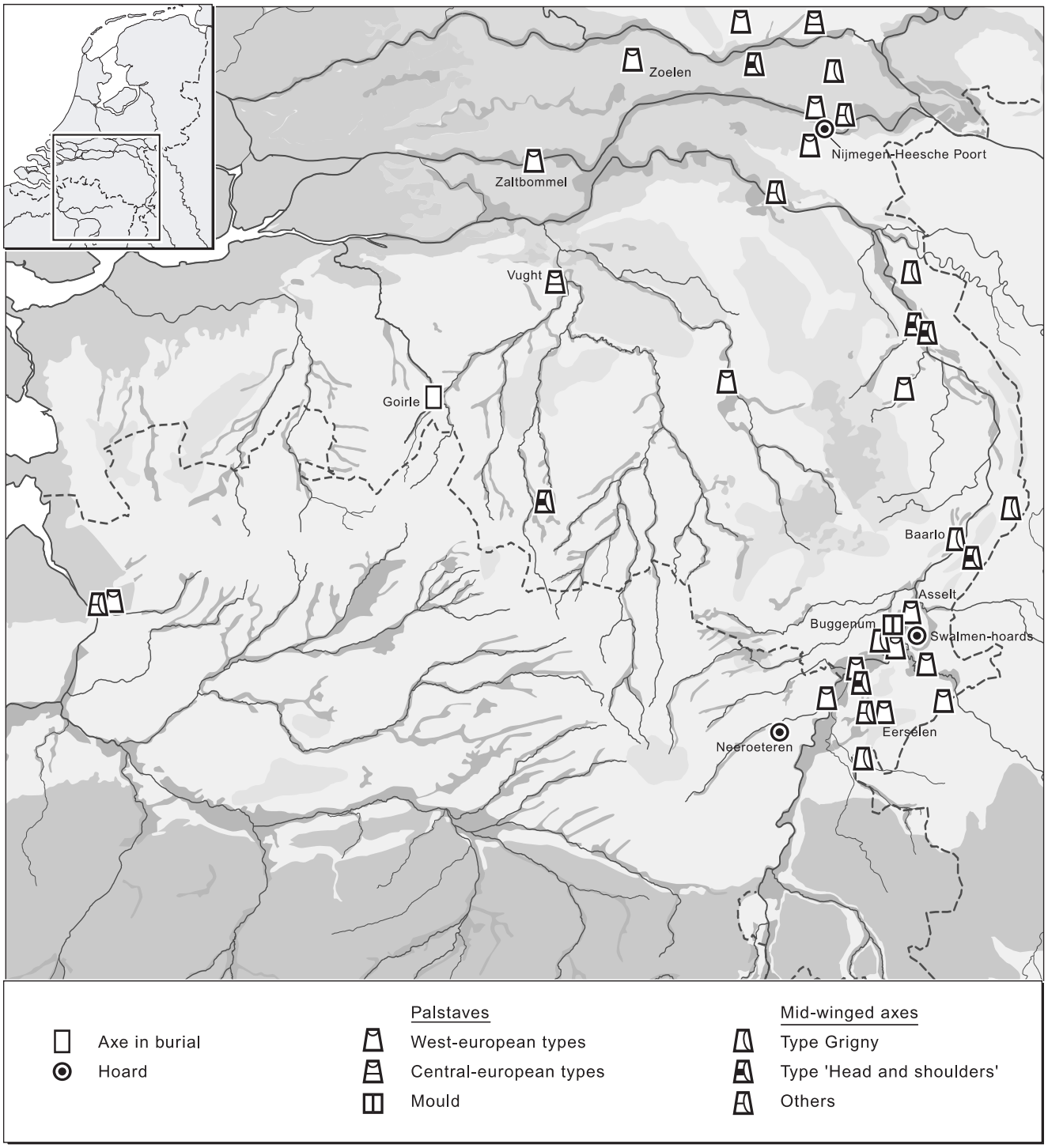

Figure 7.3 The distribution of imported axes and a mould of probable non-local origin.

Figure 7.4 West European primary shield palstave dredged from the river Meuse near Wessem (l. 15.5 cm).

Visually, both are very different from the west European palstaves described above and from the regional ones. There are also considerable differences between the axes themselves. The Vught specimen has a ribbed ornament, absent on the Doorwerth axe. The latter has side flanges marking an arch-shaped depression on the face. They date predominantly to the *mittlere Hügelgräberzeit* allowing for some earlier and later datings (Kibbert 1980, 234-5), which is more or less contemporary with the 15th and possibly 14th century BC. Both are interpreted as imports from the central European regions (Butler/Steegstra 1997/1998, 199-200). In Germany (particularly in the Fulda-Werra region in Hessen) they are predominantly found in weapon graves. For that reason, Kibbert interprets them as battle axes in the first place. The Doorwerth axe was found in the centre of a barrow that was later (in 1924) excavated. It is not certain that it came from the central grave, but it seems quite likely. In this barrow, unpublished so far, some (secondary?) grave pits were found, as well as the traces of a ring-ditch. Remarkable is the find of large charcoal deposits (the remains of a funeral pyre in situ?), a feature seldom found underneath barrows in this region. Whether the axe was originally deposited in a central or secondary grave, or just isolated in the mound, as a place of deposition, this is as exceptional as the axe type itself.

Unfortunately, even less is known about the Vught find. Its patina suggests that it comes from a wet location. In the area around Vught, there must have been extensive marshes in the past. It is likely that the axe came from such a place.

7.4.2 Regional palstaves

The most numerous group of palstaves distinguished by Butler and Steegstra are their group IV-palstaves. In total, 81 of them are known from the southern Netherlands (appendix 2.6 and 2.7; fig. 7.5; 7.6; 7.7). In view of their clustering in the Netherlands (and in some cases in the adjacent part of Germany and Belgium) they are interpreted as palstaves made in the Netherlands themselves, an idea corroborated by the recent mould find from Oss. Butler's typology is extremely detailed. Ignoring this variety, I think the following subdivision is vital:

1. Types that are common both to the southern and to the northern Netherlands.
2. Those that are typical for the southern Netherlands only.
3. Imports from the northern Netherlands.

They will be described below, followed by a separate section dealing with the evidence on their use-life and deposition.

Palstave types common to the southern and the northern Netherlands

Plain (undecorated) palstaves with a 'more or less sinuous outline', have been found in some numbers both in the study area and in the northern Netherlands. They are subdivided into a variety with a very short blade, one with a relatively broad blade, and a looped variety of 'medium size' (Butler/Steegstra 1997/1998, 202-17). In the adjacent part of Germany (where they are described as of the *Var. Andernach* by Kibbert (1980, 248-50), such axes have been found in the area between the rivers Rhine and Weser. We are therefore dealing here with an axe type that was common to a wide regions. It is a palstave in its most simple form, almost without any characteristic that makes it visually recognizable as a typical product of a specific smith or group of people. As such, they may remind us of the Oldendorf axes (chapter 6). It is unclear whether such axes were produced in one region and exchanged from there, or whether they were produced in several places at a time (both in Germany, the northern and the southern Netherlands), probably in (clay) moulds modelled after imported objects.

Palstaves produced in the southern Netherlands

There are two types of palstaves of which it can be argued that they were produced in the study region itself. These are the plain palstaves with trapeze-shaped outline and those that have a small ornament: a midrib or mid-ridge.

Palstaves with trapeze-shaped outline. This type is defined as including not only those palstaves with a trapeze-shaped outline, but also those with a parallel-sided hafting part and trapeze-shaped blade outline (fig. 7.6; 7.7; appendix 2.7; Butler/Steegstra 1997/1998, 222-28). They are almost exclusively found in the southern Netherlands, and a few in the adjacent part of Germany. Like the plain palstaves with

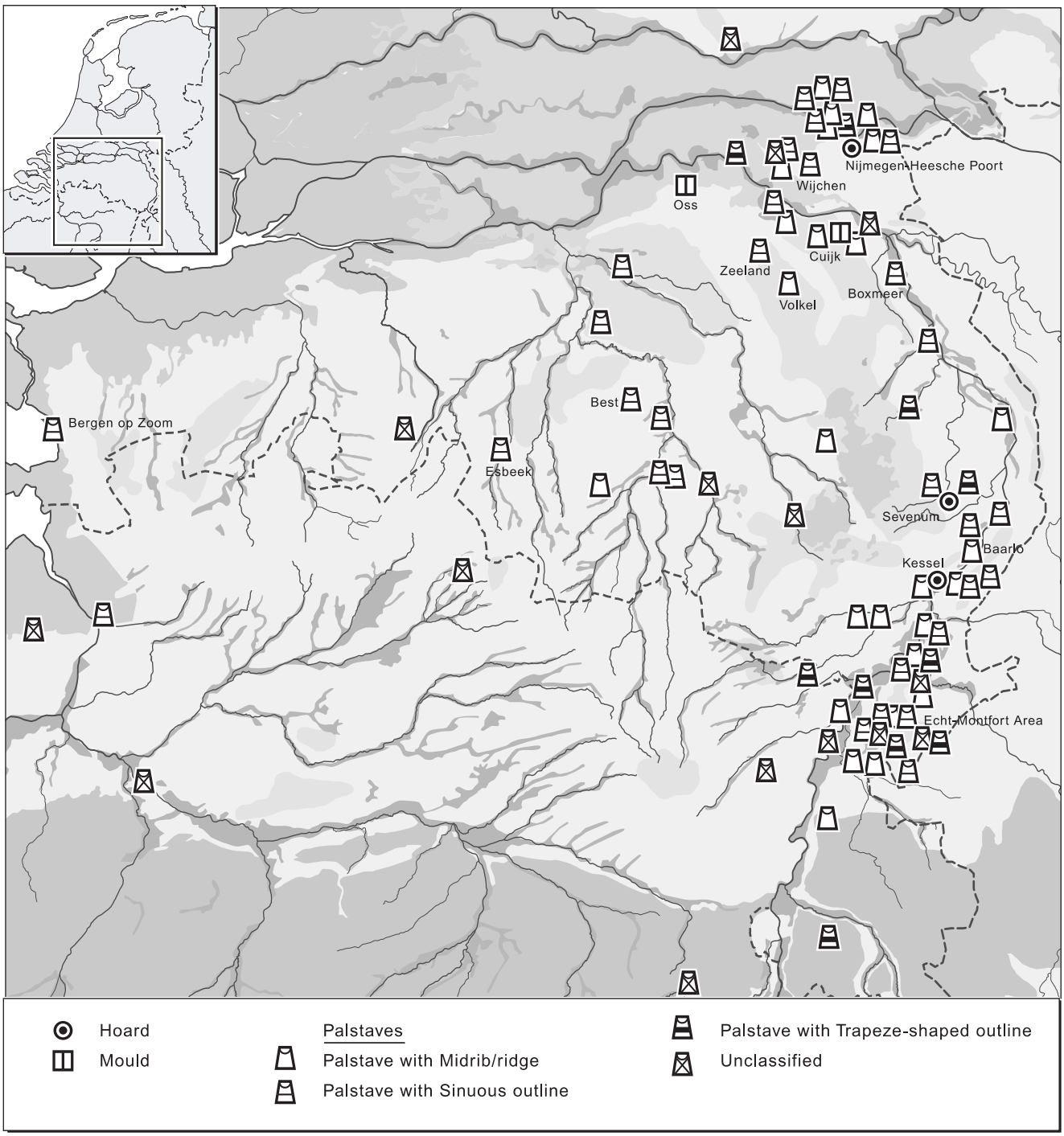

Figure 7.5 Distribution of regional axes and moulds for such axes and unclassified ones. North Dutch types are not mapped.

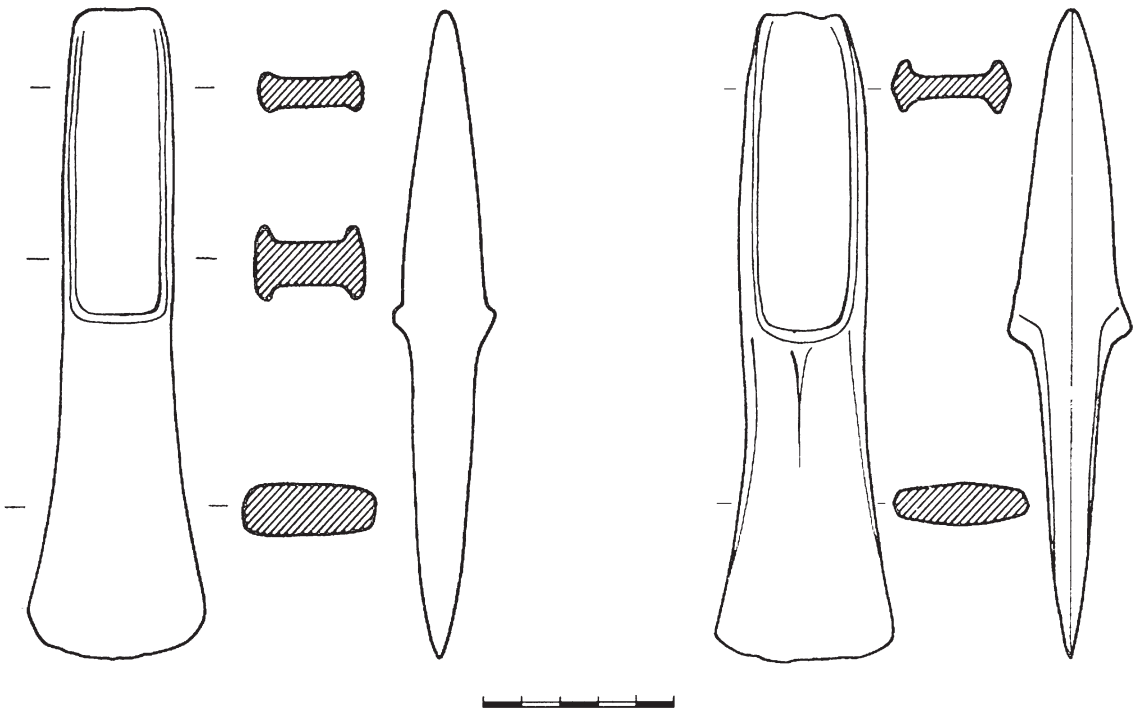

Figure 7.6 The Kessel hoard, consisting of two regional palstaves: one with a 'parallel-sided hafting and blade part with trapeze outline' (left) and one with a midridge (right). Drawing ROB.

sinuous outline, it is a very simple form, without clear display elements. The characteristic trapeze-shape does not seem to be a deliberate visual signifier of regional identity. Rather, a specific basic form of mould seems to have been used. It is likely that such moulds themselves circulated throughout the region, or that local smiths made new moulds on the basis of existing palstaves, thus copying the basic design. Palstaves that were formed in the clay mould of Oss had such a trapeze-shaped outline. The Oss form, however, also had cast flanges on the blade, something that is less often observed (see under 'northern imports')

Palstave with midrib or mid-ridge. The other type that is characteristic for the research region, are those with a midrib or mid-ridge (fig. 7.6). Some 31 examples are known from the study area, only a few north of the Rhine (appendix 2.6; Butler/Steegstra 1997/1998, 241-51). This distribution is taken as main evidence for their interpretation as regional products. The midrib can be blade-strengthening, but it is unlikely that this was the case with the finds described here, since there is only a relatively small rib/ridge. It seems to have been a decorative feature in the first place, subdivided into a number of varieties. The most frequent one has a narrow midrib/ridge and a sinuous outline. It can be looped and have a relatively small, medium-sized or wide blade. The midrib can – Butler's and Steegstra's terms – be more or less 'trumpet-shaped', or take the form of a triangular raised ornament below the stopridge. In some cases, a midrib was placed on palstaves with a trapeze-shaped body, but these are rare.

The midrib, trumpet and raised ornament have clearly been imitated from palstaves presumed to have been imported from west European regions. In some cases the objects come close to straightforward imitations, as in the case of the axe from 'Maas/Waal' and the one from the Kessel hoard (fig. 7.6). They look like a palstave of Normand type, but are nevertheless slightly different from those found in north-west France (Butler/Steegstra 1997/1998, 245).

