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# Multiple Choices – Mortuary practices in the Low Countries during the Mesolithic and Neolithic, 9000–3000 cal BC

By Leendert P. Louwe Kooijmans

*Schlagwörter:* *Belgien – Niederlande – Luxemburg – Neolithisierung – Kontinuität/Diskontinuität – Bestattungssitten – Radiokarbondatierung – Michelsberger Kultur – Bandkeramische Kultur – Swifterbant Kultur – Hazendonkgruppe – Seine-Oise-Marne-Kultur – Vlaardingen-Gruppe – Trichterbecherkultur – Mesolithikum – Neolithikum*

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*Mots-clés:* *Belgique – Pays-Bas – Luxembourg – néolithisation – continuité/discontinuité – rites funéraires – datation par le radiocarbone – culture de Michelsberg – Rubané linéaire – culture de Swifterbant – groupe de Hazendonk – Seine-Oise-Marne-Kultur – groupe de Vlaardingen – culture des Gobelets en entonnoir – Mésolithique – Néolithique*

## Introduction

### The Mesolithic–Neolithic transition

The Mesolithic–Neolithic transition in the Low Countries is characterised by a long lasting North–South contrast between the agrarian “Danubian” communities of the loess zone in the South and the communities in the wide sandy plain and wetlands to the north of it. The adoption of typical ‘Neolithic’ elements by the hunter-gatherers appears to have been a very gradual process, starting with the arrival of the first farmers in the loess zone of Limburg c. 5300 cal BC and lasting nearly two millennia. Communities with a distinct component of the exploitation of a wide range of wild resources in their subsistence – known as the Vlaardingen group – continued in the wetlands of the Rhine/Meuse delta even up till Beaker times, c. 2500 cal BC<sup>1</sup>. This ‘neolithisation’ of the indigenous communities comprised all aspects of society. Although subsistence shift is the most convenient criterion to formally separate the Mesolithic from the Neolithic, we follow Hodder in his arguments that the domestication of plants and animals is only one aspect of a much more fundamental mental change that is reflected in every aspect of life: the idea that one can live in a self-made ‘domestic’ world, which contrasts to the wild environment or ‘agrios’ beyond<sup>2</sup>. People

<sup>1</sup> For a full discussion see LOUWE KOOIJMANS 1998; <sup>2</sup> HODDER 1990. 2007.

ceased to live in nature by exploiting it, but instead created their own local environment with new rules and traditions and started to structure a landscape of fields, meaningful places and monuments. The roots of this new attitude to nature may have been considerably older, but it was fully expressed for the first time at the onset of the first agricultural societies in the Near East. This new mental, social and economic complex was brought, in a fully developed state, from the South-east into Central and Western Europe in the form of the Linear Pottery culture, one of the societies – if not the society – inspiring Hodder to his revolutionary new view. The ‘model Neolithic’ organisation of the Linear Pottery culture and its contrast to the traditional way of life of the northern communities is one aspect, which helps us to understand the apparent reserves of the latter to eagerly adopt the new ‘mode de vie’.

The boundary between Mesolithic and Neolithic easily can be drawn as a sharp line, if using a single criterion like a certain percentage of bones from domestic animals in the faunal spectra. This does not mean, however, that ‘a long story can be cut short’<sup>3</sup>, since the story of neolithisation is more than just passing such an artificial boundary. Neolithisation is also expressed in material culture, in (the logistics of) the settlement system, in deposition traditions and in the treatment of the dead. The last aspect is the topic of this paper and I will focus on the following questions: are there any trends, systematic changes in burial customs that are related to the new life style? Can these be traced in spite of the haphazard preservation of graves and human remains, due to the wide differences in natural conditions and burial customs?

### Uncovering the evidence

Up till World War II our view on Neolithic society was rather simple. Two zones had been made out: in the south that of the Linear Pottery succeeded by the Michelsberg culture was in the middle with its flint mines and earthworks, and in the north the Funnel Beaker zone with its *hunebedden* in the North. Radiocarbon dating, especially after calibration, revealed however a considerable chronological gap between the southern and northern phenomena. This gap has gradually been filled by field research in the Post-War Period, demonstrating completely new culture groups like Swifterbant as the western counterpart of Ertebølle, Blicquy to the west of Rössen, Vlaardingen and ‘Stein’ in between Seine-Oise-Marne and Funnel Beaker. The start of the Neolithic has been complicated by the new, western phenomena of La Hoguette and Limburg, and a Hazendonk (culture) group has been identified between Swifterbant and Vlaardingen. Especially the wetlands of the central and western Netherlands, with their excellent preservation conditions, produced crucial evidence for our understanding of the period concerned (*Fig. 1*)<sup>4</sup>.

<sup>3</sup> E. g. the ‘Zvelebil/Rowley-Conwy criterion’ of 50% bones of domestic animals (ZVELEBIL 1986; Contra RAEMAEEKERS 2003).

<sup>4</sup> For an overview see chapters in LOUWE KOOIJMANS et al. 2005.

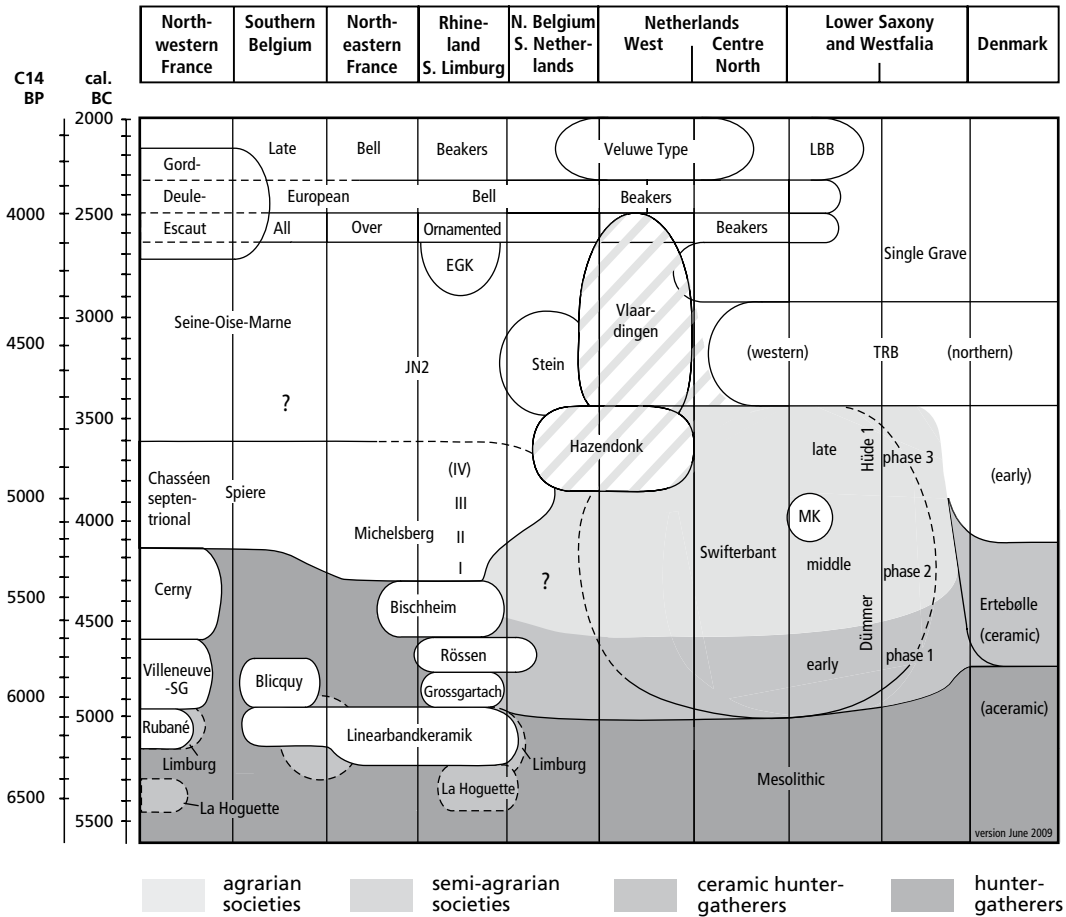


Fig. 1. Chrono-geographical scheme of the Neolithic of the Lower Rhine Basin and its surroundings.

