Analecta Praehistorica Leidensia 33/34 / 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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ANALECTA PRAEHISTORICA LEIDENSIA 33/34

ANALECTA
PRAEHISTORICA
LEIDENSIA 33/34

PUBLICATION OF THE FACULTY OF ARCHAEOLOGY
UNIVERSITY OF LEIDEN

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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

UNIVERSITY OF LEIDEN 2002

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Copy editors of this volume: David Fontijn / Harry Fokkens

ISSN 0169-7447

ISBN 90-73368-19-7

Also appeared as doctorate thesis, Leiden, March 27, 2003.

Subscriptions to the series Analecta Praehistorica Leidensia
and single volumes can be ordered exclusively at:

Faculty of Archaeology
P.O. Box 9515
NL-2300 RA Leiden
the Netherlands

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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Part I

Problem, approach, source criticism

1 Introduction: the problem of bronze deposition and the aim of this study

1.1 Introduction

October 2001: during the construction of a road at a location in the municipality of Susteren (in the south of the Netherlands, province of Limburg), a drag-line unearths a dark-green bronze object. A local amateur archaeologist, who happened to be there, quickly jumped into the already excavated pit and saved the object from destruction. The object appeared to be a well-preserved socketed axe dating from the Late Bronze Age. Further inspection of the find-spot made it clear that the place where the axe was found did probably not consist of secondarily moved earth, but no further objects or soil traces could be detected.

The find almost immediately caused commotion. The reason for this was that it was found in an area that had seen a systematic archaeological survey not long before, uncovering a number of archaeological sites. None of these dated to the Bronze Age, however (Ball *et al.* 2001; Polman 2000;). The find-spot of the axe was just 200 m away from the location where the commercial excavation company of the Faculty of Archaeology (*Archol*) in Leiden had carried out an excavation of an Iron Age site (site no. 1; Ball *et al.* 2001, 5-11). Even closer to the find-spot, there was another site recognized during the surveys (no. 2); Polman 2001), but this one did not yield a shred of evidence for Bronze Age occupation either.

The Susteren axe does not stand alone: in the Netherlands there are currently over 2000 bronze objects known, of which only a few have been found during professional archaeological excavation. For the southern Netherlands only 4 % are excavation finds.[1] This is remarkable given the fact that this region is known for its high number of excavations of Bronze Age settlements, barrows and entire cemeteries, sometimes resulting in the large-scale excavation of entire landscapes.[2] Among these uncontextualized bronze finds there are objects that rank among the most remarkable finds of the European Bronze Age, like for example the ceremonial dirk of Plougrescant-Ommerschans type that was found in Jutphaas (this book, chapter 6). That bronze objects are so rarely found in settlements and burial sites would at first sight be understandable in view of the general scarcity of bronze in a region like the southern Netherlands, hundreds of kilometres removed from the nearest sources of copper and tin (fig. 1.1). However, the numerous objects collected by amateurs and museums illustrate that such objects did circulate in considerable numbers in this region. Where, then, were all these objects found? Why did all this metal enter the archaeological record in the first place? After all, there is evidence that this region had a thriving bronze production of its own, drawing on recycling and importation of existing metal (Butler 1973). What is it about the sites at which bronzes entered the ground that they are hardly ever the locations we select for excavation?

This book will try to deal with a question that is perhaps the most significant one to be asked by archaeology: why did objects enter the ground? Are there ways to make sense of the fact that so much metal ended up in the ground? Why did this apparently take place in locations outside the ones best known to us, in places in the Bronze Age landscape that have so far failed to attract wider archaeological attention? Thus, the intention is to integrate the evidence on bronze finds in the wider picture of Bronze Age landscape use, structuration and perception.

In this chapter the research goals, the data and the spatial and chronological framework will be defined. First, however, a brief outline will be presented of current views on the significance of bronze objects and their deposition in specific places in the landscape.

1.2 The social significance of metalwork among European Bronze Age societies

Around the end of the third millennium BC, prehistoric communities in north-west Europe began to use, exchange and produce objects made of bronze. This period, roughly coinciding with the beginning of what is traditionally called the Bronze Age, was and still is seen as a crucial phase in the social evolution of European societies. It is also generally accepted that it was the very adoption of metalwork that set these developments in motion (Champion *et al.* 1984, 197). This notion goes back to the realization that the presence of –especially- bronze objects in many north-west European regions is in itself noteworthy. After all, a large part of north-west Europe is far removed from the natural occurrence of the main constituents of bronze, viz. copper and tin. Fig. 1.1 shows that southern Scandinavia, northern