Just like the trapeze-shaped axes, the midribbed ones also seem to have been much more frequently used in depositions in the south than in the north. It is therefore likely that this also relates to a production and distribution that was connected to the southern region. This is interesting, for the midribbed palstaves are derivatives from west European imports. These imports, however, are as frequent in the south as in the north. For some reason, the midrib decoration was picked up and locally imitated in the south, but not in the north. And this brings us to the following observation. Although the midribbed palstaves are just like the trapeze-shaped examples, simple forms, they are a form of decoration. Was this decoration significant to people in emphasizing

a particular origin, like a specific smith, a local group, a micro-region perhaps? It is not quite clear. It might just as well be that axes were produced in clay moulds that were modelled after existing ones, the similarities between axes being only an unintended and coincidental result of a particular regional axe distribution system. On the other hand, particularly when the visual qualities of the ornament are more pronounced (in the case of the trumpet decoration and the raised ornaments), it is clear that not one axe found comes from the same mould. Here it is clear that the prominence of such an ornament is not simply due to a mould-copying or mould-circulation system; the ornament was apparently deliberately added, and seen as an integral and necessary part of the palstave. Therefore, I want to suggest that – at least for those varieties – the ornament was deliberately attached, and in view of its absence on northern products, something which served to emphasize local or regional identity.

Imports from the northern Netherlands?

A small number of palstaves from the research region has an arch-shaped ornament on the sides. Such ornaments are uncommon in western Europe, but frequent in north European regions. They are also present on a number of palstaves that according to Butler and Steegstra must have been produced in the northern Netherlands (1997/1998, 257). They suggest the same for palstaves with a flanged blade part, but since the palstave form from the Oss mould has similar flanges, this now seems less likely. Palstave with flanged blade may therefore probably have been produced in the southern Netherlands as well.

Use-life and deposition of regional palstaves

Most axes show traces of an intensive use-life. Most are sharpened, and in some cases there is evidence of drastic resharpening (appendix 2.6 and 2.7). Some nine palstaves (e.g. Esbeek, Best) have edges that are blunted and battered before the axe was deposited. Exceptional is the case of the axe from Wijchen-Berendonck: this axe was broken in antiquity (appendix 2.7). The same holds for one from Putbroek, and one from an unknown context (appendix 2.8).

For 56 % of the finds the original depositional context could be inferred. Most are single finds, but three come from small hoards in wet places: Kessel and probably Nijmegen-Heesche Poort (axe-hoards), and Sevenum (axe-spear hoard). 96 % of the objects with known context are from a wet context. For less than half of the finds the precise deposition location could not be retraced. On the basis of their patina, it is clear that among these finds those from a wet location are also the most prominent (54 % have wet-context patina), but the patina of approximately 23 % of the finds without context points towards a long stay in oxidizing, and therefore probably dry, circumstances (cf. The discussion in chapter 4). In particular, this can be attributed to the palstaves found in Dutch Limburg. Although the predominance of wet deposition locations remains clear, the 'patina-only' finds indicate that we lack information on a number of finds from possibly dry contexts.

It seems that everywhere in the study region, palstaves were deliberately deposited, after an intensive use-life. Many of them were sharpened before deposition, a minority was deposited with blunt, damaged edges. Almost all palstaves, including the modern metal-detector finds, are single finds. Apparently they were usually not deposited together with other metal objects. The exceptions are an axe-hoard of two regional palstaves (Kessel; fig. 7.6) in or near a marsh at a terrace, and a probable association of two intact regional types with an imported Rosnoën palstave that was already broken before deposition in a marshy area near the river Waal (Nijmegen). The latter hoard implies that regional and imported axes were at least not separated in deposition, as seems to have been the rule in the Danish Late Bronze Age (Sørensen 1987). The Sevenum hoard (axe and large spear) seems to represent a deposition of an axe as a weapon (fig. 7.7). Although hoards are exceptional, we repeatedly see concentrations of (mainly regional) palstaves in small

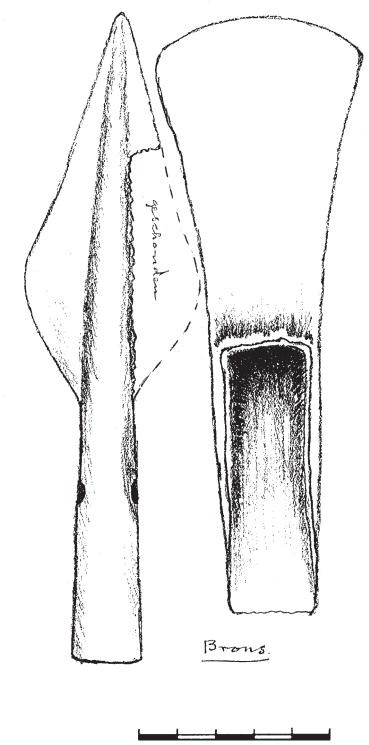

Figure 7.7 The Sevenum hoard. A spearhead (now lost) and a regional palstave with 'parallel-sided hafting and trapeze-shaped blade' (after a sketch in a letter of P.S. Everts to dr W. Goossens (Maastricht), April 14 1932).

confined areas (multiple-deposition zones). Examples are the marshes in the Montfort-Echt region, or the river terraces near Kessel, Baarlo and Kesseleik (fig. 14.1). It is noteworthy that a number of the not exactly provenanced finds comes from these same localities as well. Other places that saw several contemporary depositions are the river Meuse near Buggenum, and Herten-Roermond (fig. 14.1), and probably the river Waal near Nijmegen. In the province of Noord-Brabant, there is less evidence for such find concentrations.

The 'wet' locations conceal an enormous variety of localities. Some palstaves must have been deposited in the extensive peat bog of the Peel, being the oldest recorded traces of deposition here ('Volkel', 'Peel'; appendix 2.6 and 2.7). Others come from the river-terrace marshes in the Meuse valley, stream valleys, a natural source on the steep slope of an ice-pushed ridge (Beek near Nijmegen; appendix 2.7). Less is known about the finds from dry locations. The palstave from Boxmeer comes from the edge of a plateau, not from from the place where an excavation yielded the traces of Middle Bronze Age house plans (Van der Velde 1998; Hiddink 2000). Other dry locations are often situated in the immediate vicinity of marshes.

7.4.3 Mid-winged axes

In the last centuries of the Middle Bronze Age B, a new type of axe becomes relevant in the long-standing tradition of axe deposition in the southern Netherlands. This is the so-called mid-winged axe, an axe for which hafting is not secured by means of a septum, but by means of a pair of wings, that are situated approximately in the middle part of the body (fig. 7.8; appendix 2.9). Such axes are relatively rare when compared with the much more current palstaves (fig.7.3). They are all imported objects, that are almost exclusively found in the southern Netherlands (Butler/Steegstra 1999/2000). For the Middle Bronze Age, two types are relevant: mid-winged axes of type Grigny, and those of the so-called 'Head and shoulders' type. The dating of the latter extends into the first part of the Late Bronze Age.

Type Grigny

Following the definition of Kibbert (1984, 47) and Butler and Steegstra, Grigny axes have a slab-like body, in outline close to rectangular. Characteristic are the incurving wings, which are relatively short. The butt is usually rounded and has a U-shaped or crescentic notch. In total 14 of them are known from the study region. The length is between 18 and 21 cm. The short variety does not exceed 15.5 cm. The long variant is large, heavy and impressive. According to Butler and Steegstra (1999/2000, 135), these were primarily weapons. The short variant rather seems to have been designed as a tool in the first place, as attested by use traces.

Both Butler and Steegstra and Warmenbol (1989a) have argued that these Grigny axes all are imports from eastern France, dating chiefly to *Bronze final I*, possibly extending into *Bronze final II*. More or less contemporary axe imports from northern France are the Rosnoën palstaves and swords mentioned in section 7.4.1, but these are Atlantic types (north-west France). Butler (1987) sees the importation of the Grigny axes nevertheless as belonging to the same chronological horizon: a historical phase that saw a wave of French imports, mainly of martial objects.

The large Grigny axes are rather similar to each other, and visually very different from contemporary regional and imported axes (which are all palstaves). They have not been imitated in regional production either. Most axes have sharpened edges, but only the smaller version shows clear traces of being used (Venlo; appendix 2.9). This is most clear in the case of the axe from Baarlo (ibid.), which was broken in antiquity but re-used as a wedge. It indicates a long circulation time. The blunted edge of this axe is also patinated; it is one of the few examples in which the axe was not sharpened before deposition.

The 'otherness' of large Grigny axes also comes to the fore in the way in which they were deposited. There are three multiple-object hoards consisting of Grigny axes only. In view of the general rarity of multiple-object deposits in this area, this is in itself remarkable. It becomes all the more noteworthy since seven of the large Grigny axes come from such hoards. In Neeroeteren-Maaseik, at least four Grigny axes, very similar to each other, were found together in a marsh near a small stream (fig. 7.8). It is not improbable that the hoard consisted of even more objects originally (Warmenbol 1989a, 280).

The context of the other two hoards, the ones from Swalmen, is special. They are among the few depositions that were discovered during an excavation. These are two different hoards, one consisting of a Grigny axe and a large whetstone (tumulus I), the other of two similar Grigny axes. The three axes are very similar, although probably not from the same mould. Both hoards were deposited in the north-eastern part of two different, but adjacent, barrows that are part of a small barrow cluster of four or five burial mounds (Lanting/Van der Waals 1974, 68-72). Although they were found in a barrow, they were clearly not deposited together with human remains. Tumulus II is a much older barrow, with a central grave probably dating back to a late phase of the late Neolithic. In the Middle Bronze Age, the interment of an urn in the barrow shows that it was secondarily used as a grave. Therefore, at the moment of deposition the barrow into which the axes were placed was already very old. When Tumulus I was constructed is not clear, but here there are also secondary graves, one dated to the Middle Bronze Age, the other to the Early Iron Age. In both cases, similar axes

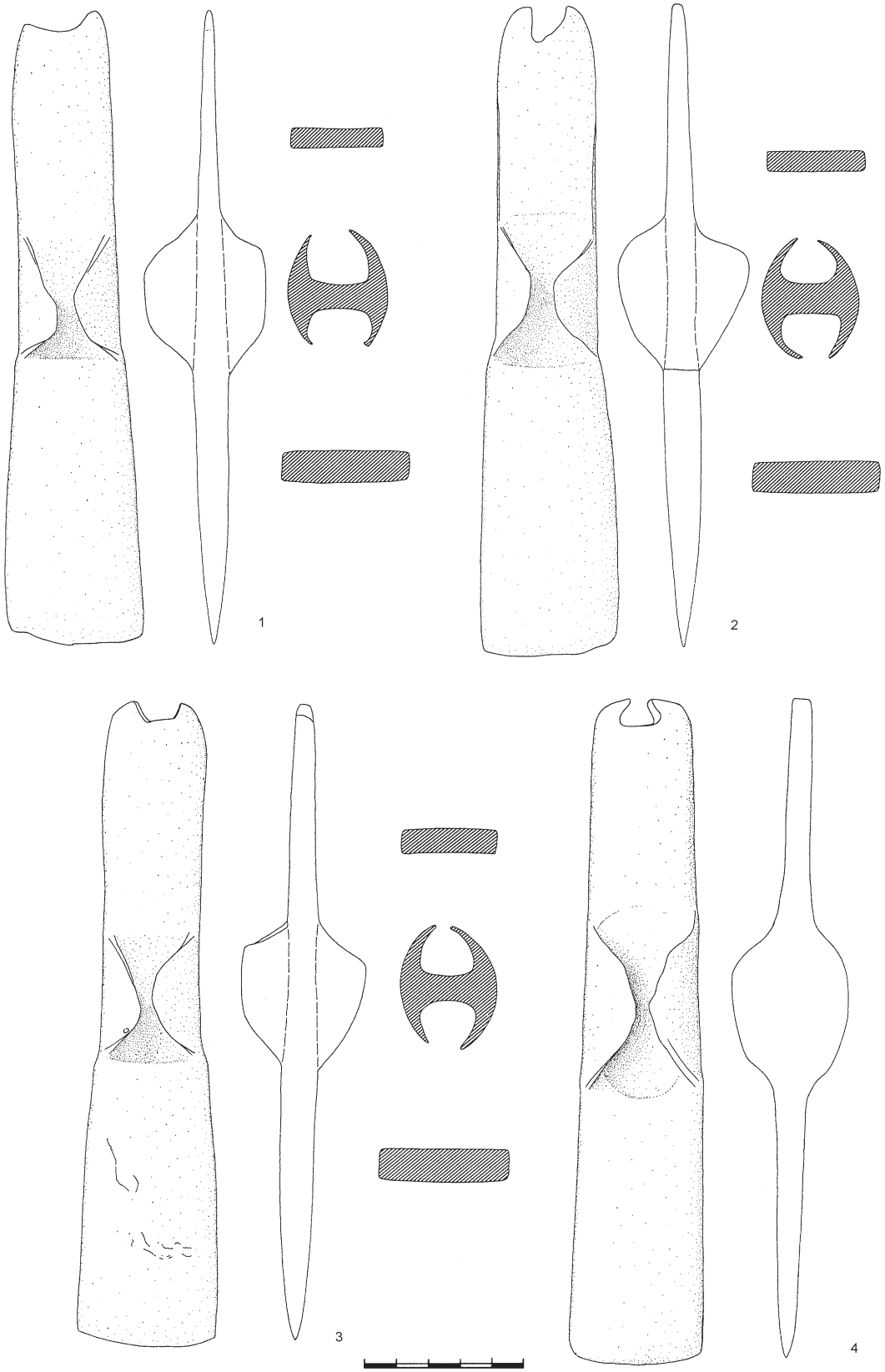

Figure 7.8 The Maaseik-Neeroeteren hoard, consisting of four mid-winged axes of type Grigny (after Warmenbol 1989a, fig. 1 and 2).

were placed in two different barrows, in each other's immediate vicinity. Both are not in direct association with a grave, but they may have been contemporary to the interment of an urn grave. In both cases, the depositions took place in a monument that already existed, in one case already for almost 1000 years. In view of the similar location and nature of the deposits (north-eastern side of the barrow, in each case two objects, in both hoards Grigny axes that are very similar to each other), it is likely that both depositions took place at the same time, or within a short time-span (some years, or within the same generation). The association between a Grigny axe and a whetstone is another curiosity, underscoring the uniqueness of the event: bronze axes and stone objects are never associated within a hoard. As a matter of fact, such whetstones are hardly known from settlement sites either.

Little is known about the deposition of the other Grigny axes.The re-used Baarlo fragment was probably deposited in a marshy area where more axes have been placed. The Venlo axe, too, comes from a wet location (appendix 2.9).

Mid-winged axes of the 'Head and Shoulders' type

Some words need to be said on another small group of mid-winged axes, dating somewhat later than the Grigny axes (*Bronze final II*). They are dated to the transition of the Middle to the Late Bronze Age and two figure in the Late Bronze Age hoard of Berg en Terblijt (chapter 8; fig. 8. 19). For convenience sake, they are all described in this chapter.

Butler and Steegstra have described them as of the 'Head and shoulders' type, based on their characteristic tripartite form: a head, separated by distinct shoulders from the wing part, which passes over into the blade part 'with little or no hip' (Butler/Steegstra 1999/2000, 136). A number of them comes from wet locations. These axes appear not to have been deposited in the same deviating manner as we saw for the Grigny axes, but more in line with contemporary axes (late palstaves and socketed regional axes).