Geographical differentiation of evidence (Fig. 2)

The spatio-chronological framework is now more or less well established, without major gaps, but the evidence still is and – in view of the widely different natural conditions – always will be very unevenly spread. It is up to us to overcome this handicap and to come to a general view of the traditions and their changes in this period.

The most striking aspect of the totality of the recorded mortuary practices in the studied spatio-temporal section is the wide diversity and the seemingly restricted diachronic trends. Our data set surely only covers a very small proportion of the former population and much of the data should be considered as rather incidental.

Human burials have been found in the Ardennes caves and rock shelters from the 19<sup>th</sup> century onward<sup>5</sup>, but their factual meaning has only become apparent due to modern excavation and a large-scale dating programme. This has lead to an interesting corpus of 118 <sup>14</sup>C dates from 43 sites<sup>6</sup>.

<sup>5</sup> MARIËN 1952, esp.114–125; DE LAET 1974, esp. <sup>6</sup> TOUSSAINT 2002. 203–210.

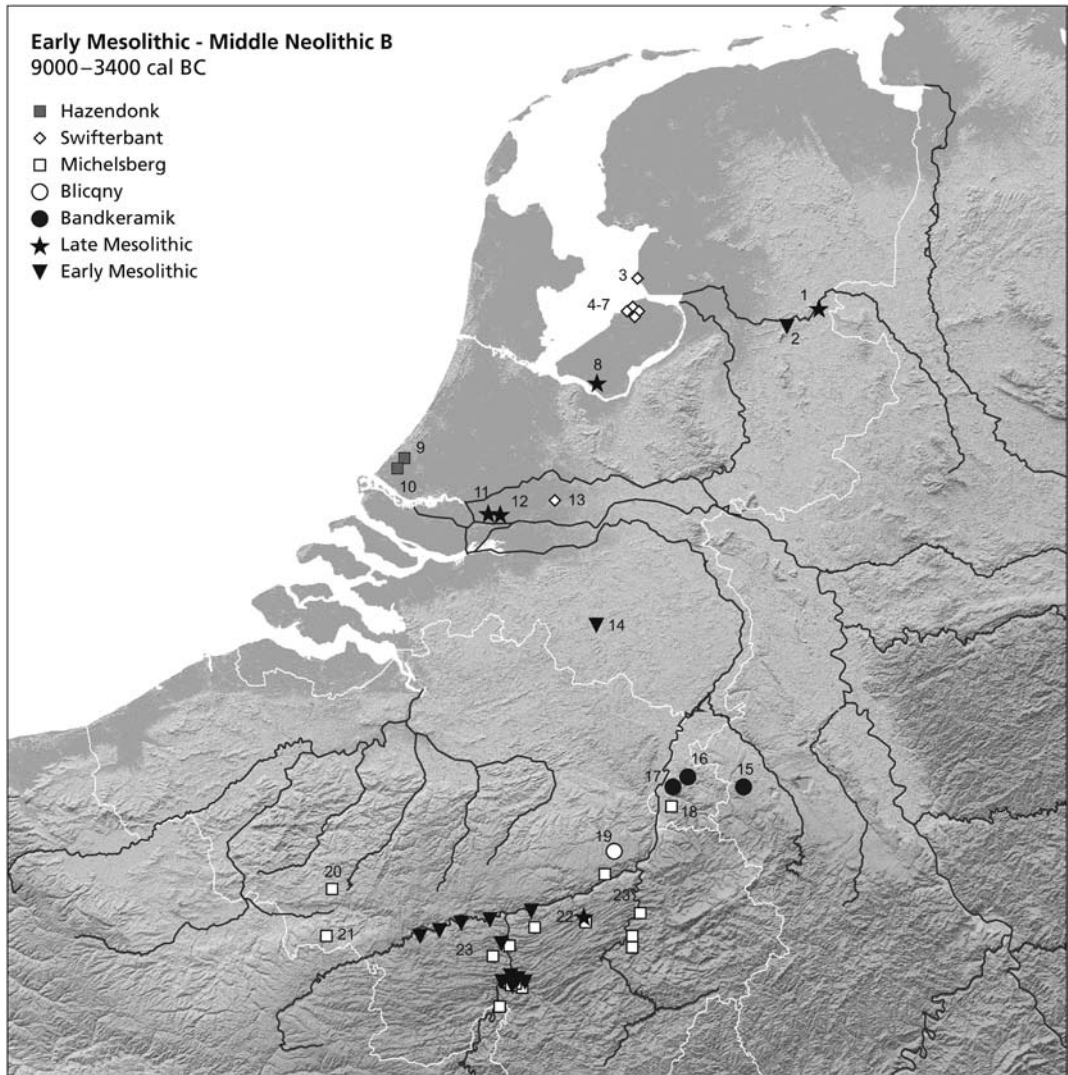


Fig. 2a. The Lower Rhine Basin with the sites mentioned in the text: 1 Mariënborg, 2 Dalfsen, 3 Urk, 4-7 Swifterbant, 8 Hoge Vaart, 9 Ypenburg, 10 Schipluiden, 11 Hardinxveld-De Bruin, 12 Hardinxveld-Polderweg, 13 Zoelen, 14 Oirschot, 15 Niedermerz, 16 Geleen, 17 Elsloo, 18 Rijckholt, 19 Darion, 20 Thieusies, 21 Spiennes, 22 Modave-Trou Al'Wesse, 23 10 different Early Mesolithic and 8 different Middle Neolithic (MK) cave sites.

We owe this material to the particular preservation and recovery conditions in the protected calcareous environment of the caves as well as to the attraction of these environments for archaeological research from the 19<sup>th</sup> century onwards. The dates are concentrated in distinct phases: the Early Mesolithic, the Michelsberg culture and most prominently in the Seine-Oise-Marne phase. The Early Mesolithic dates are separated by a period of more than three millennia from the Michelsberg culture dates, during which the caves were not used for burial purposes. Only seven dates have younger results (Bell Beaker, Bronze Age). This, however, does not prove continuity, since these can easily be explained by errors or contamination, through the lack of archaeological control. Only seven out of 56 caves produced dates of more than one period. So we should not consider this custom as a long lasting tradition, but as a repeated, independent use in different cultural contexts. A small series of dolmens supplement the younger cave burials (*Table 1*).