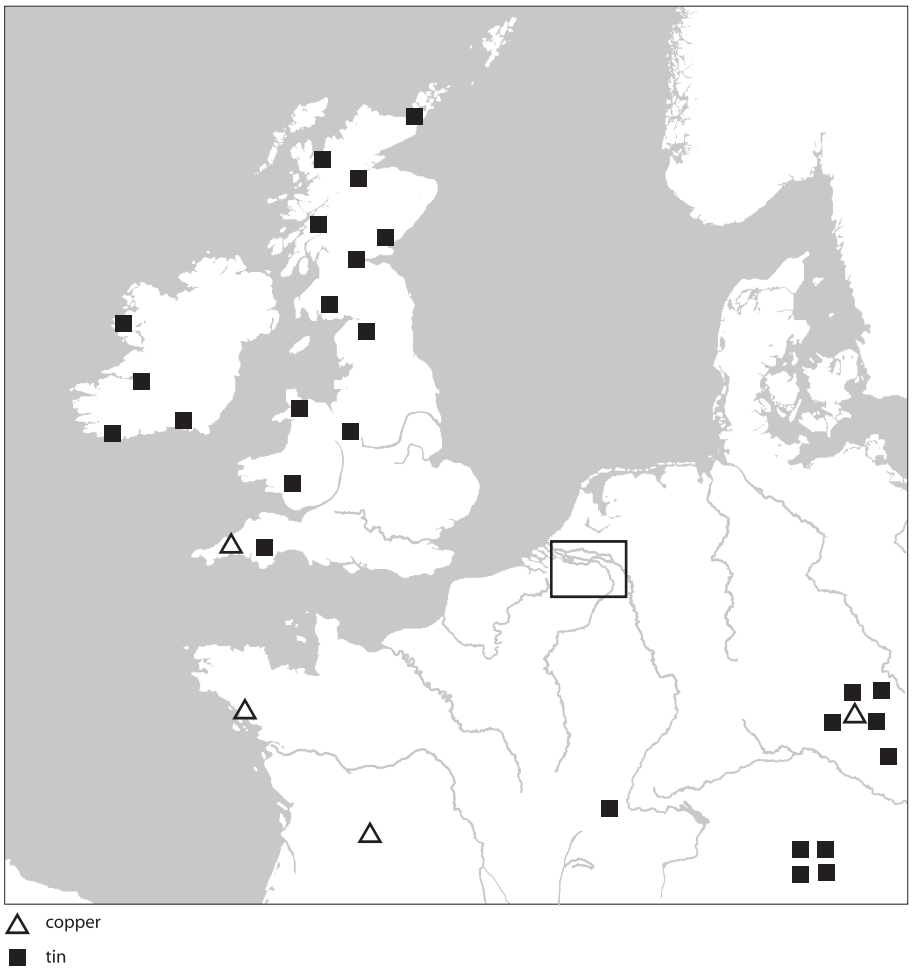

Figure 1.1 Copper and tin ore sources in north-west Europe and the location of the southern Netherlands (after Champion *et al.* 1984, fig. 6.11).

Germany, the Netherlands and Belgium all share this peripheral position. Nevertheless, since bronze is known to have been used in all these non-metalliferous regions throughout the Bronze Age, it must have been imported from abroad on a regular basis, as raw material or finished objects. Since long, it has therefore been argued that bronze circulated across wide areas, in increasing numbers and frequency as the Bronze Age wore on. Montelius (1910), Childe (1930) and others stated that for prehistoric societies to establish such a bronze circulation there had to be widespread and complex contact and exchange networks that covered large parts of Europe, connecting social groups hundreds of kilometres apart. Such circulation has of old been considered to represent some form of trade.[3]

Central to this idea is the assumption that bronze objects were crucial utilitarian implements in the first place, technologically superior to the stone tools they replaced and therefore in great demand (Childe 1930, 1, 4; Coles/Harding 1979, 16).

From the 1960s on, the interpretation of bronze circulation as trade and of bronzes as superior commodities came under fire. Renfrew (1969; 1972; 1973) rejected Childe's trade model as anachronistic on the basis of the point made by Polanyi and others (1957) that it is only in classical Greece that the first traits of a market economy can be recognized. It would be more in line with the nature of Bronze Age society to suppose that the main exchange transactions were gift exchanges (Renfrew 1973, 268; Sherratt 1972, 507).

The significance of bronze, so it was argued, would have been more in the symbolic than in the practical field. The point was made that since bronzes were rare and non-local objects in most north-west European regions, they must have been prestigious status objects in the first place (Sherratt 1976, 557; Randsborg 1973; 1974). Although the notion of a 'European bronze trade' did not disappear altogether (e.g. O'Connor 1980), bronze circulation now increasingly came to be seen as the exchange of symbolic prestigious items. This new interpretation has particularly become known by the influential studies of Rowlands (1980; 1994) and Kristiansen (1998).[4] Drawing on Marxist theories of gift exchange developed in anthropology, both authors argue that bronze objects circulated in what is termed a 'prestige goods economy'. It is fundamental to such an economy that individuals could achieve status and hence power by possessing such prestige goods and by controlling their supply and distribution. According to Rowlands (1994, 2), the overwhelming impression in many parts of Europe is of a network of dispersed élites that expanded their power through such highly ritualized exchange of prestige goods. In his 1998 book *Europe before history*, Kristiansen develops the argument that from approximately 2000 BC onwards the general need for metalwork created a dependency in terms of supplies of metal and know-how between different regions. The resulting expansion of international exchange accelerated the pace of change in regional cultural traditions, adding a new dimension to social change and tradition. A changed balance of international exchange relations might now affect local and regional polities hundreds or even thousands of kilometers away (1998, 3). One of the changes thought to be effected by unbalanced exchange relations is an increasing social hierarchization and the formation of more competitive alliance systems in the later part of the European Bronze Age (Rowlands 1980).