7.4.4 The Goirle axe: the remarkable life-path of an old, much-travelled axe

An extraordinary find among the metalwork of this period is the axe found in the central grave of a barrow in Goirle, Tumulus VI, *De Vijfberg* (fig. 7.9; Van Giffen 1937, 33-9). Here, on a sand ridge bordering a stream valley, at least six barrows were constructed, more or less aligned (along a pathway?). The history of this cemetery probably started with the construction of a barrow with bank and ditch (*ringwalheuvel*, see chapter 6) in the Middle Bronze Age A. Following Theunissen (2001), this visually deviating barrow was a founder's grave. Tumulus VI is probably one of the youngest barrows (Verwers 1980, 33). It was constructed next to the *ringwalheuvel*. Tumulus VI is a multi-period

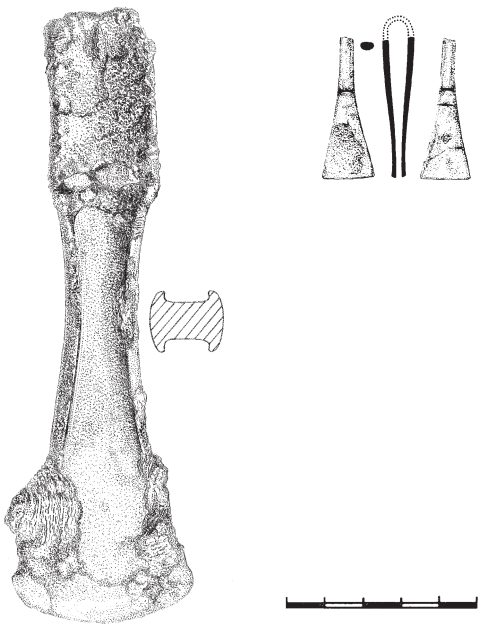

Figure 7.9 The axe and tweezers from Goirie, tumulus VI (scale 1:2, after Butler 1995/1996, fig. 22).

barrow. The primary grave, over which the sod-built mound was erected, must have been an inhumation grave in a (trunk tree?) coffin, oriented north-east-south-west, placed on the old surface. Around the mound, a multiple timber circle was built. In a later phase, a ring-ditch was dug around this circle, cutting through part of the mound. An urn, or part of it, with cremation remains was placed into this ditch. In view of the fact that the post circle is the primary peripheral marker of the barrow, it would date from the later part of the Middle Bronze Age (Butler 1995/1996, 199-201).

In the central coffin grave, an axe was placed on or next to the deceased's body (of which not a trace was left). Other objects found here are a pair of bronze tweezers, an incomplete small bronze ring, and some strips that were microscopically identified as being of bone (fig. 7.9; Verwers 1980). Not only the presence of bronze objects in the grave is rare, but also the fact that it was a coffin grave on the old surface. This way of interment is quite exceptional in the Middle Bronze Age B (Theunissen 1999). The axe, however, is even more remarkable; it is of a type that is not only totally unknown in the southern Netherlands, but in the adjacent regions as well.

The axe has an unflanged upper part, separated by a distinct angle from a concave-sided, firmly flanged lower part (Butler 1995/1996, 199). It has been interpreted as a (nick-flanged) Sögel axe by Verwers (1980, 33), but it is actually very different from such axes. Recently, Butler has argued that the Goirle axe is similar to a series of axes from

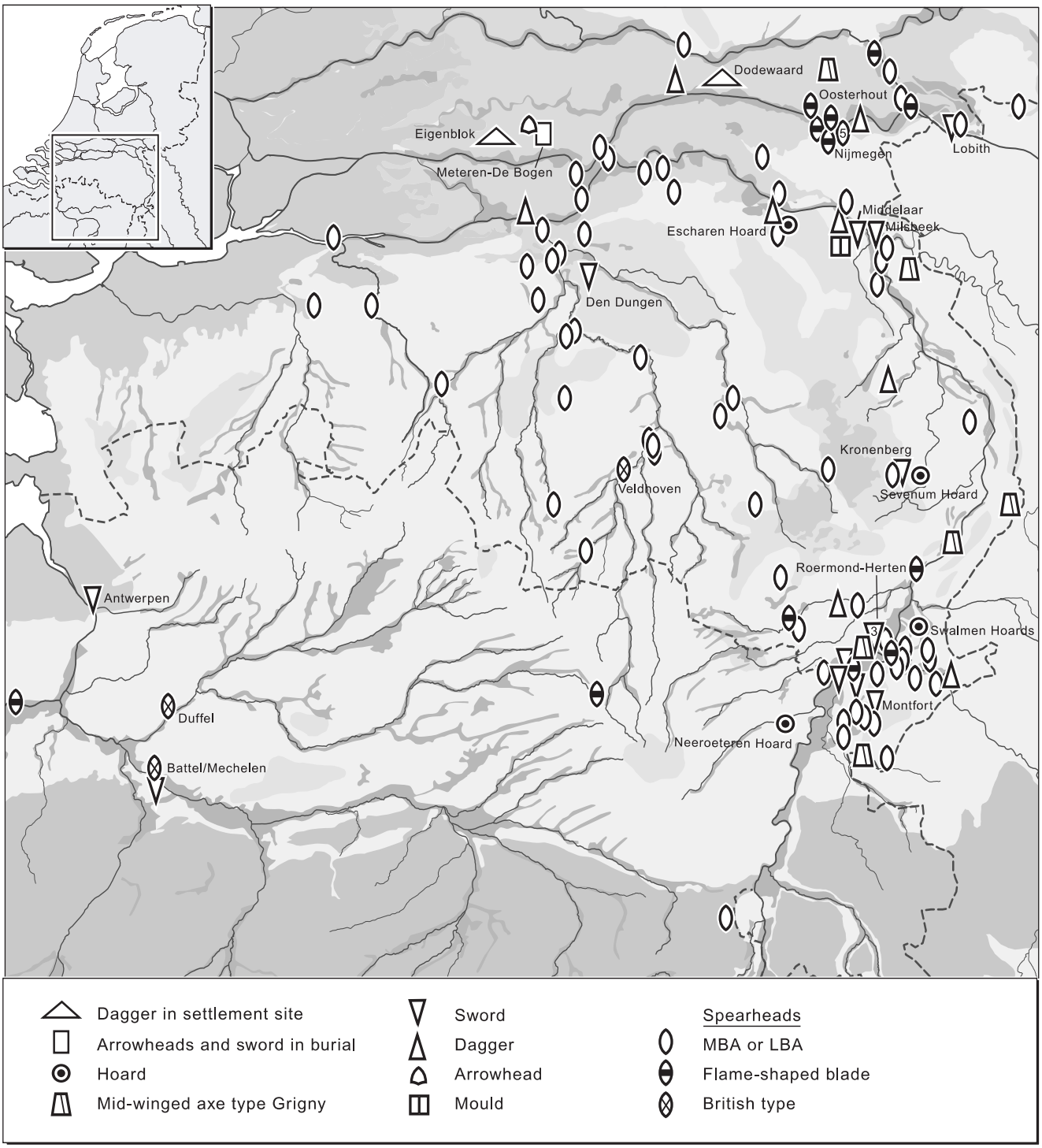

Figure 7.10 Distribution of MBA B swords, daggers, spearheads and battle axes.

(the eastern part) of central Europe (1995/1996, 199-200). The parallels found and the lack of any in adjacent regions, suggest that the axe was produced somewhere in the Hungarian plain or surroundings. If this is true, then the Goirle axe is one of the most striking examples for long-distance exchange that the southern Netherlands has ever provided during the Bronze Age. Since the design of the axe is so uncommon outside central European regions, and since the numerous axes of the adjacent German regions have been extensively studied (Kibbert 1980 and 1984), it is not very likely that one day evidence will turn up that such axes were made in German localities closer to home. Even then, the axe must have been exchanged over vast areas, and in form deviating from axes current in the southern Netherlands. Butler goes on to argue that this identification of the Goirle axe confronts us with a possible contradiction. A northern import of such an axe should be expected to fall somewhere in the Sögel-Wohlde phase. This, however, implies a contradiction between the primary peripheral post circles, that date the barrow to a later period, the Middle Bronze Age B (Butler 1995/1996, 201). It might therefore be ventured that the Goirle axe was already very old when it was finally deposited in this grave. Bearing in mind the enormous distances across which the axe must have circulated, this is not inconceivable. The axe was in a very bad condition when found: severely corroded and blistered. No further observations could be made about use or traces of wear. The bad condition itself, however, may well be in keeping with the supposed advanced age of the object. It is, for example, remarkable that the condition of the other bronze objects was not so bad as that of the axe.

7.4.5 Conclusion: axe biographies

Some general conclusion on the biographies of axes can now be drawn. There is evidence that palstaves were produced in the region, but importation of axes – palstaves and mid-winged ones – took place as well. In regional production, the expression of a regionally specific identity hardly seems to have been important. If ornamentation was practiced, it more or less copied the styles of imported Atlantic axes. Central-European or Nordic style affinities are unknown. At this stage, the continental winged axes do not seem to have influenced regional styles either, as they would do in the Late Bronze Age. The most current imports are Atlantic/ west European ones (north-west-France/ southern England), and it is with these axes that some regional products (those with midrib) are affiliated (particularly with French types). It seems that Atlantic imports and regional axes were convertible and part of the same exchange network. Unlike the situation in the Middle Bronze Age A, the north European link that was visible in the Oldendorf axes and the weapon types now seems to have been severed: Nordic imports are known in some numbers in the Netherlands, but only north of the river Rhine (Butler/Steegstra 1997/1998, 168-79; map 22).

Most axes that ended up in depositions show traces of a use-life (appendices 2.5-2.9). This is most conspicuous for the regional axes, but for most west European ones as well. In the latter case, there are indications that these imported axes were primarily valued for their role in long-distance exchange: a few were deposited unsharpened or broken. The small Grigny axes and the 'Head and Shoulders' type also seem to have led a regular use-life. The larger Grigny axes, however, were sometimes sharpened, but do not show similar traces of re-working of the blades. It is likely that these axes were primarily prestigious weapons. For the deviating central-European palstave and the Goirle axe, there is no data available.

The differences and similarities noted above seem to be reflected in selective depositions. The norm seems to be the deposition of regional palstaves in wet places. In addition, dry places near marshes were also favoured. There is a tendency towards clustering depositions in a specific zone in the landscape. The west-European palstaves were generally placed in similar locations, sometimes even associated with regional types (the Nijmegen hoard).

Rare central European axes that do not seem to have had a counterpart in existing material culture forms were deposited in burials of a special nature (Goirle, Doorwerth). They are exceptional with regard to the general habit of non-deposition of objects, and particularly metalwork, in burials (see also section 7.13.4). The earliest winged axes of type Grigny, equally deviant, also tend to occur in deviant depositional locations like paired in the mounds of burial monuments or in a large (type Grigny-only?) hoard. There is a slight overlap with deposition of regular palstaves (rivers and marshes), but this applies particularly to the smaller variety. The 'keeping apart' of larger and smaller Grigny axes might reflect a different use-life: as a prestigious weapon (large) or as a tool (small). The possible separate deposition of the earliest mid-winged axes changed with the later ones (the 'Head and Shoulders' type of the early Late Bronze Age): their biographies overlap with those of regional axes as can for example be seen in the association of both types of axes in the Berg en Terblijt hoard (chapter 8).

7.5 Spearheads

Undoubtedly, a large number of the plain, pegged spearheads dates from the Middle Bronze Age B (appendix 6.3). Dated specimens are known from the Sevenum hoard (fig. 7.7) and the Escharen weapon hoard (fig. 7.11). On typological grounds, the spearhead from the Holset barrow hoard can be dated to the Middle Bronze Age B (type Bühl, Butler 1990, 100; this book: appendix 6.2). Butler (personal communication) assumes that such spearheads were also regionally produced.

Figure 7.11 The Escharen hoard (l. of the rapier: 35.8 cm).

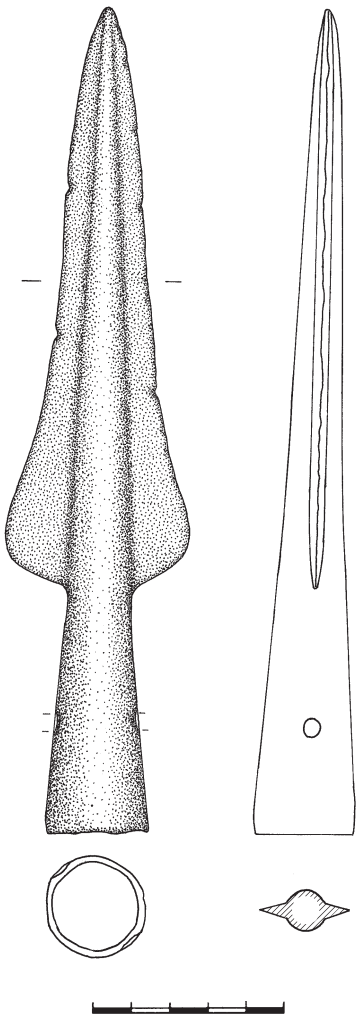

Figure 7.12 Flame-shaped spearhead from the river Meuse near Wessem (scale 1:2; coll. Niessen).

The fragmented Cuijk mould is by some regarded as a mould for casting spears. As will be observed in section 7.9, it is at the moment uncertain what exactly was produced in this mould.

Repeating the argument from chapter 6, we are currently in no position to distinguish Middle Bronze Age B examples typologically from Middle Bronze Age A or Late Bronze Age ones (fig. 7.10). One category of typologically distinct spearheads can be placed in the Middle Bronze Age B, however: the flame-shaped spearheads. It should be kept in mind that these are probably only a minority among the numerous plain, pegged spearheads.

Spearheads with flame-shaped blade

Conspicuous among the many spearheads are those with a flame-shaped blade ('ogival' by O' Connor 1980, 448). This shape can be the result of a specific way of re-sharpening (fig. 7.12). For those mentioned here, however, it is argued that the flame shape must be part of the original design of the spearhead. This is for example clear for those that have not seen drastic resharpening, like the one from Roermond. Their occurrence in a number of characteristic French later Middle Bronze Age hoards indicates that they date mainly from the French *Bronze final I* phase (*c.* 1300-1125 BC century, Butler 1987, 13-7; Butler 1990, table 1). Of the finds listed in Butler 1987, to which a number of new finds have been added here, those from Kessel, Antwerpen and the Late Bronze Age Berg en Terblijt hoard to my mind hardly have the characteristic flame-shaped blades as seen on fig. 7.12. The same goes for the one from the Dutch Epe hoard (north of the research area; Butler 1987, 17; fig. 7). These are also the cases where the hoard context (Berg en Terblijt

and Epe) or parallels from other hoards (Antwerpen, Kessel) suggest a Late Bronze Age date (see the discussion in Butler 1987, 17). Butler argues that in the case of the hoard finds, we may be dealing with an older object deposited in a later period (Butler 1987, 17). I side with Verlaeckt (1996, 16) that these are not true examples of the 'flame-shaped' type, but 'pseudos'. For the 'real' flame-shaped examples a dating to the *Bronze final I* phase still seems the most likely.

Flame-shaped spearheads do not only stand out among others as to their form, they are also often rather large, and therefore they must be lances and not javelins. They are characteristic products of the north-west French regions. Following Butler (1987, 30), flame-shaped spears, Grigny axes, and Rosnoën swords all represent a historically-situated phase of weapon importation from the French realm. These spears and Rosnoën swords might well have been produced in the same area. Whether they were originally part of one warrior set is unclear. The warrior equipment from the Escharen hoard, at any rate, does not suggest this, since it consists of a Rosnoën rapier combined with a regular, non-flame-shaped spearhead.

The evidence is not very informative on the use-life: some spears show traces of re-sharpening, most have sharp edges. Those of the Roermond find are very sharp but patinated, and it can therefore be assumed that the objects were sharpened just before deposition. The recent find from Nijmegen-Oosterhout-De Boel has a socket that was severely damaged in prehistory. It is at present unclear whether such traces represent damage from battle or not.