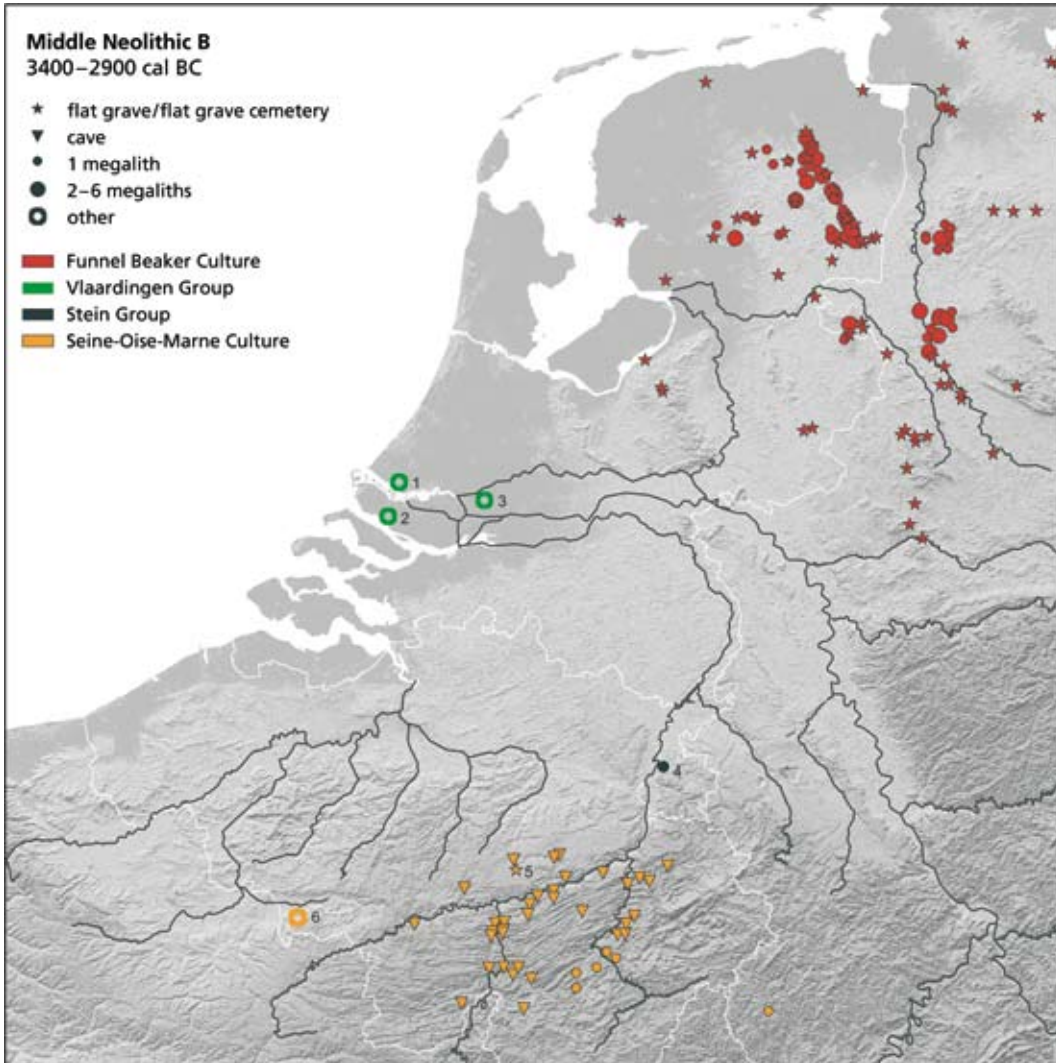


Fig. 2b. The Lower Rhine Basin. Sites with mortuary evidence, Middle Neolithic B, 3400–2900 cal BC. 1 Vlaardingen, 2 Hekelingen, 3 Hazendonk, 4 Stein, 5 Avennes, 6 Spiennes.

In the loess zone the cemetery of Elsloo with 113 recovered burials<sup>7</sup> gives us a detailed view on Linear Pottery burial traditions, with similar evidence from the Niedermerz cemetery with 112 burials, close by in the German Rhineland<sup>8</sup>. Evidence from later stages is extremely rare and restricted to a single Blicquy burial at Darion<sup>9</sup>, a skull deposition in the Rijckholt flint mines and some human remains in Michelsberg enclosures<sup>10</sup>. The unique burial vault at Stein (Limburg) is the only document for the Post-Michelsberg period<sup>11</sup>.

<sup>7</sup> MODDERMAN 1970. He assumes that c. twelve burials will have been missed, which brings the total extent of the cemetery at c. 125 graves.

<sup>8</sup> DOHRN-IMMIG 1983.

<sup>9</sup> JADIN et al. 1989.

<sup>10</sup> Rijckholt: RADEMAKERS 1998. A second skull with mandible and a skull fragment were found earlier (1923 and around 1930) without context in the small gorge called Schoone Grub, where the mines are located.

<sup>11</sup> MODDERMAN 1964.

	Meso			southern					northern			
	EM	MM	LM	LBK	BL	MK	SOM	St	Sw	Haz	VL	TRB
<b>data</b>												
caves	8	-	1	-	-	19	47	-	-	-	-	-
monuments	-	-	-	-	-	-	3	1	-	-	-	76*
individuals (flat graves)	-	2	4	113	1	x	3	-	33	49	5	>44
scattered remains	-	-	90	-	-	x	-	-	45	44	x	x
<b>body treatment</b>												
inhumation / deposition	x	-	x	x	x	x	x	-	x	x	-	xx
cremation	-	2	x	x	-	-	-	x	-	-	x	x
scattered remains	-	-	x	-	-	x	-	-	x	x	x	-
<b>body posture</b>												
stretched	-	x	x	-	-	x	x	-	x	x	-	?
flexed / crouched	-	-	x	x	x	x	x	-	-	x	-	x
tightly flexed	x	-	-	-	-	-	-	-	-	x	-	-
seated	-	-	x	-	-	-	-	-	-	-	-	-
<b>collectivity</b>												
single	-	x	x	x	x	x	-	-	xx	xx	x	xx
multiple	-	-	-	-	-	x	-	x	x	x	-	?
collective	xx	-	-	-	-	x	xx	x	-	-	-	xxx
<b>location</b>												
on settlement site	-	-	x	x	-	x	-	-	x	x	x	-
isolated	-	x	-	-	x	-	-	-	x	-	-	-
cemetery	-	-	?	xx	-	-	-	-	x	x	-	xx
cave	xxx	-	x	-	-	xx	xxx	-	-	-	-	-
burial vault	-	-	-	-	-	-	xx	x	-	-	-	xxx
<b>grave goods</b>												
(dress) ornaments	o	o	o	o	x	o	x	o	x	x	o	x
formal grave gifts	o	o	o	xx	xx	x	xx	x	o	(x)	o	xxx
<b>orientation</b>				SW-NE								W-E
<b>dogs</b>			x							x		

\*53 preserved, 23 demolished

Tab. 1. Chronology and cultural context versus documented parameters of mortuary practices.

The coversand landscape of northern Belgium and the southern Netherlands produced no more than a single Mesolithic cremation and no Neolithic evidence at all, which is in sharp contrast to the rich later burial evidence for the Bronze and Iron Age in the form of barrows and urn fields.