1.3 The phenomenon of bronze deposits and its interpretation as 'ritual consumption'

One of the most puzzling phenomena is that almost everywhere in Europe Bronze Age communities buried large numbers of these valuable bronzes in the ground, without ever retrieving them. Such 'depositions' of bronze are known from large parts of Europe (Louwe Kooijmans 2001, fig. 1; Hänsel/Hänsel 1997). Leaving behind so many valuable objects seems rather odd, particularly when it was practised in non-metalliferous regions. Numerous scholars have therefore tried to discover the logic behind this 'wasteful' activity (Coles/Harding 1979, 517).

Various interpretations have been offered in the course of the last 125 years, ranging from views that take it to be a non-problem to theories that consider bronze deposition as one of the most meaningful ritual practices (Bradley 1990: chapter 1; Verlaeckt 1995 chapter 3). A number of these interpretations will be discussed later on in this book (chapter 2). For the moment it suffices to describe briefly what can be seen as the most current and most widely accepted interpretation of bronze deposits. This is the theory which sees bronze deposition as a ritual act related to the prestigious value of metalwork. Deliberate deposition of such bronzes would have been regarded as some sort of offering: a gift to the gods. As such, it had an economic function as well: it would have served to create scarcity, thus maintaining the prestigious value of bronze in circulation. Kristiansen (1978; 1998) in particular has elaborated on how such a ritual consumption of bronzes was related to the construction and maintenance of the value of bronzes in circulation.

1.4 Problems in the current interpretation of bronze deposits: 'selective deposition'

The interpretation of bronze deposits as a form of ritual consumption is attractive in many ways. An important advantage of this interpretation is that bronze circulation is no longer understood as separate from bronze deposition; the two are seen as inextricably linked. However, there are also some problems with this interpretation. These become conspicuous if one studies bronze deposits in a more detailed way. It is to the problems that we must now turn.

It has long been attested that bronze deposition is no more than a general term concealing a tremendous variety. All sorts of bronze objects existed, ranging from efficient practical tools to the most elaborate ornaments or ceremonial objects. This alone makes it questionable to simply distinguish between bronzes that were 'commodities' or 'symbolic' objects. The German archaeologists Hundt (1955) and Von Brunn (1968) remarked that bronze deposition was a heterogeneous, but far from arbitrary practice. On the basis of regional studies, both scholars concluded that there were clear patterns in the way people deposited bronze objects. Particular types of objects were only observed in particular contexts, avoiding others. Also in the case of multiple object deposits (hoards), characteristic associations between object types were observed. For the southern Netherlands, an example is the deposition of swords during the Ha B2/3 phase. These were almost never deposited in burials, but were placed in major rivers in considerable numbers (Roymans 1991). Having recognized this, the authors assume that this implies that there was a 'taboo' on placing weapons in burials (Roymans/Kortlang 1999, 56). Apparently, depositional practices seem to have been structured: there were rules, prescribing which object should be deposited in which context. Such patterns have also been recognized on the British Isles (Needham 1989) and in Late Bronze Age Denmark (Sørensen 1984; 1987; 1991). Needham refers to such patterns in deposition as *selective deposition*, and I shall also use this term.

If deposition was patterned, how does this accord with the prevailing interpretation of bronze deposition as 'ritual consumption'? After all, what is fundamental in the 'prestige goods' interpretation is that the objects are made of the prestigious bronze. This, however, cannot explain why bronze deposition was selective. If it was just their metal content that counted in deposition, then we might expect that weapons for example were treated in the same way as ornaments. After all, both are made of the prestigious material bronze. But on the basis of patterns in deposition it can be observed that this was not the case, and that weapons and ornaments were as a rule not associated in deposition, but kept apart. How can we make sense of such patterns?

This question brings us to a more theoretical problem. Explaining bronze deposition as a prestige-enhancing practice merely says something about the social effect this particular practice must have had. It very much is an *etic* explanation. It does not make clear why the practice was constituted as it was (as a structured, selective deposition), only what it brings about. As such it is also a functionalist explanation, potentially applicable to a much wider range of object sacrifices than just those of the European metalwork. Although I do not want to play down the importance of its political-economic aspects, the prestige-good interpretation relegates deposition merely to an arena where prestige can be gained. It does not really give information on deposition itself: what was this practice? Why was it practised in the way it was? If we want to deal with such questions, we should be more concerned with what object deposition *meant* to the Bronze Age communities practising it. This brings us to the more specific *emic* meanings of metalwork. To us, the observation that deposition was selective and structured might serve as a clue for discovering such meanings. After all, if we are right in observing that swords were so strictly kept away from burials, but preferably deposited in major rivers, then there must have been some specific understanding of both swords and burials that made the two to be kept separate.