No less than seven of these spears are said to have been found in the river Waal near Nijmegen or its immediate surroundings, and another one not far from there, in the Rhine near Millingen near the Rhine/Waal bifurcation. Further downstream is a find from Huissen, presumably from Rhine sediment (fig. 7.10). Two finds have an antique dealer's provenance, but leaving those aside there is no reason to question this find cluster. The recent excavation find from Nijmegen-Oosterhout supports this. Unfortunately, with the exception of one find (Nijmegen-Winsseling), it is unknown whether the Nijmegen objects were found in the same location, or dispersed along the river stretch near Nijmegen. Even in the latter case, we seem to be dealing here with recurrent deposition of similar objects in the same river stretch. This is all the more remarkable, since this river stretch not only saw the deposition of other objects in this same phase, but had an older history of metalwork deposition as well (see chapter 6). The same goes for the river stretch of the Meuse near Roermond and Wessem; in both places a number of other *Bronze final I* objects were deposited. The other finds are also from rivers (Antwerpen: Scheldt, Kessel: Meuse), or from other types of wet locations (marshes or swamps: Swartbroek and possibly Eksel). In one case (Wessem) part of the wooden shaft was found in the spear's socket, suggesting that the spear was deposited with its wooden shaft or at least part of it. Summarizing, we are dealing with biographies that ended in watery places, preferably zones in major rivers, whereas dry finds are hardly known.

Other spears

Four looped spearheads must represent British imports (basal-looped and side-looped). Their life-path does not seem to have differed from that of the flame-shaped spears; the provenanced finds seem to be wet-context depositions as well. The large Battel specimen must have been a prestigious object, like some flame-shaped spearheads (O'Connor 1980, list 56: no. 11). For the find from 's-Hertogenbosch it can be deduced that this spearhead had a long use-life. It shows traces of repairs: the side-loops have been removed and the spearhead was transformed into a pegged one (Butler 1961b). Since it is difficult to date the more regular plain, pegged spearheads, this prevent us from contrasting the deposition of flame-shaped spears with those of the more current ones. Suffice it to say that the latter are also known from a variety of wet locations (appendix 6.3), including major rivers, but not from burials. Middle Bronze Age B examples are from weapon hoards (Escharen; fig. 7.11), or weapon-tool hoards (fig. 7.7: Sevenum). The Holset spearhead is the only example of a spearhead coming from a barrow. This was probably not a grave gift, however, but a deposit in an existing mound, comparable to Swalmen-Hillenraadt barrow hoards (section 7.4.3).

7.6. Swords and daggers

It is a difficult question which swords should be mentioned under the heading 'Middle Bronze Age B', since the traditional end date of this period in our region, dated primarily by burial types and pottery (Van den Broeke 1991b; Fokkens 2001), cuts through the dating ranges of sword types (fig. 2. In general, a few sword types can be discerned that have a relatively earlier dating in the Middle Bronze Age B (like the Meteren sword; fig. 7.2). Other types (most notably Rosnoën type, but Rixheim and Appleby as well) should mainly be dated contemporary to the north-west French *Bronze final I* or *IIa* (Briard 1965, 162-73). So far, these swords are all *Griffplattenschwerter*, in which the blade is connected to the hilt with notches or rivets. Occasionally, we encounter a *Griffangelschwert* with the same dating (type Grigny). Swords with a new type of hilt-blade connection, *Griffzungenschwerter*, or flange-hilted swords, are also known: Sprockhoff type I sword, type Nenzingen, Hemigkofen, Erbenheim. These types are somewhat later, although there is an overlap.[2] Properly speaking, they should be discussed in this chapter. However, since *Griffzungenschwerter* herald a new development in sword-fighting techniques that gained momentum in

the Late Bronze Age, I shall treat these swords not in this chapter but in the next. The swords discussed here are listed in appendix 5.2

7.6.1 Rosnoën swords

The most frequently found swords from this period are of the Rosnoën type. These swords are characterized only by the rectangular form of the hilt and the number and position of the rivet holes or side notches therein (fig. 7.13; appendix 5.2; Briard 1965, 172; fig. 56). Their length is relatively long, their width regular and small (Butler 1987, 19-23); this implies that they were designed as rapiers in the strict sense (see the definition in 6.6). The Herten-Ool find with side notches, however, has a slightly leaf-shaped blade near its tip. This implies that it could be used for slashing as well. This specimen can therefore be seen as one of the first examples of a sword in the definitions used here. With regard to this, another observation is relevant: both the Den Dungen find and one of the Herten specimens have a ricasso (Den Dungen on one side only). Such a feature improves one's hold of the rapier, but most of all, it gives more protection to one's hand in the case of rapier fights (fencing, slashing). Much more than in case of Middle Bronze Age A examples, the Rosnoën rapiers have been designed for a way of fighting that comes closer to what can be regarded as real sword fighting.

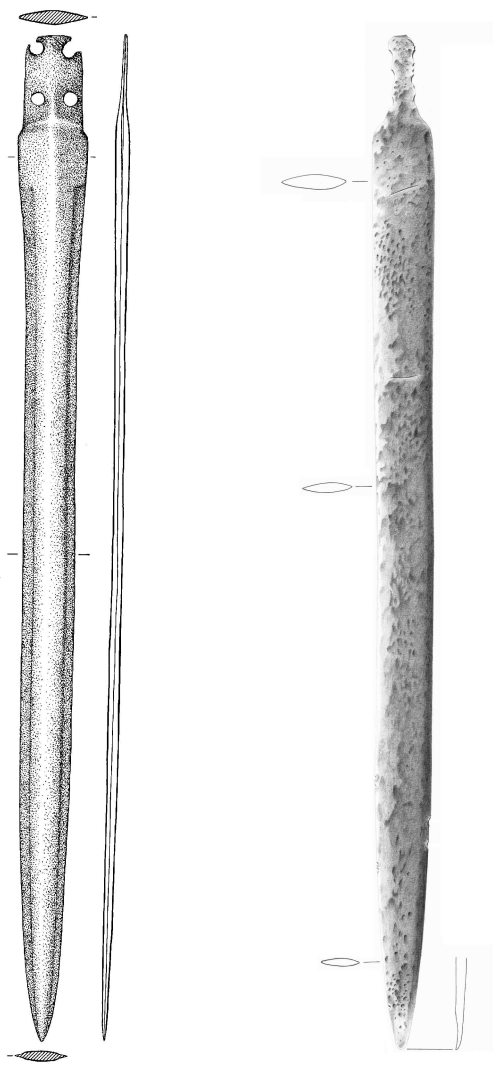

Figure 7.13. Two Rosnoën swords. One from the river Meuse near Herten (left; after Butler 1987, fig. 12:2), one from the marsh near Kronenberg (right) (scale 1:4).

Rosnoën swords are typical products of north-west-France, which are assumed to have reached our region through exchange (Butler 1987). It is particularly remarkable that these swords are all found in or near the river Meuse, whereas more to the south this river does not yield similar sword finds (Butler 1987, 19). Most objects that could be studied show traces of resharpening, particularly on the tip. On the Kronenberg sword impact traces were recognized, implying that it was used for slashing. Consequently, most swords seem to have been used in battle. The Middelaar and Kronenberg find are certainly no typical Rosnoën swords (fig. 7.13), but this is due to their reworked butts (appendix 5.2; see also Briard 1965, 54: 3). These traces of reworking are indirect evidence for a use-life: when using rapiers or dirks for repeated slashing, the rivets are prone to tear and can be severely damaged, urging repairs.

Just like the contemporary flame-shaped spears, their occurrence shows a remarkable clustering. Almost all were found in or directly near the river Meuse. Four rapiers have been found by dredging in the Meuse near Herten/Roermond/Linne, two actually in each other's immediate vicinity (Herten–Ool). This is the same zone that saw deposition of other weapons. Discolourations on the hilt of the Den Dungen find indicate that it was deposited with its organic hilt still attached (Drenth/Kleij 1998, 27-8). A sword from Montfort was found on the higher grounds of the Meuse valley in the Echt-Montfort marshes. It was found in a thick peat layer. The object was covered with a remarkable, so far unidentifiable substance. It gives the impression that the object was covered with something, perhaps an organic sheet (its scabbard?). This marsh yielded more bronzes from this period, mainly palstaves. Another marsh find comes from the fringes of the large Peel peat bog (Kronenberg: fig. 7.13). The find from the river Raam from Escharen is quite remarkable. Here, a Rosnoën rapier was said to have been found together with a spearhead, a bracelet, and a dagger. All objects have a wet context patina, and must have been deposited in the river or its backswamp. It is likely that these objects represent one contemporary deposit (fig. 7.11).

7.6.2 Other Griffplatten and Griffangelschwerter

The group of other *Griffplattenschwerter* is more diffuse. A relatively early specimen is the sword from the Meteren-De Bogen burial. This rapier was found in the remnants of a large barrow with in the clayey soils of the Betuwe in the central river area (Meijlink 2001). Nearby, two bronze arrowheads were found, as well as two rivets (probably part of the rapier itself), a bronze wire and a bronze bead. These objects are likely to have been part of the original burial equipment, although the precise find contexts of the smaller objects could not be assessed. The rapier must have belonged to the central skeleton burial of the barrow. Since this consists of two skeletons in the same position, one (no. 3) on top of the other (no. 10), it is difficult to make out to which one the rapier belonged. It seems most likely that rapier and arrowheads belong to burial 1 (see Lanting/Van der Plicht in press). The sword itself seems to have been an import from south Germany (Butler/Hielkema 2002, 539-41). Similar swords are known from warrior graves in Velserbroek (western Netherlands) and Essel (North Germany; Butler/Hielkema 2002).

The other swords are mainly dirks and rapiers, although the a-typical *Griffangelschwert* from Heumen has a ricasso, which points to a more advanced use as a thrusting or slashing weapon. The majority of the swords must be imports, be it from a variety of regions (Grigny, Rixheim: continental, Cloontia: British, Meteren: south Germany, Maasbracht and Heumen: a-typical, unclear). Only the Antwerpen-Appelstraat sword is of a type that is unparalleled in Europe, apart from a similar find near Schoonaarde in west Belgium. Warmenbol (1992, 82: no. 60) convincingly argues that this is in all likelihood a regional product. Whether it was produced in our region, or elsewhere in Belgium (East-Flanders?) remains unclear. It should be emphasized that it does not bear a characteristic decoration that makes its regional identity more pronounced. Nevertheless, such a sword is exceptional; the majority seems to have been imported from far. A number shows clear traces of use as torn rivet holes (for example the Cloontia sword)) or reworked points (Appleby)). The damage on rivet holes results from thrust-only swords that were apparently still used for slashing movements (Bridgford 1997). Again, most swords ended their life in major rivers. The Meteren-De Bogen sword is the only exception to this rule.

7.6.3 Reworked sword blades

Another phenomenon repeatedly observed is that damaged sword blades were re-used to make daggers or shorter swords. Several examples of repairs have been observed, most notably swords with reworked butt. For some finds, the original form was still recognizable (some Rosnoën blades, see 7.6.1), but for those discussed here re-working was carried out to such an extent that this is no longer possible. As they are *ad hoc* products, they do not show characteristics with a typo-chronological value, although the way in which new rivet holes were constructed often recalls British group IV rapiers (for examples see Burgess/Gerloff 1981, plates 111-114). For that reason, and because some must clearly have been derived from rapiers with a considerable length, it is likely that most are of Middle Bronze Age B rather than Middle Bronze Age A date. For the present discussion, these finds are of much greater interest than one might initially think. They do not only testify to sword biographies in which swords had been extensively used, but also to the re-use, repair and conversion of them. They testify to intensive use-lives and long circulation periods, unknown from earlier swords in deposits. Such re-worked and converted swords nevertheless ended up in the same kind of deliberate deposits as did other swords (major rivers). We may prefer to interpret such re-use and repairs as an economical way of dealing with bronze when the bronze supply ran short. Such an economical treatment was not carried out to the extreme, however. Like other swords, the reworked swords were also offered in watery places. It would fit the evidence better to suppose that their long use-life apparently made them suitable for deposition. Re-using small parts of a long rapier for daggers, as happened in case of a 'dagger' from Nijmegen (appendix 5.2), need not just be the result of an economical attitude. It could also have been done to lengthen the history of a sword that for some reason had attained a special significance. We could for example think of a sword that was divided up into smaller pieces after the death of its owner and given to relatives as small daggers.

7.6.4 Conclusions: life-cycles of swords

Although the dating ranges of swords are long, and the fact that we can only date these objects by means of extrapolating chronologies from other regions, the conclusion is undeniable that the last part of the Middle Bronze Age B (parallel to Reinecke D-Ha A in the German terminology, or *Bronze final I-IIa),* is a period from which a much higher number of sword finds is known than the earlier part of the Middle Bronze Age B. The *Griffplatten-* and *Griffangelschwerter* are more than their Middle Bronze Age A predecessors undecorated, functional objects. They are longer (often rapiers), and in some cases their design allows more versatile battle action (leaf-shaped blade and an occasional ricasso), being closer to a manner of fighting that we know from 'real' swords. A number of the (Rosnoën) swords have rather narrow parallel-sided blades which thicken relatively quickly towards the fairly thick centre. Following Bridgford (1997, 103), such objects are primarily intended for thrusting. Another argument for this is the observation that of many *Griffplattenschwerter* the point is clearly sharpened,

sometimes even drastically (for example, the Appleby sword from Milsbeek, or the dagger from Escharen that was probably made from a sword blade fragment). Swords intended for cutting or slashing alone do not require such a sharpened point (Bridgford 1997, 103). There is also another reason to suggest that the proper way of using these long rapiers could not have been making slashing and cutting movements: the vulnerable hilt-blade connection would easily break then. Osgood *et al.* (2000, 23) point out that therefore effective rapier-fighting may have been quite difficult, something that required special training. Nevertheless, the tearing of rivet-holes of some swords indicates that these swords were still used for cutting or slashing, although their design did not really allow this (cf. Bridgford 1997, 105). The damaged (and sometimes repaired) butt ends, witnessed on some trapezoidal-hilted rapiers, probably indicates friction caused by thrusting movements.

Summing up, the life-cycles of Middle Bronze Age B swords depart in some ways from those of earlier ones. Again, most must have reached the region through long-distance exchange with both Atlantic and continental regions. Now there is also at least some evidence for local sword production in the Scheldt valley. Deposited swords often show evidence for an intensive use-life, some examples were even repaired and re-worked several times. Again, the swords were deposited preferably in major rivers (table 7.1; fig. 7.10). Concentrations of sword finds in the Meuse valley around Roermond-Herten indicate that this river stretch was repeatedly used for sword deposition. The Escharen hoard in a stream valley more inland suggests that rapiers were deposited in conjunction with a complete warrior set, including an ornament, a dagger and a spear.

7.7 Ornaments

A small category of objects that can be dated typologically or by means of circumstantial evidence to the later half of the Middle Bronze Age are body or dress ornaments. These are mainly pins, spirals, a golden coiled spiral and a bracelet (appendix 4.1; fig. 7.14).

Large disc-headed pins with a decorated shaft

Two such pins are known (Vorstenbosch and Deurne). The smallest one is the Vorstenbosch pin (7 cm, but point missing), which has a *pointillé* decoration. The Deurne specimen is 22 cm long and has a completely decorated shaft (horizontal lines directly underneath the head, long vertical lines going down to the point; the surface is regularly waved here). On the basis of its decoration the former can be compared to a pin found in the Weerdinge burial in the northern Netherlands, which provides a date contemporary to Montelius' period II or III. It is considered to be a north-west European type (O'Connor 1980, 75). The Deurne find seems so far to be an unparalleled one, but according to J. Butler (personal communication), who studied this pin, it is probably a central European import. The Vorstenbosch pin is said to have been found in association with a complete pot of the Hilversum type with barbed-wire decoration (Modderman 1959). Since this type of pottery is firmly dated around the earliest centuries of the Middle Bronze Age A, the finds were probably not associated (see also Lanting/Van der Plicht in press). The Deurne pin was found to the east of 'Klein Kasteel'. This is on the fringes of the large peat bog of the Peel. Its patina and good state of preservation imply that it comes indeed from the peat bog itself, and not from its dry environment. A regional (midribbed) palstave comes from the same area, but the two finds were probably not found together (H. Steegstra, personal comment).

Gold coiled spirals

The only gold find from this period are the coiled spirals from Susteren, probably an import from Britanny (Warmenbol 1989b, 509). Their precise function is unknown. Although it seems to be a reliable find, nothing can be said on its original depositional context (Van Hoof 200, catalogus: Susteren-Reinoud van Gelderstraat). For that reason, we shall leave it out of consideration.