The situation on the upland farther north is up to c. 3450 cal BC very similar: one Mesolithic cremation and some enigmatic Late Mesolithic pits, which were interpreted as graves by the excavator<sup>12</sup>. This contrasts with the Funnel Beaker phase, represented by over fifty still surviving *hunebedden* and over 20 single flat graves and flat grave cemeteries with up to ten burials<sup>13</sup>. Almost none, however, produced any skeletal remains, as a result of the decalcified and acid soil conditions.

<sup>12</sup> VERLINDE 1974; VERLINDE/NEWELL 2006; VERLINDE 2005. <sup>13</sup> A recent extensive survey of TRB flat graves is KOSSIAN 2005.

The most valuable for our knowledge of burial traditions are the sites in the delta wetlands. There is detailed Late Mesolithic evidence from both Hardinxveld sites<sup>14</sup>. The Swifterbant tradition is documented in a series of small flat grave cemeteries in the central IJsselmeer region<sup>15</sup>. The Hazendonk phase is represented by two sites in the coastal district near The Hague, one of which is an impressive cemetery with 31 graves<sup>16</sup>. Vlaardingen evidence is very restricted.

A remarkable series of human skulls and long bones has been recovered from the deposits of the main rivers. Most were found in the course of dredging operations and, as such, lack any context. However, a few come from open quarries, as at Deventer-Koerhuisbeek, where stratigraphy suggests an Atlantic or even Boreal Age. Morphology ('Téviec type') and robustness have been used as arguments for a Mesolithic and even Upper Palaeolithic date. They even have been presented as early 'River Valley People'. The use of the fluorine content of the bones as a dating argument has been criticised though and a few radiocarbon dates prove that the material comprises at least a considerable number of historical remains, as was argued earlier and is according to expectation. This does not imply that all skulls are relatively recent. New <sup>14</sup>C dates could prove that some may very well date back to the period under consideration here and link up with the finds from sites like Hardinxveld and the Funnel Beaker skeletal parts from the Hunte (Lower Saxony), mentioned below<sup>17</sup>.

### The evidence by phase

#### Early and Middle Mesolithic, 9000–7000 cal BC

In the systematic dating programme for the Ardennes caves a series of 26 dates indicate that ten human bone assemblages date to the Early Mesolithic, c. 9000–7500 cal BC<sup>18</sup>. They centre on Namur and Dinant and all produced skeletal remains of more than one individual, the total being at least 36. They are evidence for the idea of a careful placement of dead bodies in more or less remote places, outside the daily circulation of living people, the evidence being preserved thanks to the special conservation in the fills of the caves used. It is remarkable that the custom is restricted in time, while occupation in that area continued into the successive millennia. There is only a single assemblage dated to the end of the Late Mesolithic, Trou Al'Wesse, c. 5500 cal BC. It is argued that absence of Middle and Late Mesolithic skeletal material has no explanation in research factors, and that it is true evidence for changes in prehistoric society. Vanmontfort suggests a link with shift in the occupation pattern. One can imagine that the 'karstic zone' with its rock shelters and caves became outside their reach and that other (open air) locations were chosen for the disposal of the dead<sup>19</sup>.

The assemblages show a wide diversity in many respects. The ritual may be individual or collective<sup>20</sup>, the bodies could have been brought into the dark of the caves or placed in the entrance or within a rock shelter, they might have been buried in a pit or lain down on the surface, they can

<sup>14</sup> LOUWE KOOIJMANS 2001a,b; 2003.

<sup>15</sup> RAEMAEEKERS et al. 2007.

<sup>16</sup> Ypenburg: KOOT/VAN DER HAVE 2001; KOOT et al. 2008. Schipluiden: LOUWE KOOIJMANS/JONGSTE 2006.

<sup>17</sup> HUIZINGA 1957/59; BOSSCHA ERDBRINK et al. 1979 and their earlier publications; LANTING/VAN DER PLICHT 1995/96, 90–91.

<sup>18</sup> TOUSSAINT 2002.

<sup>19</sup> VANMONTFORT 2007.

<sup>20</sup> Both occur in the same rock shelter of Abri des Autours, be it separated by some centuries in the <sup>14</sup>C dates: CAUWE 1995. The complex nature of the multiple depositional and taphonomic processes is illustrated in CAUWE 1996.

be in a full state of disorder due to various of taphonomic processes or largely in anatomical articulation. Some bones seem to be moved apart to make space for later interments and in some instances manipulation of bones has been identified. No possible grave goods have been detected except perhaps for one or two flint blades, but in some occasions red ochre powder was applied<sup>21</sup>.

To the north of this rich evidence only two sites with human remains are known, both are cremations, dated to the Middle Mesolithic. A small concentration (diameter c. 50 cm) of cremated human bone fragments in the Middle Mesolithic flint scatter of Oirschot V was dated by means of a <sup>14</sup>C date of charcoal from the same concentration (Gr-14506 7790 ± 130)<sup>22</sup>. This may have been an *in situ* cremation, comparable to the Late Neolithic cremation of Hekelingen (see below). The second site is Dalfsen, where cremated human bones were found in one out of c. 15 small, charcoal containing, Mesolithic ‘fire-pits’<sup>23</sup>. The find at least documents the cremation tradition in the Middle Mesolithic, but it is unlikely that the pit itself should be considered as a ‘burial’. The cremated human bone is most probably in secondary position. The lack of evidence for inhumation graves might be explained by their archaeological invisibility under conditions where skeletal material is not preserved and by the absence of grave goods.

Although cremations generally are considered alien to the Mesolithic, this appears not to be completely the case. They are however a rare phenomenon. Grünberg listed only ten sites all over Europe, and Toussaint mentions two additional examples from Loschbour (Luxemburg) and Chaussée-Tirancourt, on the southern edge of our study area<sup>24</sup>.

#### Final Mesolithic, 5500–5000 cal BC

Late Mesolithic customs in burial and body treatment are documented in detail at both Hardinxveld sites. Hardinxveld-Polderweg offers two inhumations, one of an elderly female person, buried extended on her back, without any grave goods (*Fig. 3*)<sup>25</sup>. The other is a concentration of inarticulated human bones, presumably of one individual. These might be either the remains of a disturbed formal burial or of an exposed body, preserved by the Holocene sediment cover. Most remarkable are 76 scattered human skeletal parts, comprising a minimum of six individuals, found between the masses of domestic refuse from the main phase 1 of the site, dated to 5500–5300 cal BC (*Fig. 4*). They were not only lying on the dune’s slope, but also found in-between the objects in the adjacent marsh deposits, a zone considered as a toss zone, into which broken and damaged implements and other objects were intentionally thrown and discarded. Long bones and even human skulls were found up to 8 m from the then water’s edge. Slope wash or any other natural process can thus be excluded as an explanation for their occurrence. These bones are clear evidence of a ‘tradition resulting in scattered remains’, which – as we will see – is also documented for later phases. One option is the exposure of bodies to the elements, but some distinct cut marks on one *clavicula* suggest the practice of excarnation. The tradition may, on the other hand, be linked to the custom of ‘exposure of bodies at special locations’ and the option of manipulation of skeletal elements, as documented for the preceding Early Mesolithic by the Ardennes caves.