1.5 The southern Netherlands as a promising region for studying 'selective deposition'

In this book, I want to find out whether it is possible to make more sense of bronze deposition by studying the phenomenon of selective deposition. I want to do this not only by tracing patterns in deposition, but also by trying to integrate the evidence on bronze deposits with other fields of evidence on Bronze Age societies. The case of the axe find from Susteren may serve to exemplify the problem. The prevailing tendency has been to treat bronze deposition as a category in itself. It is hardly known how the locations where bronze was deposited fit within the wider cultural landscape of the Bronze Age.

Thus, in order to study selective deposition we do not only need a region with a high number of bronze finds from different contexts; we should also be relatively well-informed on other fields of practice of the communities in question. The southern Netherlands are a region that meets both requirements (fig. 1.2). Due to the work of Jay Butler and Brendan O'Connor it is clear that the southern Netherlands and Belgium have yielded an interesting array of metalwork finds.[5] It is of pivotal importance that there are strong indications that the bronze finds reflect selective deposition. I have already alluded to Royman's observation on the selective deposition of swords.

On top of that: there has been intensive collaboration in the southern Netherlands between amateurs, metal-detectorists and professional archaeologists. This has led to the situation that bronze finds are not only known from the major find-spots like rivers, but also in large numbers from the interior parts of the country. For many a region this is not the case.[6]

Another advantage of choosing the southern Netherlands as a region for study is that extensive excavations of Bronze Age sites have been carried out here (Gerritsen 2001, fig. 2.5). In the first place, the excavations of Bronze and Iron Age settlements carried out in and near Oss should be mentioned (Fokkens 1996). These rank among the largest excavated areas in Europe. Large-scale excavations of cemeteries were carried out in Nijmegen and in the interior of the southern Netherlands. The numerous recent excavations of well-preserved settlement sites and graves in the Betuwe should also be mentioned (fig. 1.3).[7] Moreover, the interior part of the region is well-known for its high number of barrows and urnfields, many of which have seen professional excavation (Theunissen 1999; Roymans 1991). The prospects for analysing bronze deposition as part of a much wider prehistoric landscape thus seem promising.

A major set-back is the lack of a complete catalogue of metalwork finds from the region. Butler has taken on the heavy task of making such a catalogue. But while this book is being written, only a part of Butler's catalogue has been published (a catalogue of axes and some hoards).[8] Also, the majority of the finds published by Butler and O'Connor (1980) has not yet been studied with an eye to their possible role in depositions. This implies that a lot of work still has to be done before a study of depositional practices can begin.

1.6 Research questions and spatial and chronological framework

The questions that are central to my research can now be formulated as follows:

1 Is there any evidence that permanent deposition of metalwork took place in the Bronze Age of the southern Netherlands?

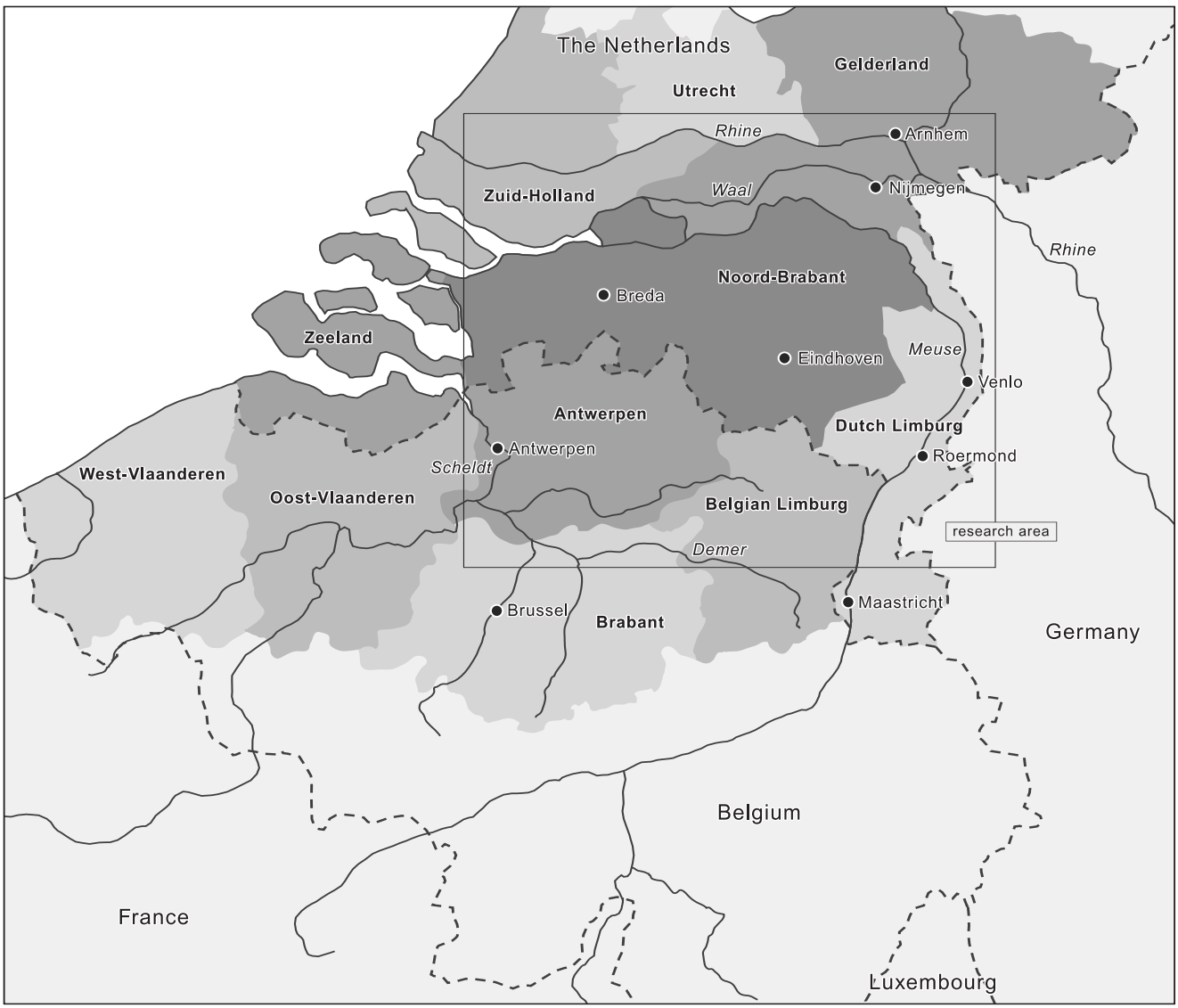

Figure 1.2 Provinces and important modern towns in the southern Netherlands and adjacent areas.

2 If so, which patterns in deposition can be observed among them? How was selective deposition structured?
3 How should we understand such patterns? Can we make sense of the meanings of objects from their role in selective deposition?

A brief description of the research area

I take the southern Netherlands to comprise the present-day provinces of Dutch Limburg, Noord-Brabant and Gelderland with the river Rhine as its northernmost boundary (fig. 1.2 and 1.3). Since the Dutch-Belgian border constitutes a quite arbitrary boundary, the Belgian provinces of Antwerpen and Belgian Limburg are also included, with the river Demer as the southernmost boundary. Thus, the region comprises what is often indicated as the 'Meuse-Demer-Scheldt' region (Roymans/Theuws 1999), to which the Dutch central river area has been added. This more or less comes down to a region that consists of a Pleistocene coversand plateau of some 250 kilometres (east-west) by 120 kilometres (north-south), bordered in the west, east and north by the major rivers Scheldt and Meuse (fig. 1.2). The northern river area is characterized by Holocene fluviatile clay cover-layers.