Wheel-headed pins

Four wheel-headed pins are known to have been found in the research area (fig. 7.15). Such pins have a wide distribution in Germany, both in its north-western parts as in the middle Rhine area (O'Connor 1980, 75). In southern and north-west Germany, they have characteristically been found in rich females' burials, where they were one of an entire range of ornaments (Wels-Weyrauch 1989). Such rich graves are the female counterparts to the male warriors' graves from the same areas. It is generally agreed upon that these pins were an element of a particular costume, indicating different female statuses (Sørensen 2000, 139-40). Such pins have generally been considered to be totally alien to the female ornamentation that was current in the Low Countries. The only find of two such pins in a secondary burial of the northern Netherlands (Weerdinge), was for that reason interpreted by Lohof (1994, 116-7) as a burial of a woman that might have come from the German region of the Rhine-Main area and was married to a local. The prestige of having a marriage partner from such a remote region then would have been emphasized by burying her in her native dress. A recent discovery in the southern Netherlands, however, now seems to offer an alternative scenario. One of the objects to be made in the clay mould from Oss-De Horzak, was actually a large wheel-headed pin (section 7.9.3). It is somewhat larger than the other Dutch finds, but for the rest it matches well enough the examples that are known from the

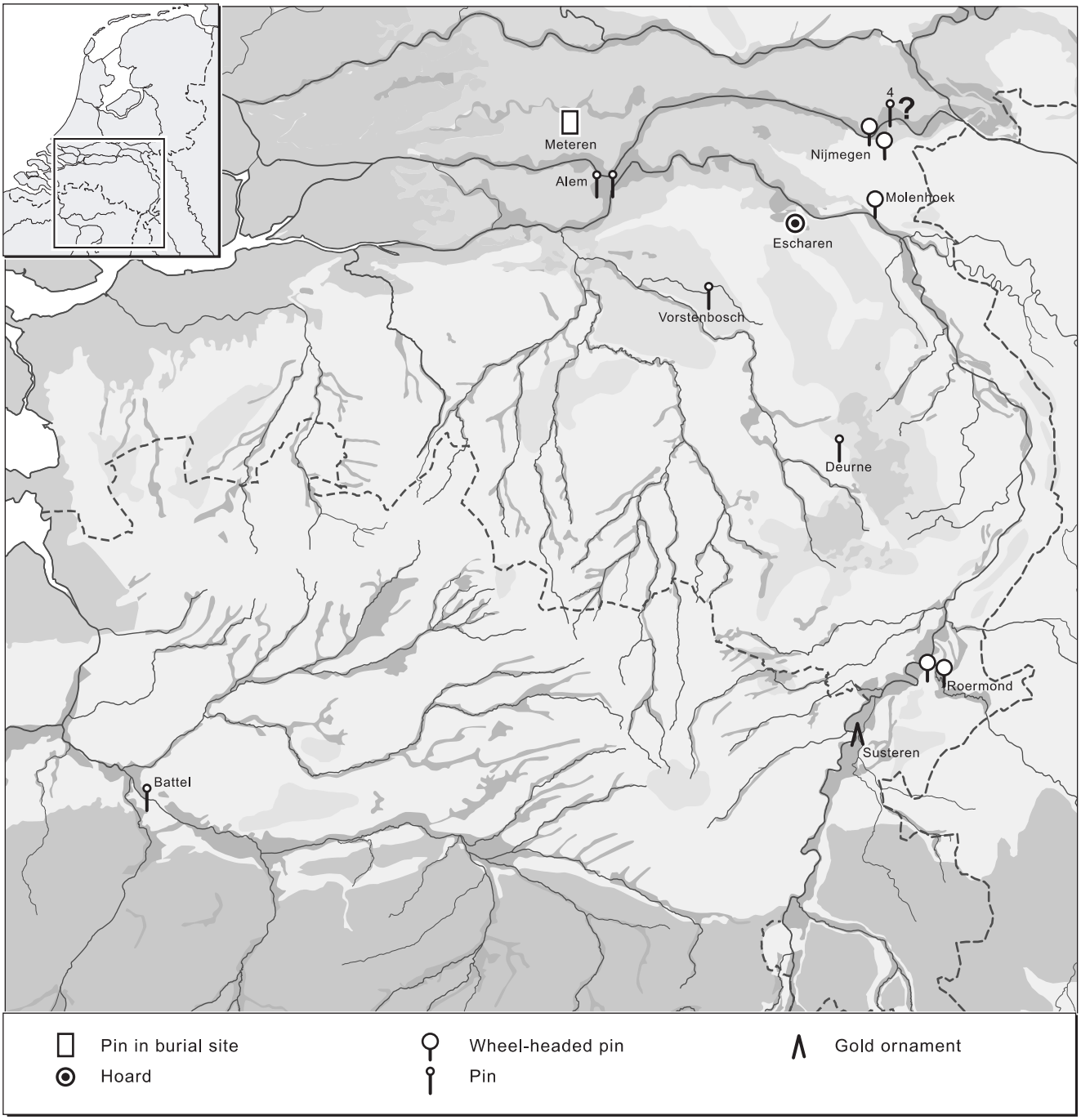

Figure 7.14 Distribution of MBA B ornaments.

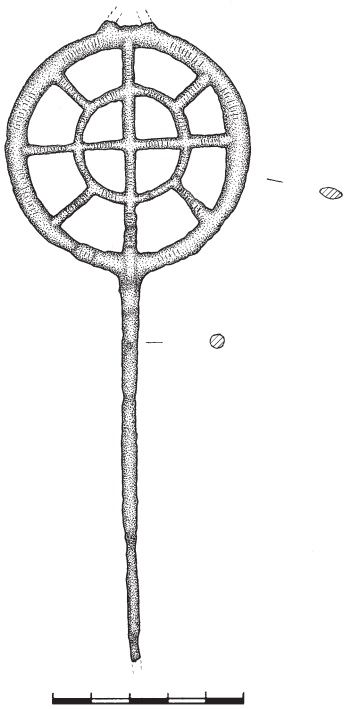

Figure 7.15 Wheel-headed pin from Molenhoek (scale 1:2, drawing Groningen Institute of Archaeology, formerly known as BAI).

German Rhineland (Weber 1993; Weber/Von Detten 1993, BE 4). Although Lohof's observations that such female ornaments were exceptional still stands (they are still extremely rare in the Low Countries, unlike in Germany), we now have evidence that this non-local, exceptional pin-type was locally produced, and hence, the Weerdinge woman may have been born in the Netherlands after all. What is important, however, is the observation that a non-native way of female dress seems to have been copied, whereas there is no evidence at all for local production of ornaments with specific regional styles, as we know them from Denmark (Sørensen 1987).

Two of the pins are from a dry, but otherwise unknown, context, the other two are from major rivers.

Courtavant and Wollmesheim pins

Some smaller pin forms have a trumpet-shaped head, with swollen ribs on the shaft, also known as type Courtavant (O'Connor 1980, 120). A variety is the Wollmesheim type with convex or onion-shaped heads with one to six collars (O'Connor 1980, 123-4; Kubach 1977, 422). A small number of these objects have been dredged from the Meuse and Scheldt. Both are dated to the last centuries of the Middle Bronze Age B (Reinecke D/Ha A; *Bronze final I*; O'Connor 1980, 120, 124). Both are continental types, the Courtavant having their main distribution in north-eastern France, and Wollmesheim pins in the middle Rhine area. Whether these objects were as clearly gendered as is assumed for the wheel-headed pins is unclear. In a burial in Dietzenbach, a Wollmesheim pin was associated with a *Griffangelschwert*, implying that it was part of a martial outlook (Kubach 1977, 429: no. 1044). It is unclear whether this applies to the others as well. The finds from the study region do not come from burials at all: almost all are river finds.

Roll-headed pins, spirals and a bracelet

The roll-headed pin is a simple ornament with a wide distribution, that remain in use for a very long time (Verlaeckt 1996, 26). It lacks the elaborate decoration that made the other pins so conspicuous. It is also unclear whether such pins were parts of brooches or pins in their own right. In northern Germany, roll-headed pins are known from male burials (Laux 1976, 51). In the northern Netherlands, a roll-headed pin was found together with the two wheel-headed pins in the (female) Weerdinge burial (Butler 1990, 59-61). The pins showed no relation to the body of the deceased: all objects were placed alongside the coffin. In the southern Netherlands, not one is known from a burial.The two pins listed here were both found among settlement debris of a Middle Bronze Age B site.

The *spirals* found on the Geldermalsen-Eigenblok settlement may have been *Lockenringe*, rings used for hairdressing. From an Middle Bronze Age context such a use can be argued for when they are found in graves on both sides of the deceased's head. This was probably the case in the Middle Bronze Age grave from Hijken, where the spirals are made of gold (Butler 1990, fig.11A). On the other hand, the spirals are no more than bent bronze wire, that could be used for a variety of tasks (part of fibulae, used for attaching clothing). Spirals may even have been a way to store bronze wire, and not an object in their own right (spirals were also encountered in the Wageningen hoard for example; see chapter 5).

The *bracelet* is from the Escharen hoard (fig. 7.11). By its association with weaponry, it was probably part of a warrior's equipment, deposited together in a stream valley.

Conclusion: ornament deposition?

It is difficult to interpret these finds from the point of view of a possible role in practices of deliberate deposition. Much more than in the case of other find categories, we are confronted with missing data, and therefore unrepresentative contexts. The ornaments described above are often small, inconspicuous, and are more easily overlooked than larger objects like dirks or axes. Consequently, it should come as no surprise that all bronze spirals (small and vulnerable objects) have only been found during a modern excavation of

a well-preserved settlement where metal-detectors were systematically used. On the other hand, a number of bronzes have been found during dredging activities in rivers (Alem, Nijmegen, Battel; appendix 4.1). Because of the very nature of dredging, the chances are small that such small objects can be recognized during gravel or sand extraction. Some of the so-called dredge finds come from old collections, the reliability of which can be questioned (Battel; Warmenbol 1987b, 55), but the recent discovery of similar ornaments by reliable finders (the wheel-headed pins from Molenhoek and Roermond) is an argument to take the older finds seriously. Whether the settlement finds represent deliberate deposits, as Jongste (2002) argues, will be dealt with in section 7.13.1.

A conclusion that can be drawn on selective deposition, however, concerns the absence of bronze ornaments from burials. In view of the high number of burials excavated, this absence seems to reflect reality. Apparently, bronze ornaments were not deposited in barrow graves, but at least some were placed in rivers and other wet places (table 7.1).

7.8 Sickles and other tools

In this section the attention will be mainly on the finds of bronze sickles. Other tools are a few awls (known from settlement sites in the central river area), a small chisel (Boxmeer) and an early urnfield knife (Nijmegen-Brakkestein). The awls and chisel will be discussed in conjunction with other settlement finds (section 7.13.1). On the find context of the knife nothing is known, and for that reason it will not be discussed here. The objects are listed in appendix 3.

Sickles are a small but intriguing category of finds from the point of view of their role in deposition. 26 are known from the research area (appendix 3). They are practically unknown north of the region, suggesting that they were characteristic elements of southern exchange networks and/or metalworking traditions (Warmenbol 1985). In central Europe, sickles are very current, and known in numbers comparable to or even higher than axes (Bradley 1990, 119). The sickles under discussion here are knob-sickles, often with ribs on the edge of the blade (see figure 8.19 for an impression). In two cases, we find grooves instead of ribs (Dodewaard; Venray), which seems to be a regional feature. Finds from well-dated contexts (for example the Late Bronze Age Berg en Terblijt hoard or the settlement finds discussed here) indicate that the form of sickles hardly underwent any changes throughout the centuries. Single finds are therefore hard to date. Sickles are probably multi-functional tools. As harvesting implements, they are an addition to already existing flint knives in use for such ends. The evidence there is suggests that sickles came into use during the Middle Bronze Age B.[3] Interestingly, all Middle Bronze Age B finds are from settlement sites, apart from two sickles that were placed in the mound of the Holset barrow (section 7.13.4). Other –Middle or Late Bronze Age sickles are from a variety of wet contexts or from contexts unknown (appendix 3; for their spatial distribution see fig. 8.20).

I wish to pay special attention to sickle finds from Middle Bronze Age settlement sites, as bronze finds from such contexts are quite uncommon (appendices 3 and 9). In the case of Breda and Venray, they were found in the fill of a pit, together with undecorated shards. On both sites Middle Bronze Age house plans were recognized, and the pits were located near the house sites, although it is unclear whether the two existed at the same time. Those from Dodewaard and Geldermalsen are also from house sites, where they were found among the settlement debris. Although not properly excavated, the two sickles from Opheusden are also from a find layer that yielded a number of Middle Bronze Age shards. Although small (five sites), the association between Middle Bronze Age house sites and bronze sickles is conspicuous. All were found during recent excavation, where metal detectors were systematically used. In this light, the absence of other, much more common objects like axes and spears becomes marked. For one of the sites (Geldermalsen-Eigenblok), cut marks on wooden posts indicate that metal axes were intensively used at this site (Brinkemper *et al.* 2002, 515). It might thus be ventured that the absence of the more regular objects and the presence of sickles is deliberate, even though the sickles seem to follow the normal discard pattern at all these locations (see section 7.13.1 for a more general discussion). Another characteristic shared by all settlement finds is that they are extremely worn, having been used for a long time. The sickles from watery places do not show traces of such an intensive use-life.

The find of two sickles and a type Bühl spearhead from a Bronze Age barrow in the ultimate south-east end of the research area has recently been interpreted by Butler as objects that were not part of the burial gifts, but deposits placed in the mound itself (Butler 1990, 98-9). We saw a similar phenomenon from the barrows from Swalmen-Hillenraad with deposits of Grigny axes (section 7.4.3). Such hoards are unknown from the many excavated barrows in the rest of the study area, and it seems to be a practice idiosyncratic to the middle and southern part of the Dutch Meuse valley.

7.9 Moulds

Although the existence of a regional production has traditionally been based on artefact typologies, there is now also some evidence of metalworkers' tools themselves. More precisely, three moulds have been found in the research region, one of bronze and two of clay. They are the only Middle Bronze Age moulds from the Netherlands and Belgium, and as a possible direct link to the study of bronze production they are important finds. The scarce finds of

pieces of melted bronze on settlement sites listed in appendix 8 may be additional evidence for bronze production sites. As their interpretation is rather ambiguous, I shall focus on the mould finds.

7.9.1 The bronze mould from Buggenum

The bronze mould found at Buggenum is a fragment of what must originally have been a half-mould. It has always been interpreted as a mould for a regional palstave (Butler 1973, 322). On the external face there are radial ribs connected by a thin rib at the base. Butler originally published this find together with a palstave also said to have been found in Buggenum, and considered to have been formed in this same mould (Butler 1973, Abb. 1; Butler/Steegstra 1997/1998: no. 394). Only recently, it has become clear that this is probably not true. The palstave indeed has a similarly shaped blade, but also a midrib that products from this mould would not have had (Butler and Steegstra 1997/1998, 271). The most recent inventory of palstaves from the Netherlands does not provide examples of axes that could have been formed in this mould, although the product from this mould shares the general trapeze-shaped blade of palstaves considered to be regional products (section 7.4.2; Butler/Steegstra 1997/1998). Butler and Steegstra are now of the opinion that this mould fragment was imported simply as a piece of scrap intended for recycling, and that it may never have been used for casting in the southern Netherlands. They do not pay attention to another remarkable feature of this find, which is significant for the present study: the mould fragment is a river find, and seems to have been deposited there just like the many other bronzes dredged from this stretch of the Meuse.

7.9.2 The clay mould from Cuijk

Some years ago, fragments of a clay mould were found by the amateur archaeologist Jo de Wit (Grave) in Cuijk. According to the finder, the mould fragments came from a pit, in which some coarse-tempered sherds were found as well. Unfortunately, the find was unavailable for study when this book was being prepared.[4] According to Nico Roymans, the sherds are of Middle Bronze Age pottery. The mould is light-coloured, and seems to have been tempered with 'glittering' particles (biotite or muscovite?). It is one half of what must have been a two-piece mould (fig. 7.16). Since the mould is severely damaged, it is hard to make out what kind of object was shaped in it. As fig. 7.16 indicates, we are dealing with a two-edged object with a slight midrib. Theoretically, it may have been a long spearhead, a sword or a dagger. The parallel-sided edges, the narrow width and the long length of the form in the mould make the spearhead-theory less probable. A sword remains a possibility, but since the sides of the form are small and run parallel just above the tip, Butler now sees a dagger as the most likely option (personal comment). As I have only seen a plaster of this find, unfortunately I shall have to leave it at that.