Both burials at Hardinxveld-De Bruin are of adult males, one stretched on his back, the other in a seated posture in a grave of beehive form<sup>26</sup>. A similar burial type is suggested for six cylindrical pits at Marienberg, located in a Late Mesolithic activity area with many hundreds of ‘fire pits’.

<sup>21</sup> TOUSSAINT 2002, 147–149.

<sup>22</sup> ARTS/HOGLAND 1987.

<sup>23</sup> VERLINDE 1974. The <sup>14</sup>C dates are rather divergent, but a Boreal age, based on the (mainly pine) identifications of the charcoal, seems to be undisputed.

<sup>24</sup> GRÜNBERG 2000, 51 Abb. 45; TOUSSAINT 2002, 160.

<sup>25</sup> SMITS/LOUWE KOOIJMANS 2001a.

<sup>26</sup> SMITS/LOUWE KOOIJMANS 2001b; also: LOUWE KOOIJMANS 2003.



Fig. 3. Hardinxveld-Polderweg phase 1, female burial, Late Mesolithic, 5500–5300 cal BC.

These ‘graves’ have not been dated directly, but only indirectly to c. 5100 cal BC by charcoal from five fire pits in the immediate vicinity<sup>27</sup>. The interpretation as graves is – by the lack of preserved skeletal material in the acid sands – based on a red ochre (?) colouring of the bases of the pit fills, the incidental occurrence of exceptional artefacts, esp. three arrow shaft polishers and the exceptional form of the pits. There are, however, counter arguments as well: a small cemetery of ‘seated’ burials would be unique and burial goods other than dress ornaments would be quite exceptional in the Mesolithic. Arrow shaft polishers are unparalleled as Mesolithic grave gifts<sup>28</sup> and none of the presumed grave goods was placed on the bottom of the pit. A possible alternative interpretation is that these pits were used for some special activity such as the processing of hides, which might have involved the use of red ochre and polishing stones rather than fire.

The informal treatment of human bodies resulting in scattered remains continued into the early stages of the Swifterbant culture, up till c. 4450 cal BC, as documented by the occurrence of some skeletal parts in the upper levels of both Hardinxveld sites<sup>29</sup>. Five human fragments – one the lower jaw of a child – were identified at the Early Swifterbant site Hoge Vaart, where, due to the local conditions, only calcined bone was preserved<sup>30</sup>. An aspect clearly related to human burial

<sup>27</sup> The occurrence of some human bone fragments in the settlement waste contained and of some possibly secondary burnt fragments above the ochre layer in the pits is used in support of the grave interpretation, VERLINDE/NEWELL 2006, 132; 168; VERLINDE 2005.

<sup>28</sup> Cf. GRÜNBERG 2000, 114 and Abb. 62. It is questionable to what extent the flint artefacts from the pit fills may be considered as intentionally deposited.

<sup>29</sup> SMITS/LOUWE KOOIJMANS 2001a, Table 14.3 (three remains); 2001b Table 13.1 (seven remains).

<sup>30</sup> LAARMAN 2001, 11 and 61.

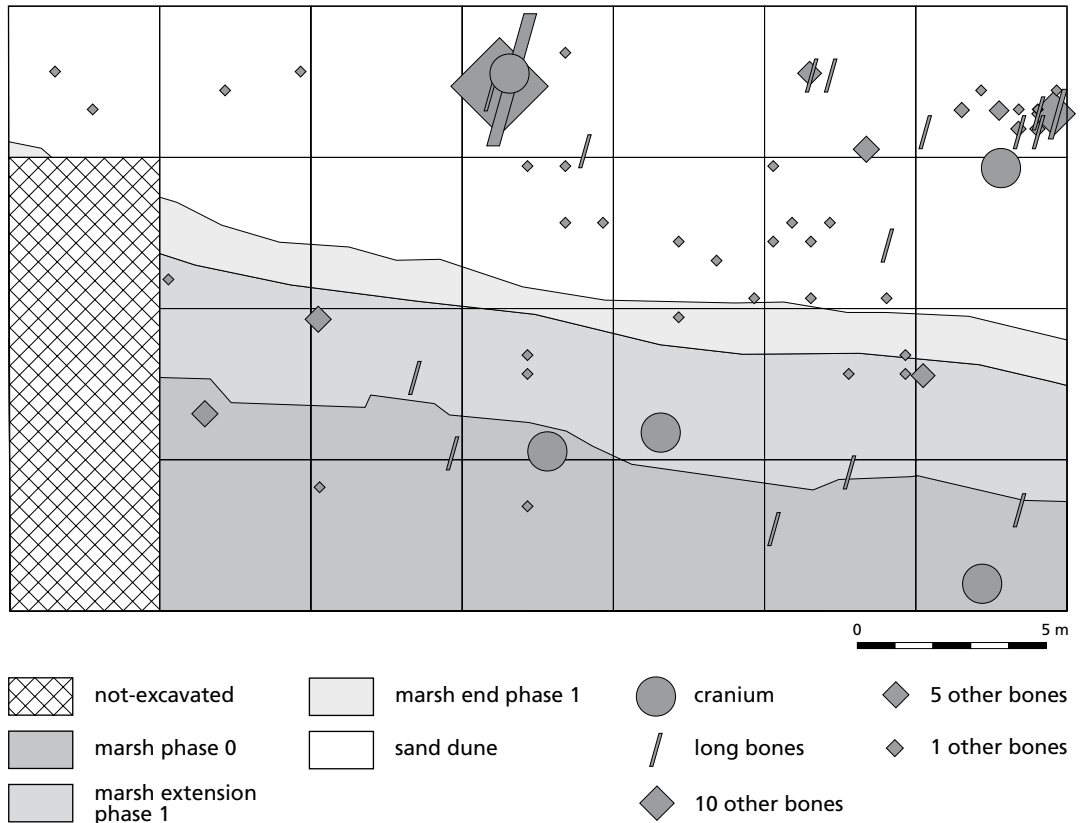


Fig. 4. Hardinxveld-Polderweg phase 1, scattered human remains, Late Mesolithic, 5500–5300 cal BC.

is the parallel treatment of dogs at Hardinxveld-Polderweg. One articulated dog burial and several disarticulated concentrations of dog bones have been documented in the excavated section of the site<sup>31</sup>. This custom reflects the special role of the dog as ‘member of society’. It is not present in Early Neolithic cemeteries and should be considered as a distinct indigenous Mesolithic trait.

#### Early Neolithic, 5300–4500 cal BC

The Linear Pottery culture introduced the custom of burial in rather extensive cemeteries, as documented in Elsloo and Niedermerz, but – most remarkable – this choice was only made by a small number of all settlements<sup>32</sup>. The burial of all members of society in individual graves, with a formal orientation and accompanied by a varied choice of burial goods, which not only reflected status differences, but might also have been considered as essential for the afterlife – was still fully alien to the native traditions. Most remarkably, inhumation and cremation were practised side by side: 47 cremations were documented in Elsloo, ten in Niedermerz. Human skeletal material has fully dissolved in the decalcified loess, but some corpse silhouettes show that the inhumated bodies were buried in Linear Pottery style, in a crouched posture in burial pits, which were generally oriented in the traditional northwest–southeast direction (Elsloo) or at right angles to it (Niedermerz).