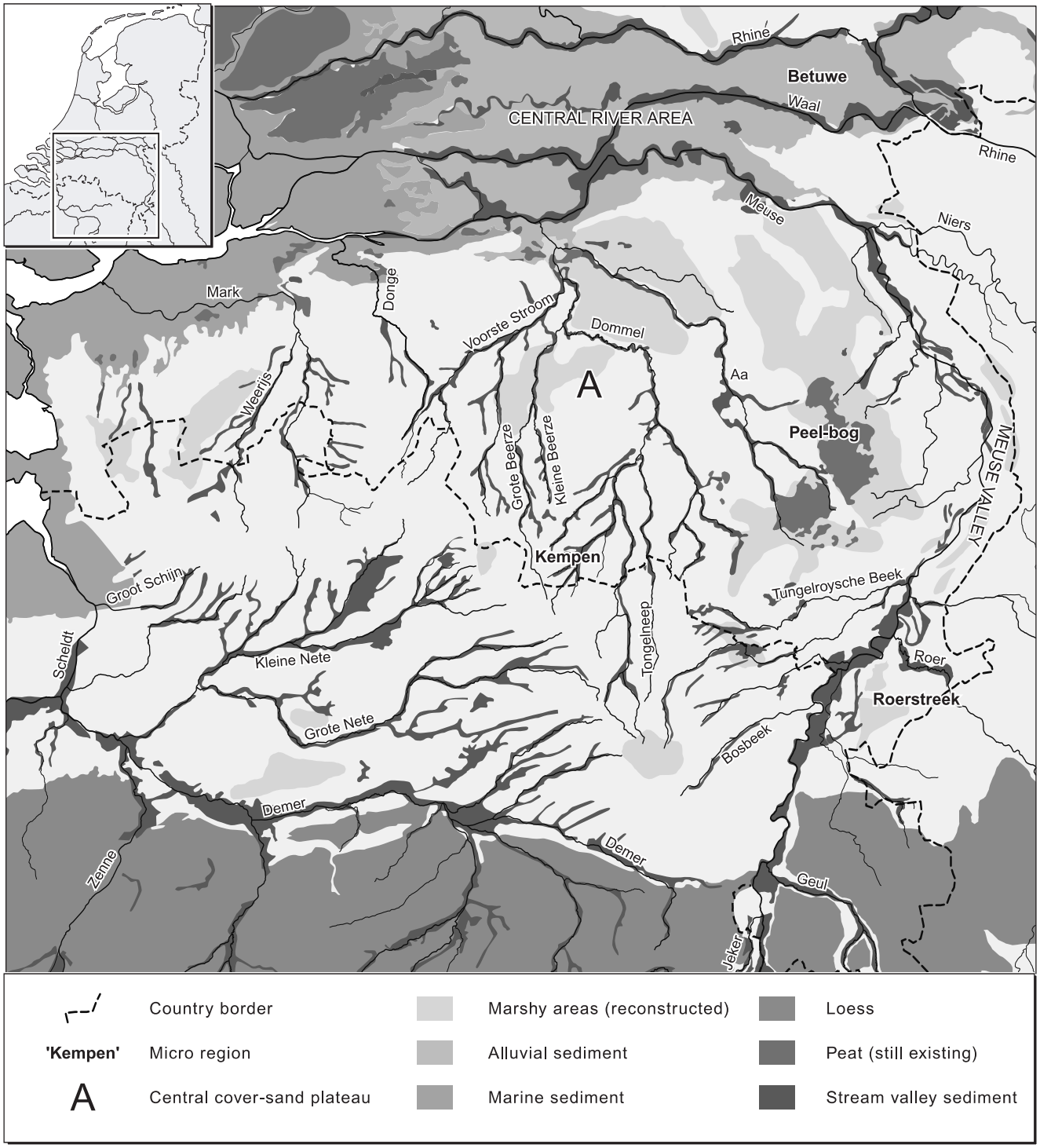

Figure 1.3 General map of the region indicating the most important environmental entities, streams, rivers and marshes and micro-regions.

In the southern part, Pleistocene loess sediment surfaces. I distinguish between three major zones in the landscape: the central coversand plateau, the Meuse valley, and the central river area (fig. 1.3).

The central coversand plateau consists of numerous sand ridges and small plateaus, flanked and defined by various stream valleys, marshes and fens. Although the region is nowadays known as a relatively 'dry' area, maps from the mid 19th century make it clear that it was covered by numerous marshes, fens and peat bogs (Theunissen 1999, 40 and references cited therein). The majority of these watery areas has disappeared due to the large-scale reclamations of the late 19th and early 20th century.[9] Micro-regions that will be referred to in this book are the *Kempen*, in the heartlands of the study area, Western Brabant, and the Maaskant micro-region. An important characteristic of the entire sand plateau is the presence of thick medieval *plaggen* soils, the so-called *essen*. These anthropogenic soils are of interest as they cover up entire areas, thereby often concealing and preserving prehistoric traces. Around the *essen*, there were traditionally heath lands.
These are the zones in which prehistoric barrows and urnfields have been left largely intact. The eastern part of the sandy plateau is marked by the largest peat bog of the southern Netherlands, the Peel.

The Meuse valley is characterized by Pleistocene terraces, generally subdivided in a lower (the present river-bed), a middle and a high terrace. In general, the middle terraces were the most favourable areas for agrarian settlement. All terraces are subdivided by smaller streams discharging in the Meuse. An important environmental element for this research is the presence of swamps that were generally situated on the transition from the middle to the high terrace (nowadays mostly reclaimed). For practical reasons, I distinguish between the micro-regions Northern Limburg (around Venlo), Middle Limburg (with Roermond as its centre), and southern Limburg. The latter region is characterized by loess and loamy soils.

The central river area consists of a complex of fluviatile deposits (Berendse/Stouthamer 2001). The recent excavations in this area have made it clear that many parts were intensively occupied in the Bronze Age. Due to the high water-levels, preservation circumstances are often very good in this area. Conspicuous parts in this landscape are the high and steep ice-pushed sandy ridges of Arnhem, Nijmegen and Rhenen, all of which were also inhabited during the Bronze Age.

Although it will be attempted to deal with the evidence of this entire geographical entity, the focus will be on data from the Dutch part. Reason for this is that the data from the Belgian part are much more biased towards areas outside the major river valley (this problem will be set out in detail in chapter 4). Therefore, I shall omit phrases like the 'Rhine-Demer-Scheldt region', and instead speak of the 'southern Netherlands'. The available evidence from the Belgian provinces of Antwerpen and Limburg will be incorporated in the research. For pragmatic reasons, I consider these regions as part of the southern Netherlands.

Remarks on the chronological framework
Chronologically, the entire Bronze Age will be covered (*c.* 2000-800 BC), as well as the preceding phase in which copper and bronze were first introduced, the Late Neolithic B (2500-2000 BC). Although the Early Iron Age in our region signals a general decrease in the use of bronze, in most aspects there is a direct continuation of what happened in the Late Bronze Age. For this reason, the Early Iron Age Hallstatt C- phase (Ha C) will also be discussed to place bronze deposition in a chronological perspective.