7.9.3 The clay mould from Oss-Horzak

When this book was close to being completed, an important find was made at the excavations carried out by the University of Leiden at the site of Oss-Horzak. While investigating the remains of a Roman cemetery, a number of Middle Bronze Age features were discovered. Among them were the traces of a pit, in which the remains were found of what could readily be identified as a clay mould for the production of bronze items (fig. 7.17). Apart from this, a high amount of charcoal, a number of pot shards, stones, and as yet unidentified burnt clay fragments were retrieved. The contents of the pit were collected and sieved (width of measure 2 mm): it yielded more tiny fragments of charcoal and pottery, but not the bronze remains that were expected. Since we are dealing with a well-preserved clay mould from a reliable context, the first example of such a find in the Netherlands and Belgium, and since it provides vital information for the present study, it was decided to include it in this book. At the time of publication, unfortunately, not all analyses have been completed. In advance of the final report of this find (Fontijn *et al*. 2002 and in prep.) the preliminary results are presented here.

Description of the mould

The mould measures 11 (w.), by more than 11.5 (l.) by 4 cm (th.). The uppermost part is preserved, and shows a slightly rounded-off form (fig. 7.17). The surface in which the object negatives are to be found is very smooth and regular on both sides. Although broken, both surfaces are largely undamaged. The long sides display horizontal grooves, that are conspicuously absent on the short side (fig 7.17). The impression is that they were made with twigs or rope and that they served to allow a better grip at the sides. Probably rope or twigs were attached along this side to fasten the clay casting channel that must have been situated at the short side of the mould.

The mould is of a yellowish to beige colouring, not only on its surface but on the inside as well. So, the clay is entirely oxidized. According to Lou Jacobs of the Ceramological Institute of the Faculty of Archaeology in Leiden, it is a very clean clay. Re-baking a tiny fragment showed that is was originally made at a temperature of approximately 650° C, which is not very much lower than the temperatures at which regular (Iron Age) pottery from Oss was fired (personal comment P. van den Broeke). It is remarkable that the clay was tempered with biotite, and that iron particles are lacking. Biotite is generally absent in the regular pottery of Oss as the pottery analysis of Peter van

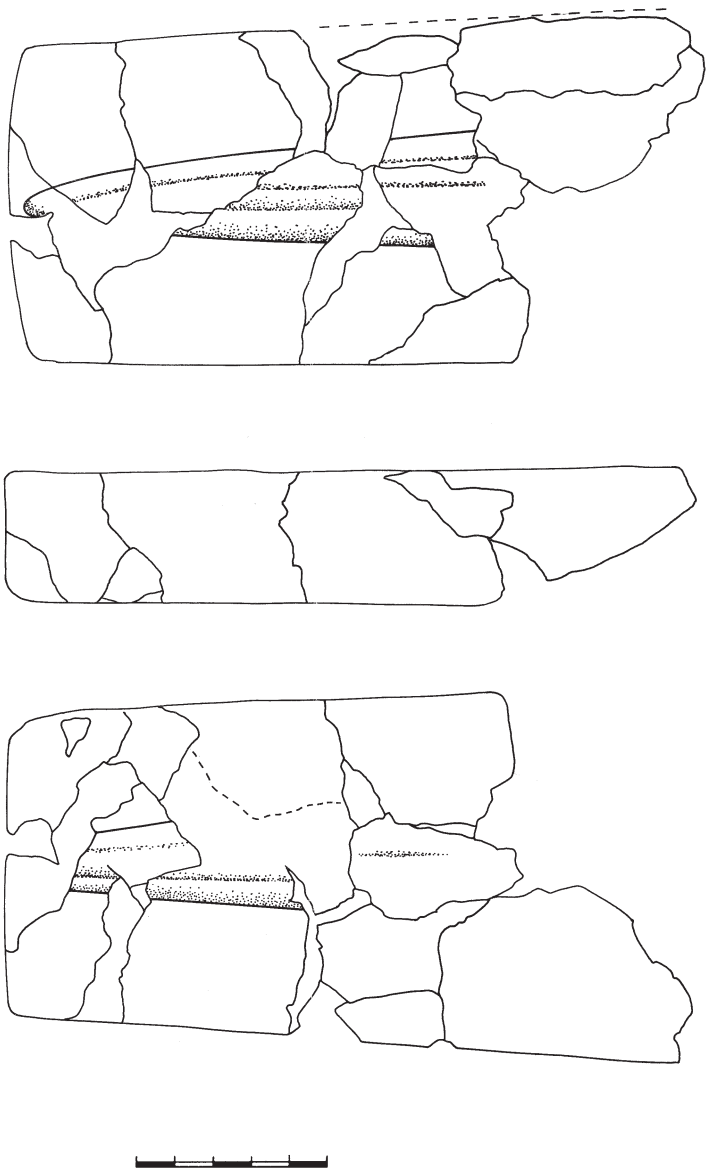

Figure 7.16 The clay mould from Cuijk, coll. J. de Wit (scale 1:2).

den Broeke has made clear (1987; personal comment). Iron, however, can be found in all clay sediments in the surroundings of Oss (the nearby Meuse valley). Although thin-section analysis has yet to be carried out, this makes it likely that the mould was made from a non-local clay.

On one side, from now on termed the axe-side, the smooth surface is blackened. The surface of the object negatives in the clay body are largely blackened as well. On the other side, termed the pin-side, this black colouring is conspicuously absent. Experimentation and ethnographies have made it clear that blackening (with charcoal?) serves as some sort of insulation. It prevents the remaining damp in the clay from interacting with the fluid bronze while casting, and prevents the flowing bronze from sticking to the clay (Drescher 1957, 58; Henderson 2000, 180). This could explain this remarkable black colouring. On the other hand, the temperature at which the mould was fired was so high that all water must have disappeared (L. Jacobs, personal comment), and the charcoal-as insulation-hypothesis does not tally with the observation that the parts of the sides are blackened either. Perhaps it is more logical to suppose that the blackening was simply due to contact of the mould with

Figure 7.17 The clay mould from Oss-Horzak (scale 1:2).

the fire when the pin was being cast. Drescher's experiments showed that casting is more successful when the mould is pre-heated before it is used (Coghlan 1975, 60-1).

To make the casting process successful, some sort of conical casting channel is needed. This channel may have been situated at the lost short side of the mould. For casting the axe, this is unlikely, however. The most massive part of a palstave is near its butt, and it is logical that this is the place where the bronze flowed into the form. A slightly rounded depression around the opening on the butt of the axe-negative might have functioned as a casting channel, but for successful casting usually a longer, conical channel is needed. Interestingly, a sandstone palstave mould from Plumieux, Brittany, also had a modest opening on the butt side, but nothing in the way of the larger conical channel we would expect (Briard 1965, 94-6; fig. 30). Ernest Mols, who is a bronze smith skilled in prehistoric casting techniques, suggested that the channel might have been situated in a clay core that was constructed on top of this side. Indeed, loamy fragments have been found in the pit fill that cannot be interpreted as pottery fragments. This suggestion needs to be investigated further, however, and should be seen as a working hypothesis.

The objects

On one side, the negatives can be recognized of what must have been a small palstave fitting neatly within the 'parallel-sided palstaves' described in section 7.4.2. The find of the mould corroborates Butler's theory that these were regional products. Curiously enough, however, this specimen has flanges on its side, which was thought to be a northern rather than asouthern feature. The negative seems to have been carved out of the clay. Other negatives are of a single arrowhead, partly cut off when the axe-negative was formed, and two arrowheads in a row, with a single barb. It should be kept in mind that the blade was probably hammered out further once cast. Single-barbed arrowheads are known from Hijken, tum. 9, find no. 39 (Butler 1990, 65-7; fig. 11A) in the northern Netherlands. The few examples from the southern Netherlands (appendix 6.3), most notably those from the burial of Meteren-De Bogen) do not have barbs. On the other side, the negative can be recognized of what must have been a wheel-headed pin (section 7.7). It is slightly larger than the examples known from the Netherlands, but matches the general form of such pins. The broad shaft was in all likelihood hammered out after casting. Ernest Mols thinks it is unlikely that bronze could flow successfully through this negative (the gullies are irregularly shaped and narrow). Does this imply that this side was not used? It might be, but one should not forget that we may be dealing with a bivalve mould, just as in the case of the axe. Hence, use traces could be expected on the missing half. The truth of this needs further investigation.

Implications

Although only superficially investigated, the Oss-mould has implications for our views on bronze production. In contrast to the Buggenum mould, which is a river find, the Oss find seems to be directly related to production. It is hard *not* to interpret the high amounts of charcoal and the lumps of loam

as related to the casting process, particularly since such finds are entirely missing from the adjacent Bronze Age features. Remarkable is the concentration of very different objects that were apparently produced by the same smith: a regular tool of daily life, rare arrowheads, that are generally only known from special warriors' graves like the one from Meteren-De Bogen, and a wheel-headed pin: an ornament of a female dress native to German regions as Hessen or the Lüneburger Heide, but that was nevertheless produced in Oss. Finally, there is the possible non-native character of the clay. For the moment, we can only speculative where this clay came from, but it brings us closer to a belief in smiths that were perhaps much more itinerant than recent views assume them to have been.

7.9.4 Conclusion

Several conclusions can be drawn from the mould finds. Two of them (Cuijk and Oss) may be related to bronze production taking place at the location where they were found. The Buggenum bronze mould, however, seems to have been deliberately deposited in the river, just like other bronze objects. It indicates that the craftsmanship of smiths, and subsequently, the tools of metalworking, may have had an added value. We saw arguments pointing in that same direction in the case of the smiths' graves of the Late Neolithic-B (chapter 5). Next, the products that must have been made in that mould confront us with a much higher variety of local products than we are inclined to think on the basis of the typology of the products themselves (the dagger or long spearhead from Cuijk, the arrowheads and the flanged palstave from Oss). Startling is the evidence for local production of wheel-headed pins: female ornaments that are characteristic for rich female burials from German regions, and generally thought to represent a typically female dress. As discussed in section 7.7, the few examples of wheel-headed pins from the Netherlands have therefore always been considered imports, perhaps even as marriages between local chiefs and German women (Lohof 1994, 116-7). The Oss mould implies that such ornaments were apparently copied locally.

7.10 Metalwork and contemporary material culture

If we looking back at the long list of bronze object types described so far, some general observations can be made. A high number of tools (most notably axes) were by this time made in the region itself. The stock of metal in circulation seems to have increased somewhat, and there is a larger variety of bronze objects than was the case in the Middle Bronze Age A. Realizing this, it becomes inevitable to once again deal with the question of the place of metalwork among contemporary material culture: what exactly was its significance in daily life at this stage when opposed to objects from other materials? Were there material culture categories that now fully consisted of bronze objects? When compared with the period when metalwork was adopted, did existing material culture classifications change completely?

The place of bronze objects among tools of everyday life

Axes, sickles, chisels, knives and awls are bronze objects that – as attested by use traces – were actively involved in everyday practices. An interesting result of the recent excavations of settlements, both in the Holocene central river area (Van Gijn/Niekus 2001) and in the Meuse Valley (Boxmeer; Hiddink 2000), is that considerable quantities of flint artefacts have been found that seem at first sight to have been used in the same field of practice. Research done on these finds has shown that the general assumption that flint objects lost their significance as tools for everyday activities to objects made of bronze, can now be shaded. Indeed, flint material is very scarce at Middle Bronze Age settlement sites like Oss (Fokkens 1991) or Venray-Hoogriebroek (Krist 2000), but as these sites have been heavily ploughed out, the archaeological find material may be very biased. Better preserved sites in the Holocene part of the central river area, however, yield a wealth of flint material.

Among the tool types recognized in the Middle Bronze Age find assemblages are retouched pieces, scrapers, knives, points, borers and reamers, and strike-a-lights (Van Gijn/Niekus 2001).[5] The technology can be described as an *ad hoc* strategy, aimed at the production of flakes. The selection of tools, however, was not *ad hoc*, but based on 'clear ideas of what constituted a suitable edge with respect to the task at hand' (ibid., 313). Micro-wear analysis shows that the objects were for example used for working hides (scrapers and some knives), and possibly for working bone or wood and different kinds of tools were used as strike-a-lights (ibid., 309-13). Clearly, the flint implements only partially overlapped with regard to practices for which one could use the contemporary bronze tools known to us. Both bronze and flint artefacts were used as knives and small wood-working tools (chisels), and for cutting tasks performed with bronze sickles there were probably also good flint alternatives (many flint objects appeared to have been used for 'cutting' activities; Van Gijn/Niekus 2001). For some tasks, flint was indispensable (strike-a-lights) or far better suited than known contemporary bronze objects (scrapers for hide-working).

The only object that seems to have been exclusively made of bronze is the axe. We do not know of any flint (or stone) equivalent for axes dating from this period. This implies that for such tools only bronze versions were used. The cutting marks preserved on the wooden posts of one of the Middle Bronze Age house from the Eigenblok site,

indeed shows that the axe used was made of metal, and not stone (Brinkemper *et al*. 2002, 515). The replacement of stone axes by bronze ones seems to have been completed as early as the Early Bronze Age (chapter 5) so this should not come as a surprise.

Weaponry/hunting equipment
A category in which a full bronze kit dominates, is the category of specialized weaponry. In Chapter 6, it was argued that rapiers, dirks and swords were made of bronze from the beginning. Although conceptually derived from long daggers, which existed in both flint and metal versions, a usable dirk or rapier could only have been made from metal. As such, it is an object category that could be developed only due to the specific properties of the material used. The same goes for most spearheads, since these are primarily thrusting weapons, and less useful for throwing. Flint points may have been used as javelins, but less so for those with a thrusting function. However, pointed wooden or bone javelins may be very effective as well. Such bone points are known from a Late Iron Age cult place in Oss-Hertogswetering (Jansen *et al*. 2002). Finds of this kind are probably underrepresented because of their poor chance of preservation. There are at present no flint artefacts known that may have been used as (javelin) spearheads, but some objects determined as arrowheads may in theory have been used as such. Flint arrowheads are known from the Middle Bronze Age A, but seem to have been replaced by bronze ones in the Middle Bronze Age B.

Body ornaments
The evidence of non-metal body ornaments is extremely rare. This is undoubtedly related to the fact that most evidence on clothing and dress consists of organic material for which the conservational circumstances are extremely bad (see Groenman-Van Waateringe 1990 and Vons-Comis 1990 for some finds of clothing from the northern Netherlands). Some pieces of decorated bone found in barrow graves have been interpreted as ornaments attached to clothing or to necklaces (appendix 7.2; Theunissen 1999, 33-4, table 3.13). In some of these graves animal bones have been found as well among the cremated remains (Theunissen 1999, table 3.13 and Fontijn/Cuijpers in press). Most of these bones may represent the remains of funeral meals of grave gifts rather than body ornaments. The brown bear phalanx found in grave 5.2 from Toterfout-Halve Mijl, however, raises the question whether this object was an amulet kept in a small purse around the neck (Theunissen 1993, 34). Interestingly, decorated bone and antler is also known from at least two settlement sites in the Betuwe area: Valburg-Zetten-West (Peters 1999) and Voetakker site 28-1, (Van Dijk *et al*. 2002). From the first site the round antler object can be interpreted as a pendant (Peters 1999, 19; afb. 9).

Conclusion
A bronze tool kit has come to dominate the scene only in the case of (specialized) weaponry including daggers. For the settlement sites studied, most of the daily household tasks were performed with flint objects. Not much is known on bronze ornaments, but their small numbers and general absence from burials implies that they were far from regular items of bodily adornment.