<sup>31</sup> VAN WIJNGAARDEN-BAKKER et al. 2001, esp. 191–197. <sup>32</sup> MODDERMAN 1970; DOHRN-IHMIG 1983.

There are only a few cases of in-settlement burial<sup>33</sup>. But despite how clear-cut this all may seem, there are still notable problems. Why was a majority of the deceased not inhumated but cremated, a practice not found elsewhere in the Linear Pottery world<sup>34</sup>? It is tempting to consider cremation as a 'western' contribution, but we should realise that we have no knowledge of La Hoguette and Limburg practices and that cremation is only scarcely documented for the later Mesolithic. Secondly: where were the dead buried in the earlier Linear Pottery phase? Why do we only have two cemeteries and so many (hundreds of) settlements? It cannot be a matter of differential recovery only. The layout of a formal cemetery as disposal area of the dead might have been one choice out of a spectrum of options. The problem has been discussed earlier by Van de Velde, suggesting a more general practice of exposure of bodies 'to the birds', lain on a scaffold or on a tree in the earlier Linear Pottery, a practice only partly replaced in the later Linear Pottery – and that apparently only by some village communities<sup>35</sup>. He argues that 'polymodal funeral rituals' are well documented in non-western societies and that our resistance to accepting exposure as a common practice is a good example of an ethnocentric attitude: it would not be acceptable in our present society.

A single burial at Darion, with rich grave goods, shows a continuation of the Linear Pottery tradition into the successive Blicquy phase, but our overall knowledge of the fifth millennium is very scarce<sup>36</sup>. Contemporaneous evidence from the zone to the north of the loess is restricted to the scattered human remains in the upper levels at Hardinxveld, as mentioned above.

### Middle Neolithic, 4300–3400 cal BC

#### Michelsberg

The caves in the calcareous zone of the Ardennes, especially around Dinant and along the lower course of the Ourthe river, were used again after more than three millennia for inhumation by people of the Michelsberg culture. We owe this knowledge to a <sup>14</sup>C dating programme of skeletal material, since no grave goods accompany the deceased<sup>37</sup>. Recent research gives us details on the deposition and taphonomy. At the Abri Nichet-2 remains of seven adults, two adolescents and nine children between 0 and 13 years were found, spread over 2 m<sup>2</sup> and dated to the end phase of the Michelsberg culture (3710–3370 cal BC)<sup>38</sup>. No bones were articulated and most of the long bones and skull bones were missing. This implies that the bodies had not been buried, but lain down on the cave floor and that at a certain stage bones have been removed, either in a cleaning process, or as an intentional manipulation. Similar observations were made in the upper levels of the Abri des Autours near Anseremme-Dinant<sup>39</sup>. From other abri sites in the same region (Salet, Chauveau) individual flexed burials are however reported<sup>40</sup>. The caves link up with similar collective cave burials further to the south in French Lorraine. They seem to be part of a wider regional tradition and not necessarily representative for the 'Belgian Michelsberg' communities farther north. The use of the caves during this phase raises a number of questions: where did the people live? There is not more than very scanty evidence for domestic Michelsberg presence in the valleys of the Ardennes. Why were the caves and rock shelters not used in the preceding Middle and Later

<sup>33</sup> MODDERMAN 1981, 154: Geleen-Haesselderveld pit 50 with a large piece of a Limburg bowl and a complete adze 'il s'agit vraisemblablement d'une tombe', TOUSSAINT 2007, 10.  
<sup>34</sup> MODDERMAN 1988.  
<sup>35</sup> VAN DE VELDE 1997.  
<sup>36</sup> JADIN 1989.  
<sup>37</sup> TOUSSAINT 2002.  
<sup>38</sup> POTTERIE et al. 1999.  
<sup>39</sup> CAUWE 1995.  
<sup>40</sup> OTTE/EVRARD 1985.

Mesolithic Period, from which camp sites are attested in the region, but no burials? Was the practice of exposure continued, but at other ‘special places’, in the open air? Is there continuity in this aspect and discontinuity only in the choice of location? All these questions are yet to be answered.

### Avennes

We have – in contrast to the Ardennes – a wealth of Michelsberg sites all over the loess zone, including a series of large enclosures. In well-documented excavations a few formal burials as well as scattered human remains have been recorded between the domestic waste – at Spiennes and Thieusies for example<sup>41</sup>. Some densely set post configurations at Thieusies, initially taken to be the traces of houses, have, on the basis of a spatial association with human skull and bone fragments as exposure platforms, been reinterpreted by Vanmontfort as a “funerary habit of body exposition”<sup>42</sup>. Other human remains are restricted to incidents, like the skull depositions in the Rijckholt mines, dated to c. 4000 cal BC<sup>43</sup>. The alleged ‘mining accidents’ all seem to be forgeries or misinterpretations, as in the case of the famous ‘miner’ of Obourg, who appeared to be of Iron Age date and more likely to be a person who had fallen down or was offered into an old shaft, with a miner’s pick being added in modern times<sup>44</sup>. A recently discovered skeleton of an adult woman half way the fill of shaft 11 at Spiennes and dated to the end of the fourth millennium cal BC may be similarly explained<sup>45</sup>. When it is also considered that there is no evidence from the sandy upland of northern Belgium and the southern Netherlands we only can conclude that the mortuary practices of the Neolithic communities between Ardennes and the Lower Rhine district are factually unknown to us.

### Swifterbant

This is in sharp contrast to the customs of the semi-agrarian communities of the developed Swifterbant culture. Five small cemeteries have been discovered and investigated, all in the settlement cluster of the central IJsselmeer district and dated to the centuries around 4000 cal BC. Four are situated on the tops of former river dunes, one on the levee of a fresh water tidal gully (*Fig. 5*). They are analysed in detail in the contribution by Raemaekers et al.<sup>46</sup>. A cemetery may comprise up to ten burials, and there are now 29 known in total, mainly individual interments, but double and even triple burials occur as well, especially adult-child combinations. Both sexes were interred, but children are rare, apart from the multiple burials. Some beads and pendants are the only grave goods; no formal burial goods are attested with certainty. Only one grave has been found outside the IJsselmeer cluster, near Zoelen in the river district. It is a double burial of an adult woman and a child, together with the remains of a second adult person (woman).

<sup>41</sup> VANMONTFORT 2004, 204 on Spiennes: “The assemblages contain numerous fragments of human bone (Clason 1971)” ; *ibid.* 227.

<sup>42</sup> VANMONTFORT 2004, 227; VERMEERSCH/WALTER 1980, esp. 37–39; cf. the structure at Hekelingen (Vlaardingen Group) mentioned below (see note 61).

<sup>43</sup> A complete skull was found in the modern investigations, in 1965, one by Hamal Nandrin in 1923, one around 1930 and a skull fragment in 1958, RADEMAKERS 1998.

<sup>44</sup> DE LAET 1974, 163; LANTING/VAN DER PLICHT 1999/2000, esp. 53; CAUWE et al. 2001, 80; DE HEINZELIN et al. 1993.

<sup>45</sup> COLLET/TOUSSAINT 1998: 3360–3030 cal BC at the two sigma interval; with comments on earlier discoveries.