The Dutch chronology is illustrated in fig. 1.4 in relation to those of adjacent regions.[10] Unlike chronologies from other regions, the Dutch chronology is hardly based on metalwork evidence, but predominantly on developments in burial practices (Fokkens 2001). This is immediately apparent from the lack of overlap in phases like Middle Bronze Age B to the French and Belgian terminology of *Bronze final I-II*, which is determined by the typo-chronology of bronzes. The entire chronology of the Dutch Bronze Age illustrates how –in this case- burial evidence and metalwork finds have been treated separately. A fundamental problem for the Dutch bronzes is that they are mainly single finds, without associated datable finds and without ^{14}C-datings. Seriation of hoards, as recently successfully done by Vandkilde (1996) for Denmark, is impossible. There is no foundation for building a chronology on the basis of the finds from the region itself. This implies that we will have to work with typo-chronologies from other regions, mainly from northern France, Belgium, Middle Germany and the Nordic area. This generally results in long dating ranges, making it often difficult to assess whether specific types of bronzes were contemporary to nearby settlements or graves. At the moment this cannot be remedied. For that reason, in discussing objects from for example the Middle Bronze Age B, attention will be paid to the different dating ranges of the object types involved, and in what way they constrain the identification of contemporary patterns.

1.7 How the problem will be approached

Essential to the present study is the collection of a representative database. The existing syntheses of Butler (1963) and O'Connor (1980) are no longer up-to-date, not only with regard to typochronological interpretations, but also because of the large number of new finds. There is nothing in the way of a more recent synthesis. Butler and Steegstra

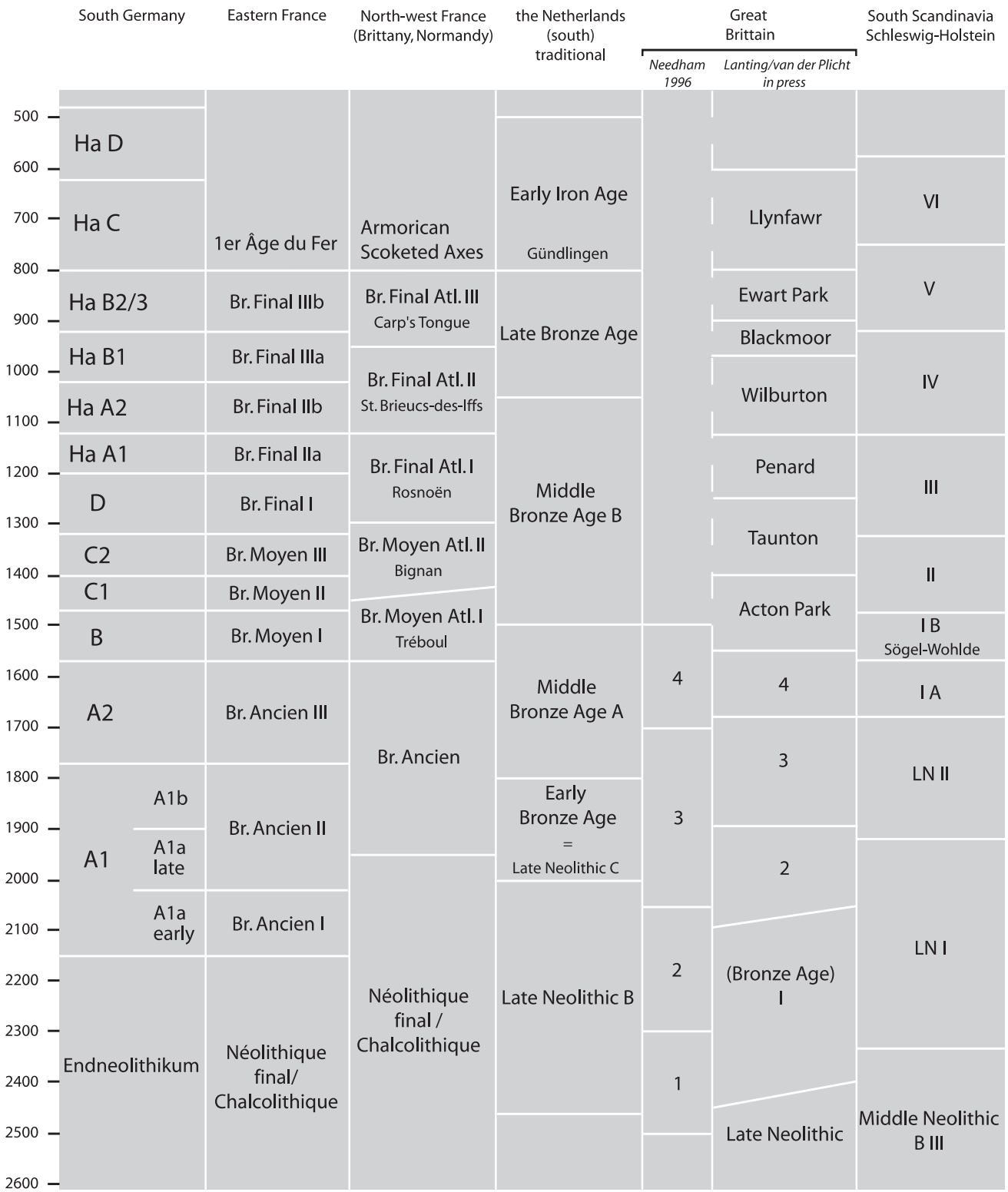

Figure 1.4 Chronological terminology of north-west European regions in use for the period under study (2500 - 500 BC). Based on Fokkens 2001 (the Netherlands), Lanting/Van der Plicht in press, Needham 1996 (Britain) and Vandkilde 1996 (south Scandinavia from LN 1 to Period IB).