7.11 Regional bronze production

A conclusion of major importance is that the Middle Bronze Age B heralds the beginning of a thriving regional bronze production, as in many other European regions. It implies not only that craftsmanship was (generally) available, but also that metal recycling systems became highly important. This must have affected the biography of metals in a direct way, since the option of recycling was now more than before a logical way of terminating an object's use-life. It makes the decision to deliberately deposit an object a more marked phenomenon (chapter 5). General observations can be made on the nature of regional production.

First of all, it is clear that production focussed largely on axes. Nevertheless, alongside local production, axes were also still imported, and often in large numbers.

Second, although regional products can be recognized visually, an outspoken regional style did not come into being. Rather, the regional axes were modelled after imported ones. This interplay between imports and local product shows all the signs of an open, rather than closed system. We saw the same in the case of the earliest metallurgy of the region around the Late Neolithic-B (chapter 5).

Third, although local smiths apparently modelled their own products after supra-regional styles, they did not do this arbitrarily: It is the west European imports that regional axes have outspoken affinities with. Continental palstaves or winged axes, however, do not seem to have had any influence on regional styles. On the other hand, the Oss mould confronts us with a stunning example of the copying of non-native female dress styles (wheel-headed pins), whereas regionally-specific ornament types are unknown, at least in bronze.

Fourth, the Oss mould, with its possible non-local provenance implies either that smiths themselves were at least partly (seasonally) itinerant, or that they had contacts beyond the region to acquire suitable implements, clays and so on.

Fifth, the Oss mould also suggests that high-status female and male objects (wheel-headed pins or arrowheads) were made by the same person or workshop that produced a regular tool like a palstave. The biography by which such objects came to lead separate lives apparently had not yet begun.

Finally, the presence of non-native moulds among river finds implies that smiths' implements – and hence the practice

of metalworking itself – had not only technological and social aspects, but religious aspects as well.

7.12 Metalwork circulation

The rise of a local bronze production did certainly not lead to a breaking-up of the existing long-distance bronze exchange networks. In section 7.4 to 7.9 we have seen that for most categories, including those produced locally, objects kept on being imported from far. Moreover, the fact that copper and tin ores are situated far beyond our region implies that in the end a surplus of raw materials, scrap or ingots must have been imported from the source areas. It therefore seems wise to have a closer look once more at the constellation of these exchange networks.

7.12.1 General developments: reorientation of exchange networks

As before, the imported objects came from a variety of sources: Atlantic, central European, German regions. There are reasons, however, to suppose that a significant reorientation of the Middle Bronze Age A network took place in the Middle Bronze Age B. For the Middle Bronze Age A, a few Scandinavian imports were known, and the Sögel-Wohlde swords and Oldendorf and nick-flanged axes were examples of types that are known from both Nordic and more southern regions. For the Middle Bronze Age B, there is not one Nordic palstave that has been found south of the Rhine, although twelve of such imports are known from the north and west of the Netherlands (Butler/Steegstra 1997/1998, 168-79). On the other hand, mid-winged axes and sickles, both objects with clear continental affinities, have not been found in the north. Flame-shaped spearheads, Rosnoën rapiers and west European palstaves have hardly or not at all been found in the northern Netherlands (Butler/Steegstra 1997/1998, map 23; Butler 1987, fig. 8 and 13). Apparently, the networks through which these Atlantic types were exchanged to the Netherlands did not extend into the northern part of it. Swords in general are even hardly known from the Middle Bronze Age B in the northern Netherlands: O'Connor 1980 lists just two examples![6] Only for the British basal-looped spearheads there are examples known from both the south and the north (Butler 1987, fig. 11).

7.12.2 Patterns of procurement

In section 7.10 we have seen that bronze objects were only one category among a larger number of items procured by means of exchange. For the period under investigation, we are in the unique situation that we can compare the patterns of procurement for bronzes with those of other materials.

Objects procured on-site or in short-range exchanges

On the basis of the settlement finds investigated, it appears that the most relevant tools of everyday life were procured and produced on-site (pottery, bone and antler tools and ornaments, flint and stone tools). Flint was vital for most tasks, and although not native to most parts of the river area and the sandy core area of the southern Netherlands, it was mostly imported from fluviatile sediment or layers in the neighbouring ice-pushed ridges, like those from Nijmegen, Arnhem or Rhenen (Van Gijn/Niekus 2001, 307). For the central river area and the Meuse valley, these flint sources were mostly no more than 10 to 30 km away, thus demanding only short-range exchange or expeditions. For the Boxmeer settlement, situated near the Meuse, the fluviatile sediment was even more easy to reach. Flint from sources much further away, like the Rijckholt-St.Geertruid or Valkenburg mining sites, seem hardly to have been used in the study region (Van Gijn/Niekus 2001, 307). It is an open question whether flint was used in similar quantities in the interior of the study area (De Kempen micro-region for example), as these are clearly much more remote to any sources of flint.

An interesting observation is that most objects produced on-site or procured via short-term exchange hardly have any element of display, with the exception of decorated bone and antler ornaments. Pottery is hardly decorated and of poor quality; the flint assemblages lack sophistication, as if less effort was put into their manufacture than in earlier periods (Van Gijn/Niekus 2001, 315).

Unfortunately, it is unknown how regional bronze objects fitted within this picture because we have no information on the distribution of forges across the region.

Objects coming from further away

A three-fold distinction can be made for the objects that generally came from further away. These are almost exclusively objects made of bronze

1 *Object types that were imported from abroad in some numbers, but for which regional bronze equivalents existed as well*. These are imported palstaves and flame-shaped spearheads. Only in the case of west European palstaves, the imported ones often show similar use traces as the regional products. Moreover, it is only these palstaves that the regional products seem to have been modelled on. Continental axes, although occurring in the region, do not seem to have influenced regional styles.
2 *Object types that were imported only*. These are dirks, rapiers and swords (with the exception of the rapier from Zwijndrecht), and mid-winged axes. All of these were only made in bronze. The former are specialized weaponry, associated with a specific, close-range, fighting technique. The latter are not only remarkably different from contemporary axes for their form of hafting, but especially the Grigny variant is also conspicuously large and heavy, suggesting a specialized weapon function as well as a prestigious character. Swords and mid-winged axes are

much rarer than the above-mentioned category, but the number of finds still indicates that their importation was based on regular longe-range networks. This situation applies particularly to the phase contemporary to the *Bronze final* period, for which a relatively large number of similar Rosnoën rapiers is known. This is also the same phase in which the import of the Grigny axes must have taken place.

3 *Objects that were extremely rare, coming from far away and visually deviate from more regular material culture forms*. These are the central European axes like the one from Doorwerth or the high-flanged axe from Goirle. The latter axe probably represents the longest distance across which a bronze object travelled. These axes seem to represent exchange transactions that were very rare and that were not based on more regular long-distance links. For such objects, we should think of long-range procurement in which the focus was not on establishing political ties, but rather on extending the reach of the importing society of the realm beyond its own cosmological frame (chapter 3; Needham 2000, 188).

7.13 Deposition

Most of the metalwork described here ended a life of use and circulation in an act of deliberate deposition. Listing the evidence on deposited objects, the following conclusions can be drawn. As before, the majority of metalwork was placed in 'watery' places. Such deposits contrast sharply with objects that were deposited with the dead in barrows. New is the – scarce – evidence for deposited bronzes on settlement sites. The evidence indicates selective deposition, with specific types of objects ending up in specific types of locations. Below, the different kinds of deposition will be described, and additionally, a few words will be said on deposition of a quite idiosyncratic type: deposition of objects in burial mounds.

7.13.1 Deposition in and around houses

In wet deposition sites, small indistinctive bronze objects like awls, undecorated pins or chisels are notoriously lacking, whereas they are present at settlement sites (fig. 7.18; appendix 9). Wet deposition sites have so far not been investigated systematically, and are often only known from dredging, so we cannot take this as evidence of absence. Settlement sites, on the other hand, particularly those with a well-preserved find layer like those from the central river area have seen professional excavations, generally aided by systematic metal-detecting. The fact that small bronze items have only been found on settlement sites can therefore at the same time be the product of research factors as well as selective deposition. We are in no position to make this out.

There are, however, other patterns that do not agree with preservation and research circumstances. The most common bronze objects, axes and spears, have not been found on settlement sites so far.[7] Even the majority of the unprovenanced finds cannot balance this, since most of these have a wet context patina (section 7.4). Their general absence on settlement sites must therefore represent evidence of absence: axes, spears, but swords as well, were as a rule not deposited on farmyards or in houses.

Another pattern that also reflects prehistoric practices instead of preservation and research processes concerns the repeated presence of bronze sickles on settlement sites. At least eight Middle Bronze Age sickles have been found; they are all from settlement sites. Another 18 sickles cannot be more precisely dated than Middle Bronze Age or Late Bronze Age (appendix 3; table 8.1). Eight of them are from a wet location, and two from a burial mound (the Holset barrow). So, although sickles are a much rarer tool than axes, and well-excavated settlement sites are also not very numerous either, half of the sickles with known context are from settlement sites, whereas the more numerous axes are totally absent from this context. Are we dealing here with a general practice in which sickles were deliberately deposited in or near houses? I think that this is indeed the most viable explanation which we shall arrive at by evaluating the alternatives.

As all sickles are extremely worn, and found among what is interpreted by the excavators as 'settlement refuse', one of the first interpretations that comes to mind is that they are discarded objects. To this view two practical objections can be raised. In the first place, sickles were relatively rare objects: if they ended up there as refuse, why then did we never find far more current tools like axes among the settlement debris? Second, for bronze tools that could no longer be used anymore, it is much more likely that they were recycled instead of thrown away. As we have seen, bronze was rare in the southern Netherlands, and during the Middle Bronze Age B a thriving regional production must have existed that must have been based mainly on remelting. Another idea would be to see these sickle as lost objects, but this is – I think – very unlikely: although awls or pins may easily get lost when fallen down in the trampled clayey ground of a site in the central river area, a relatively large object like a sickle should in most cases be retrieved easily. Moreover, some of them were found in pit fills (Venray, Breda), which makes loss even more unlikely. On one site (Opheusden) two sickles were found. Again, the chances that two sickles got lost suggests extremely clumsy behaviour on the part of the inhabitants. Another interpretation is to regard the sickles as stored but not retrieved objects. Again, it would be quite unlikely that such accidents resulted in the regional find pattern described; it is also quite odd that sickles and not other objects dominate such 'stores'.

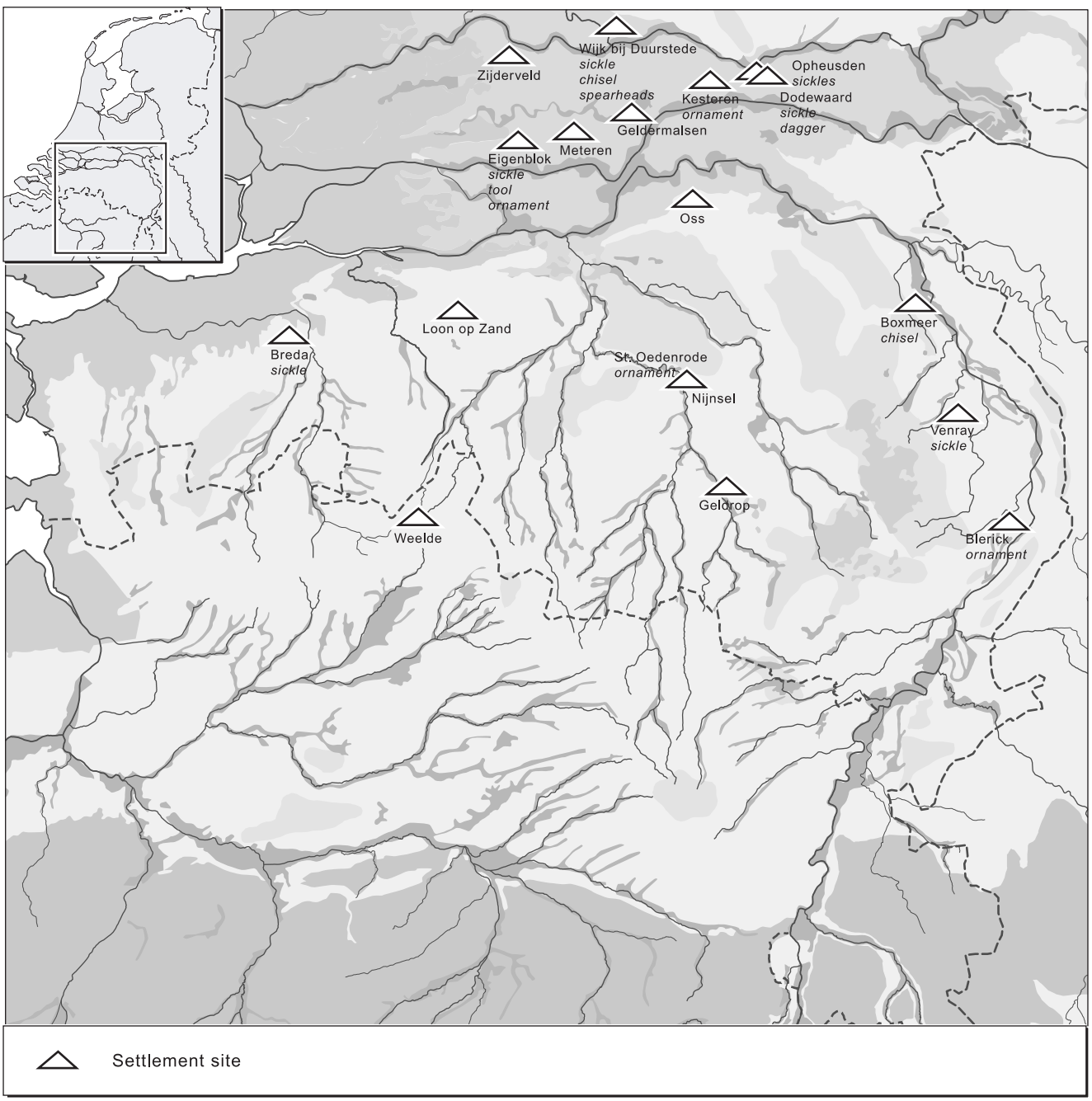

Figure 7.18 Distribution of MBA B settlements. indicated are the ones which have yielded metalwork finds.

Consequently, the frequent presence of bronze sickles on settlement sites can only be explained by the fact that people left them there intentionally. At this point, it becomes interesting to have a closer look at their more precise find context (if possible). At Venray-Hoogriebroek, the sickle was found in a pit fill together with some sherds. Into this pit fill one of the construction posts of the house had been dug in (Krist 2000, 21). It is very unlikely that the association between a pit with such a special content and one of the main posts of a house is accidental. In actual fact, similar situations are well known from the later Iron Age and Roman Period in the southern Netherlands (Gerritsen 2001, table 3.5). We therefore seem to be dealing here with a deposition related to the building of the house: a foundation deposit.

The find context of the sickle of Eigenblok-5 is also interesting. Near what should have been the western entrance of the house, a bronze sickle and an awl were found. Close to the house the excavators found burnt lumps of clay and pieces of a burnt human skull. According to Jongste (2002), their stratigraphical position implies that the bronzes were all deposited in the last phase of the occupation of the site. He suggests that this took place on the occasion of the abandonment of the house.

Such detailed observations are (still) not available for all sickle finds, but it is interesting to see that some of the other bronze finds also have characteristics that suggest their intentional, meaningful deposition. The Boxmeer chisel was found in the upper fill of a silo, a pit containing a layer of charred grain. In Dodewaard-site 20, the dagger itself is remarkable. It is probably a French import of a type so far unknown in the Low Countries, and in excellent condition. It is very unlikely that such an object was simply discarded or lost.