<sup>46</sup> MOLTHOF/RAEMAEKERS 2004; CONSTANDSE-WESTERMAN/MEIKLEJOHN 1979; MEIKLEJOHN/CONSTANDSE-WESTERMAN 1978; RAEMAEKERS et al. 2007, 479 ff.

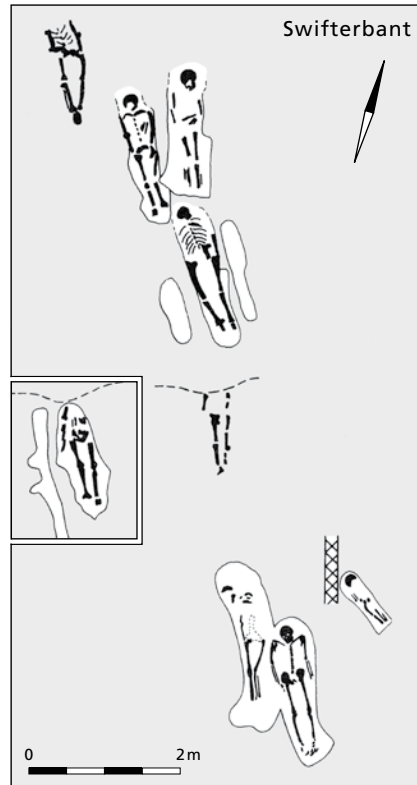


Fig. 5. Swifterbant S2, cemetery, Swifterbant culture, c. 4000 cal BC.

It is remarkable – in view of the Hardinxveld evidence – that no special treatment of dogs is reported from Swifterbant sites. The ‘scattered human remains tradition’ is, however, represented at both levee settlement sites Swifterbant S2 and S3/5, where 22 and 15 fragments respectively, mainly teeth, were collected by means of careful trowelling and wet sieving. The same holds for Hüdde I (Lower Saxony), where several isolated human bones were found amongst the domestic waste<sup>47</sup>.

A first careful conclusion can be that the two main traditions of the preceding Late Mesolithic were continued in the Swifterbant Period: formal burial and the ‘scattered remains tradition’. Burial appears, however, to have been more formalised in the form of small cemeteries with a common orientation of graves and a systematic, fully extended body posture. We may interpret the cemeteries as an indication for stricter territorial claims than before, but should realise at the same time that we owe this evidence to the specific conditions in the Swifterbant area where an old and well-preserved land surface has recently been uncovered and as such has become within to archaeological reach. It is nevertheless a fact that the earlier, Late Mesolithic burials on the Hardinxveld dune tops cannot be conceived as being part of a structured cemetery.

While the burial posture may be considered to continue the ‘typical Northern Late Mesolithic’ style, the layout of the cemeteries is something new. This aspect may be related to the ongoing neolithisation, which around 4000 cal BC was well underway. It is an aspect of the structuring of the ‘domestic sphere’, created by local groups around their settlements.

<sup>47</sup> DEICHMÜLLER 1969, 36.

## Hazendonk, 3700–3400 cal BC

Close contacts of the southernmost Swifterbant communities with their fully Neolithic Michelsberg neighbours further to the south resulted in a cultural transformation and the development of the Hazendonk group, in which a new regional pottery style and a Michelsberg-related tool kit of imported flint are combined. These are communities who developed a perfect integration of many aspects of the ‘old’ Mesolithic way of life with those of the ‘new’ Neolithic, in subsistence, in material culture, in spatial organisation and also in the treatment of the dead. Much knowledge on many aspects of this society – including mortuary practices – has been gained by the recent, large-scale excavations at Schipluiden and Ypenburg in the environs of The Hague. It appears that the local communities were not bound to strict rules, but could make widely divergent choices<sup>48</sup>. At Ypenburg a cemetery was founded, comprising two clusters that may be either successive or the reflection of two cooperating households (*Fig. 6*)<sup>49</sup>. Both sexes and children were interred in various postures, but mainly tightly flexed, as if with bound legs. Some burials were multiple and there were no other grave goods than beads. Only a few skeletal parts between the domestic refuse reflect the ‘scattered remains tradition’, next to the formalised burial.

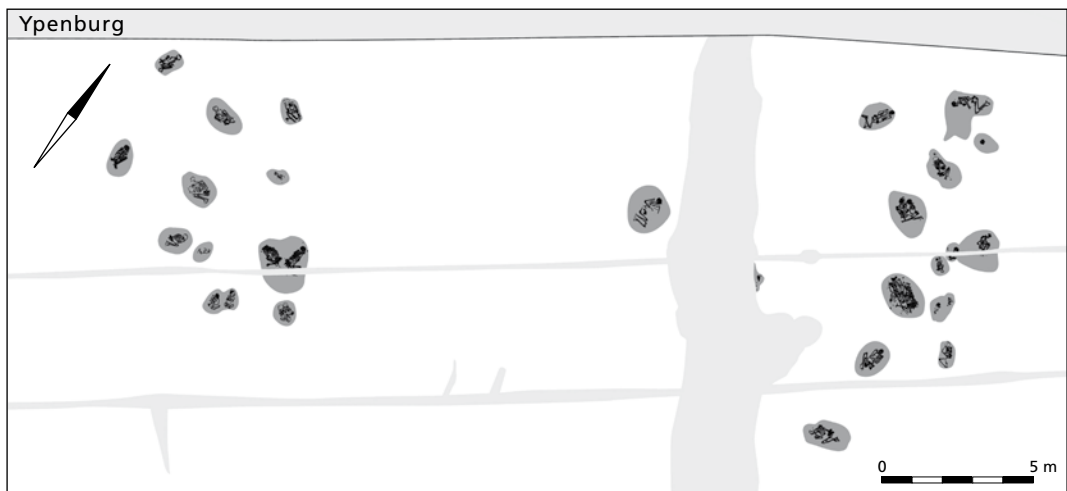


Fig. 6. Ypenburg, Hazendonk group cemetery, c. 3500 cal BC.

Schipluiden, quite surprisingly, offers us a rather different picture<sup>50</sup>. Both sites are synchronous and close by, but Schipluiden is more Neolithic in settlement layout and continuity of occupation. This contrasts with the very selective burial of only four adult males and two children in combination with a distinct continuation of the body treatment, resulting in scattered remains (*Fig. 7*). People apparently had the freedom to make their personal choice out of a spectrum of divergent options. ‘Neolithisation’ did not follow a narrow trail, but a wide track with many individual lines. The burial posture of those formally interred was, however, again very tightly flexed, with the exception of one double burial (*Fig. 8*). This posture contrasts strongly with the preceding Swifterbant tradition and the northern tradition in wider respect. We are inclined to believe that this special posture – and the beliefs which are reflected in it – were ultimately derived from the agricultural societies (‘Belgian Michelsberg’) to the South. The contact networks of the

<sup>48</sup> LOUWE KOOIJMANS 2009.

<sup>50</sup> LOUWE KOOIJMANS/JONGSTE 2006.

<sup>49</sup> KOOT/VAN DER HAVE 2001; KOOT et al. 2008.