(University of Groningen) are currently working on the publication of a new database of the Dutch finds, some parts of which have already been published (Butler 1990 (Early and Middle Bronze Age hoards), Butler 1995/1996 (flat and flanged axes) Butler/Steegstra 1997/1998 (palstaves); idem 1999/2000 (winged axes) and in press (socketed axes)). I did not want to duplicate their efforts by bringing out another catalogue. Instead, a useful form of cooperation developed. I carried out a detailed survey of the literature and studied two important museum collections (see chapter 4 for a more detailed description) and checked my results with those of Butler and Steegstra. The confrontation of our results led to a rich database, as both parties appeared to have been fuelled by different amateur and information networks on recent finds. Butler and Steegstra focussed on the detailed study of typo-chronology of finds and the retrieval of all existing records on individual finds. This made it possible for me to focus on the analysis of the find context of bronzes, to pave the way for a study on the role of these objects in deposition. For a detailed find catalogue in the classic sense, the reader is referred to Butler and Steegstra's publications mentioned above, and forthcoming ones. This book will publish all used data, with specific attention to those variables that are thought to be important (see appendices).

In order to structure the discussion, the book is divided into three parts. Part I introduces the problem in question (this chapter), how to approach it (chapter 2 and 3), and it discusses the limitations and possibilities of the available evidence (chapter 4).

Part II presents the data in chronological order, following the approach set out in chapter 3 and 4. For every period, an outline is given of the most important developments taking place (chapters 5 to 9). For pragmatic reasons, the burial finds of the Late Bronze Age/Early Iron Age urnfields are discussed in a separate chapter (chapter 9). In part II, two of the three research questions are dealt with: (1.) did ritual deposition of metalwork take place, and (2.) if so, what patterns can be observed?

Part III will deal mainly with the third research question: how should we understand such patterns in selective deposition? This part starts with a chapter in which a general outline is given of the main characteristics of selective deposition in the southern Netherlands, how it was structured, and how it developed through time. In the following chapter, separate themes that were relevant to deposition are dealt with from a long-term perspective: these are the deposition of weapons (chapter 11) , ornaments (12), and axes (13). Then the attention shifts from objects to context. In chapter 14, the question is broached how depositions structure the landscape. Finally, chapter 15 brings together the different threads of thought developed in this part, and places the findings in a wider context.

notes

1 Large objects like axes, swords, spears and ornaments are mentioned here. In Late Bronze Age urnfields, a minority of the graves contains small and often fragmented parts of ornaments or dress fittings (this book, chapter 9). These are not included here.

2 Fokkens 1996; Gerritsen 2001, fig. 2.5; Lohof 1991; Roymans/Fokkens 1991; Theunissen 1999.

3 Butler 1963; Childe 1930; Clark 1952, 256; Déchelette 1910, 406; De Navarro 1925; Hawkes 1940; Pauli 1985; Sommerfeld 1994; Stjernquist 1965/1966.

4 Other examples are Bradley 1984; Frankenstein/Rowlands 1978; Larsson 1986; Parker Pearson 1984; Thorpe/Richards 1984; Shennan 1986a; 1986b.

5 Butler 1963; 1987; 1990; 1995/1996; Butler/Steegstra 1997/1998; 1999/2000; in press; O'Connor 1980.

6 A case in point is the west-Belgian province of Oost-Vlaanderen, adjacent to the study area. Verlaeckt (1996) has recently published an impressive survey of the metalwork finds from this province. The overwhelming majority are from the river Scheldt and were collected in the early 20th century. Not much bronze finds are known from the area beyond the river valley. However, the high number of Bronze Age find-spots (especially barrows) makes it clear that people did inhabit this area (Ampe *et al.* 1996).

7 Nijmegen: Fontijn 1996a and b; recent urnfield excavations in the sandy parts of the southern Netherlands: see the contributions in Theuws/Roymans 1999; Betuwe: for example: Jongste 2002; Meijlink 2001.

8 Butler 1995/1996; Butler/Steegstra 1997/1998; Butler/Steegstra 1999/2000 and in press.

9 *Grote Historische Atlas van Nederland. 1: 50.000. 4 Zuid-Nederland 1838-1857* and *Grote Historische Provincie Atlas 1: 25.000. Limburg 1837-1844* (both Wolters-Noordhoff Atlasproducties), Goningen. The geographical background used for the find-distribution maps in this book (chapter 5 and further) shows the extension of swamps before their reclamation as known from these historical maps.

10 The chronology of the Bronze Age used here is the one introduced in the synthesis of Dutch prehistory (Fokkens 2001; Louwe Kooijmans *et al.* in prep.; Theunissen 1999, 54). When the first draft of this book was completed, Jan Lanting (University of Groningen) kindly provided me with the draft of an article which proposes a new chronological terminology for the Dutch Bonze Age (Lanting/van der Plicht in press). A lack of time prevented me from discussing the implications of this new chronological system. The new datings of the German and French chronology are already drawn from this article, but for pragmatic reasons I did not apply the new chronological terminology.