Bronze deposition and the social significance of houses

Some conclusions can now be drawn. There is evidence that in some Middle Bronze Age B farmyards in the region bronze objects were intentionally left or buried in refuse layers or pits. Sickles are the only objects of which we know that they were selected for such practices at different places and different moments across the region. The settlement data is too scanty to make out whether the same applied to other bronze finds. Still, although sickles may figure in farmyard-depositions across the region, the practices in which they were involved must have differed considerably. In Venray, a sickle was probably used as a house foundation deposit. At Eigenblok-5, the deposition was related to the last phase of the occupation of the house or its abandonment. It might even have taken place at a moment when the house itself – or what was left of it – had already been abandoned for some time. The sickles are all extremely worn, suggesting that in all cases its intensive and long use-life might be related to its selection for deposition (cf. Jongste 2002). With regard to the other objects, other ideas may have mattered. The deposition of the chisel may have been related in the first place to the silo with grain, and not to the house. The dagger from Dodewaard is, contrary to the dagger from Eigenblok-5 and all the sickles, in an excellent condition. As such it is directly comparable with the characteristics of some daggers and rapiers from rivers. Summing up, the evidence of bronze depositions on farmyards is far from equivocal. To this an important research hiatus must be added: the other settlement finds have so far hardly been investigated for traces of possible deliberate object depositions in relation to houses, apart from the deposition of human remains mentioned. There are some indications, however, that such practices took place (Jongste in press). What's more, the formation of the refuse layers on the settlement as a whole is something we hardly know anything about as yet.[8]

What is especially clear when comparing deposition on farmyards to other forms of object deposition, is that deposition of many important and current object types (axes, spears, swords) as a rule seem to have taken place elsewhere. Sickles may be the one object type regularly deposited on farmyards, but they were placed in other non-settlement locations as well. The evidence so far does not allow us to see whether tools of other materials (flint, stone) also figured in such non-settlement depositions. There are some finds of non-bronze objects in graves, but these are rare (see section 7.13.3).

Biased as it may be, the evidence on farmyard deposition is important as it confronts us with the perceived significance of houses (Brück 1999; Gerritsen 2001). In the introduction to this chapter we saw that from the Middle Bronze Age B on there is evidence of house sites from areas within the study region. These are often large houses, varying from 20 to more than 30 m in length. Most probably they had a large cattle byre (Roymans/Fokkens 1991, 6-8). Particularly the excavation of well-preserved house sites in the central river area has shown that the house itself was surrounded by peripheral structures like fences, and probably also field systems (Theunissen 1999, fig. 4.11, 4.33). The house was the primary centre of daily life, and as Gerritsen (2001, 43-8) argues, questions on social identity cannot be tackled without an explicit focus on the household. These large buildings were probably both physically and symbolically focal points in the lives of the inhabitants. Using an anthropological perspective, Gerritsen argues that the households and the buildings they inhabit tend to be symbolically fused; a house is identified with its inhabitants and vice versa, the social identity of the inhabitants is partly constructed through the inhabitation of the house (idem). Therefore, he argues that in the life of a house different phases can be distinguished that

probably parallel the social history of the household: its formation (building of the house); its development (inhabitation); its splitting up or ending (leaving the house after marriage of a member of the household or the death of the family head). As we have seen, some of these phases were marked by special deposits for which bronzes were selected: a foundation deposit in Venray, and perhaps a closing deposit at Eigenblok-5. At the latter site, the link between the house and human inhabitation was even emphasized in a quite literal way by the placement of burnt fragments of a human skull in front of one of the house's entrances (or attaching it to its wall). Similar examples of human bones on Middle Bronze Age house sites are known from the southern Netherlands and elsewhere in the Low Countries.[9]

7.13.2 Axe and weapon deposits: deposition zones as places of historical significance

The age-old tradition of deposition of axes in watery places continues without major changes in the Middle Bronze Age B. The same applies to the deposition of swords, daggers and spears.

Again, axes with clear traces of a use-life were deposited in natural watery places, often as single deposits. Axe hoards consisting of numerous palstaves, like the Voorhout hoard from the western Netherlands (fig. 13. 3; Butler 1990, 78-84), are unknown. Regionally produced palstaves now dominate depositions, but west European imports seem to have been deposited in the same way. There are a few examples of deposited unused West-European imports, but these are clearly a minority. It was argued that continental imports, palstaves and large mid-winged Grigny axes were deposited in a non-normative way: in burials or in mounds respectively (section 7.4.3). Deposition of swords and spears also follows the same patterns that became established in the Middle Bronze Age A, but seems to have been practised more often. Swords were predominantly placed in major rivers, whereas spears are known from wet inland sites as well. The Escharen hoard probably represents the deposition of an entire warrior equipment.

Sword deposition gained in importance by the end of the Middle Bronze Age B. New is the fact that there is now also evidence for concentration of sword finds in one place in the river. Sites like Roermond-Ool, where three Rosnoën swords were found in the same location (fig. 7.10) suggest that river depositions involved several offerings taking place at the same time, perhaps at communal feasts. They give the impression that such river deposition sites attained the status of martial, elite offering places.

With axe deposits we see a similar phenomenon at inland sites. The best example are the marshes around Montfort and Echt, where a large number of palstaves was deposited (see elsewhere in this book: fig. 14.1). These finds do not show a strong clustering in one zone of the marsh, but they are scattered across the swamp. Therefore this must have resulted from several visits to the area, probably by groups of people coming from different sides of the swamp. An occasional spear and at least one sword was also placed in the marsh at such an occasion, but there is a contrast to the Meuse depositions nearby (five to ten kilometres): here many more swords and spears have been found. We thus seem to be facing at least two environmental zones in the landscape that were used for different kinds of multiple-object deposition. The river almost exclusively served as repository for prestigious weaponry (swords) and thus must have acquired a special significance as a landscape element with martial connotations in this period.

Summarizing we see that the way in which the landscape was used for depositions in watery places seems to have been defined in the Middle Bronze Age A, and that it seems to have undergone hardly any fundamental transformations in the Middle Bronze Age B. However, there is now more evidence for repeated use of *the same zone in the landscape* for depositions of the same kind (for example: swords in the Meuse near Roermond-Herten). The somewhat haphazard use of the wet zones in the land now seems to have become more structured, and some wet zones became multiple-deposition zones, sometimes with specialized – martial – meanings. Thus it seems as if such places acquired a historical and structural significance in the way people dealt with their environment. In section 7.2, it was remarked that there are indications that the cultural landscape now became more structured by barrow cemeteries and settlements, and as such became more than before a landscape with a historical and ancestral significance. From the intensification and concentration of offerings in certain natural places, we can now argue that these places acquired a historical significance as well.

7.13.3 Deposition of objects in burials

The evidence for a larger number of deposition sites is paralleled by a rise in archaeologically visible burial rites. For the Middle Bronze Age B, clearly more burials are known than for the Middle Bronze Age A (Theunissen 1999, 72, 85). Appendix 7.2 lists the objects found in those burials. They include both Middle Bronze Age A and Middle Bronze Age B burials, as these often cannot often be distinguished anymore (L. Theunissen, personal comment). A look at the table indicates that bronze finds are extremely low in quantity. The green discolorations on cremated bone are thought to indicate bronze objects that melted and got lost (Theunissen 1993). Green discolorations are also known from burnt fish bone from a the Early Neolithic site Brandwijk (Ball 1997, 12, fig. 4), which makes the identification of green discolouration as bronze remnants less likely. Chemical analysis

on one piece of cremated human bone from a Middle Bronze Age burial from Nijmegen-kops Plateau has not corroborated this theory either, but this sample is too small too be decisive, however, and we will their therefore not take the interpretation of green discolorations into consideration (see also Fontijn/Cuijpers in press).

Although the cremation remains that were deposited in urns never seem to have been completely collected (Fontijn/Cuijpers in press), it is unlikely that bronze items were systematically forgotten. The general absence of bronzes must reflect a prehistoric intention: these objects were apparently not meant to be with the remains of the deceased. The grave of Meteren-De Bogen is the only case of a sword placed in a burial. It contrasts sharply with the numerous other sword finds, the majority of which can be shown to be from major rivers or other watery places. The Meteren burial seems to be the exception rather than the rule, and might relate to a special historical event. The two examples of burials with bronze axes (Goirle, Doorwerth) also underline the non-normative character of axe deposits in burials. In both cases they consist of unique, non-normative objects, that can be considered exceptions to the rule of non-deposition of bronzes in burials. Drenth *et al.* (2002) recently argued that the few bronzes in Middle Bronze Age burials known from the Netherlands are related to the special social position of the interred deceased in intra-regional bronze exchange networks. However, they do not seem to realize that in the case of most bronze axes deposited in Dutch Middle Bronze Age graves, we are dealing with unique, exotic and non-normative items. The Goirle and Doorwerth axes were not the kind of axes that were regularly used or exchanged, not even as elements in prestigious warrior outfits. The same applies to the Middle Bronze Age B *socketed* axe from the 'Eupen Barchien' tumulus in the northern Netherlands (Drenth/Brinkemper 2002), or the Middle Bronze Age A axes from the *ringwalheuvels* in the southern Netherlands (see previous chapter). Rather, the items deposited seem to have been regarded as unique exotics, not symbolizing the control of vital exchange networks, but rather the reach of local communities for exotic material beyond the normal social exchange networks and perhaps cosmological frames of society.

The items that have been found in such burials are generally not made of bronze. Theunissen (1999, table 3.13) lists amber and bone ornaments and pendants, and even a brown bear phalanx. Again, it is conspicuous that the bronze ornaments that are now in some numbers known were not found in burials but in watery places. This is in contrast with what we shall see with regard to the evidence from the Late Bronze Age, when bronze body ornaments were deposited in burials. The conclusion can be drawn that bronze ornaments, identical to male and female dress of other regions, were used in our region, but for some reason not considered to be important in the last presentation of the remains of the deceased before being interred.

7.13.4 Deposition of objects in burial monuments

A depositional location that was so far unknown is the mound of the burial monuments themselves. Only three examples are known (Swalmen-Hillenraadt tumuli 1 and 2 and the Holset barrow; Butler 1990, 98-102), all Dutch Limburg. Middle Bronze Age barrows are only in low numbers known from the Meuse valley, and it is therefore hard to say whether mound deposition was the exception or the rule. In the Swalmen cemetery, where a relatively large number of Middle Bronze Age barrows was excavated, it has been attested only for the two mounds mentioned (Lanting/Van der Waals 1974). In other parts of the research area larger numbers of barrows are known (the Kempen micro-region for example; Theunissen 1999), but here bronze or other artefacts have never been found in the mound. This makes it likely that mound deposition was only practised in Dutch Limburg. The number of finds is too small to allow some more general statements on it, apart from this: the Swalmen mounds show that bronzes were deposited in a mound that was itself already quite old. It is unclear whether they were deposits made on the occasion of re-use of the mound for burial, or whether there was no link to the burial ritual at all. That barrows themselves became foci for special activities could be in line with a more general development. From the construction of *allées* and annexes it can be deduced that there was a more general tendency to see barrows as places where special rituals were carried out (Lohof 1991, 270; Fontijn/Cuijpers 1998/99, 62).

7.14 Conclusions

Summing up, the following points can be made on Middle Bronze Age B metalwork and its cultural biographies.

The role of metalwork in daily life

Bronze was predominantly significant as a tool, weapon or ornament. It is only in the category of axes and weapons that a full bronze tool kit dominates (mainly swords and spears). As such, the structure of material culture was essentially similar to that of the Middle Bronze Age A. Sickles are a new element among the metalwork repertoire, but their introduction does not seem to have affected the production of existing non-metal tools. During the Middle Bronze Age B, bronze ornaments are more current than before, but still not known in huge quantities. When compared with other sorts of material culture, bronze was the most important object that was acquired through long-distance exchange.

The emergence of regional production and its 'open, 'adaptive' character
As elsewhere in north-west Europe, the Middle Bronze Age B heralds the emergence of a thriving regional production. By far the greatest part of the deposited palstaves were now produced in the region itself. A striking feature of this regional production is its 'open' and 'adaptive' nature. An outspoken regional style is lacking, and local products seem to have been made to look like imported ones rather than to express a distinct identity of their own. The similarities are especially with the Atlantic types (palstave) and not with central European ones. The Oss mould, furthermore, suggests that non-local ornament styles were copied in a straightforward manner.

A reorientation of long-distance exchange networks
In spite of the emergence of regional bronze production, objects that were made in the region kept on being imported (most notably axes). When compared to the preceding Middle Bronze Age A, it is remarkable to see that Nordic imports are now no longer among the metalwork of the southern Netherlands. Moreover, continental products like sickles and mid-winged axes are absent in the north, but present in the south. It is also remarkable to see that swords kept on being deposited in the southern Netherlands, and even in larger numbers as the Middle Bronze Age B wore on. In the northern Netherlands, however, they were hardly known. In all, it seems as if a reorientation of the main exchange networks took place by which the northern and the southern Netherlands drifted apart.

Watery places, settlements, and burials: the system of selective deposition
The system of selective deposition as it was shaped in the Middle Bronze Age A continued. The larger number of finds may indicate that the rate at which deposition was practised increased, particularly during the later part of the Middle Bronze Age B (contemporary to *Bronze final I*). Axes ended up in a variety of watery places, usually after a life of circulation and intensive use. The same applies to spears and – in particular – swords, but to bronze ornaments as well. As before, barrow graves hardly serve as repositories for bronze objects. There is new evidence which suggests that some farmyards now also served as foci for deposition, but the offerings made here contrast with those in watery places (mainly sickles, and no axes, spears and swords). Deposition on farmyards seems to have been practised on different occasions. There is both evidence for links to acts of house construction and house abandonment. Occasionally, objects were deposited in the mounds of barrows. This, however, seems to have been a practice idiosyncratic to Dutch Limburg only.

Natural places as places of historical significance
For the Middle Bronze Age B, we have indications for the first time that some parts of rivers or peat bogs were repeatedly visited for depositing items. It thus seems that – parallel to the indications that the cultural landscape now became more structured with barrows and settlements – natural places acquired a historical significance as well. In the next chapter, we shall see that this only intensified during the Late Bronze Age.

notes

1 This site is just to the south of the area depicted on the maps in this book.

2 Schauer places all in the south German *frühen/älteren Urnenfelderzeit* (respectively, Reinecke D to Ha A1; Ha A1 to Ha A2; Ha A2; see the argument in Schauer 1971 and O'Connor 1980, chapter 3). O'Connor (1980, 115) argues that leaf-shaped flange-hilted swords appeared in west central Europe during Ha A1, but did not become common until Ha A2. The earliest types have been the Hemigkofen swords. Lanting and Van der Plicht's recent evaluation of the ^{14}C-datings of this south German chronology equals Ha A1 to 1200-1125 BC; Ha A2 to 1125-1025 BC (Lanting/Van der Plicht in press). Assuming that similar dating ranges are applicable to the Dutch finds of these *Griffzungenschwerter*, then the phase into which such swords would have been introduced and become dominant is the last century of our Middle Bronze Age B, respectively the transition to the Late Bronze Age.

3 Modderman and Montforts (1991, 149) claim that in the find layer of the Opheusden sickles there were also Hilversum pottery shards. This would imply a dating in the Middle Bronze Age A. Whether shard and sickles are really from the same time period cannot be stated with certainty, however.

4 The find has been studied by J.J. Butler and N. Roymans. Both kindly provided me with information on the find. In the near future I shall pursue the study of this remarkable find further.

5 Since many of the find assemblages represent a mix of Late Neolithic and Bronze Age material, it is unfortunately not possible to see which tool types were current in the Middle Bronze Age only.The plano-convex knives and barbed and hollow-based arrowheads listed by Van Gijn and Niekus, for example, are generally seen as typical for the Late Neolithic and Early Bronze Age (Lanting 1973).

6 A trapezoidally-hilted sword from Emmen and a Rosnoën rapier from Ekslooerkijl (O'Connor 1980: list 28: no. 34; list 73: no. 24).

7 Two spears from Wijk bij Duurstede, just north of the research area, are from a site that also yielded Middle Bronze Age settlement remains. These might represent settlement finds, but as the site is unpublished and the excavator could not provide me with detailed information, I cannot discuss this find.

8 The forthcoming publications of the settlement excavations in the *Betuwe* will deal with such questions however (personal communication C. Koot).

9 Personal comments L. Theunissen and C. Koot.