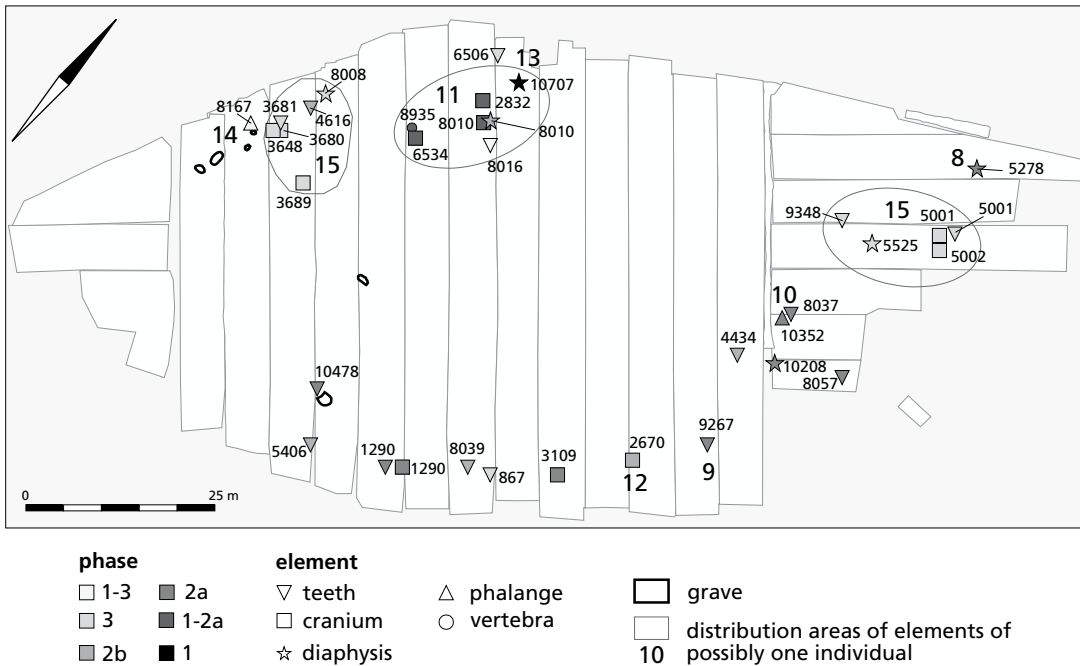


Fig. 7. Schipluiden, all phases, scattered human remains, Hazendonk group, c. 3600–3400 cal BC.

Hazendonk group reached out that far, the flexed posture – be it not that tight – was the rule in all ‘Danubian’ (Linear Pottery, Rössen) communities and Michelsberg burials recently uncovered in the Aisne Valley, show a similar posture<sup>51</sup>. Our main drawback is the lack of evidence in the region in between.

The Schipluiden community combined divergent traditions in their mortuary practices and perhaps in their ‘world view’, in the same way as they did in their material culture and subsistence.

### The Later Neolithic, 3450–2900 cal BC

#### Ardennes caves and dolmens and the burial vault of Stein

The later stage of the Neolithic, that of the Seine-Oise-Marne culture, must be considered as the main period of the use of caves for disposal of the dead, since almost 60% (70 out of 118) of the <sup>14</sup>C dates of human bones from these caves date to this relative short period of 3500–2500 cal BC<sup>52</sup>. A few other burials are associated with characteristic Seine-Oise-Marne-type material, like Vauclles and Ben-Ahin<sup>53</sup>. Most of the older 19<sup>th</sup> century observations – schematically showing

<sup>51</sup> Pers. inf. by Mike Ilett., Paris; cf. COLAS et al. 2005. There is, however, on the one hand a remarkable individual Early Mesolithic cave burial at Abri des Autours (Dinant) showing the tightly flexed posture, interpreted as being buried on the back, packed in a sac and/or with the legs tied together with ropes: TOUSSAINT 2002, 144; N. CAUWE 2001, 54 (photo).

A (badly preserved) extended burial was found, on the other hand, in the Michelsberg enclosure of Thieusies (VERMEERSCH/WALTER 1980, 17).

<sup>52</sup> TOUSSAINT 2007 gives a detailed survey of the Seine-Oise-Marne burials in the caves and megalithic chambers of the Ardennes.



Fig. 8. Schipluiden grave 2, tightly flexed burial of an adult male person with a piece of pyrite and three flint strike-a-lights as grave goods, Hazendonk group, c. 3500 cal BC.

articulated, extended bodies and skulls – may be related to this period<sup>54</sup>. The funeral practices appeared to be very diverse, with secondary burials, sorting and manipulation of bones<sup>55</sup>. This is on the one hand the continuation and intensification of the same custom as in the previous Michelsberg Phase, on the other hand a specific regional expression of the widespread principle of ‘collective disposal’ in the later stage of megalithism.

New discoveries have extended the well-known megalithic chambers from Wéris to a small series of nine simple and rather small ‘dolmens and related monuments’, spread over the Ardennes. They supplement the Seine-Oise-Marne cave burials, and in some ways bridge the gap between the Seine-Oise-Marne allées couvertes and hypogées of the Paris Basin to the South and the Hessisch-Westfälische Steinkisten to the East. They presumably date from the same period and will have been an alternative outside the calcareous zone with its natural caves<sup>56</sup>.

The Stein burial vault, located in the loess region just to the north of the Ardennes, is a singular monument in many respects<sup>57</sup>. The tripartite layout resembles those of hypogées of the Seine-Oise-Marne culture, as does the subterranean structure, but it was dug out in the loess and made of wood. Only the floor was paved with stone slabs and pebbles. In contrast to the Seine-Oise-Marne inhumation ritual, as also practised in the Ardennes caves, the bodies were cremated. The cremation remains amount c. 4100 gr. and represent at least five adults and one child and may not represent more individuals, in view of the quantity of remains<sup>58</sup>. They had been piled up on the floor in two concentrations, also containing eleven bone and 96 transverse flint arrowheads, most of which had passed through the cremation fire. Formal grave goods were restricted to a single pot, a collared flask and (possibly) a flint axe, which was found in the excavated spoil. The question remains, whether this monument is a singular phenomenon or representative for the mortuary practices in the region north of the Ardennes. The restricted number of formal grave goods and the piling up of the cremation remains are – in the author’s opinion – suggestive of a

<sup>53</sup> DE LAET 1974, 208–209.

<sup>54</sup> Cf. the reviews by MARIËN 1952, 114–125 and DE LAET 1974, 203–210.

<sup>55</sup> CAUWE et al. 2001, 82.

<sup>56</sup> PIRSON et al. 2003; cf. the map in TOUSSAINT 2007, Fig. 20.

<sup>57</sup> MODDERMAN 1964.

<sup>58</sup> The cremated bones were studied by G.J.R. Maat after publication by Modderman in 1964 and as yet not published. I am grateful to him for permission to use the anthropological data from his report of 20.12.1979.

single burial act of a group of people, who had died at one occasion. The abundance of co-cremated projectile points is in addition indicative of some violent casualty. However, this interpretation remains speculative as long as no other sites are available for comparison. We should realise that this type of structure is invisible on the surface. Such phenomena cannot be found in a traditional survey and will only be found by accident, as in the case of Stein, discovered during the excavation of an Linear Pottery settlement.

There is one 'flat grave', which allows us a glimpse at alternative practices: the burial of an adult in crouched position together with two young children (less than 1 year and 2–3 years respectively) in the Belgian loess zone at Avennes (Hesbaye). Sherds of a Michelsberg vessel are reported from the pit fill, but must be in secondary position and have as such no dating value. The skeleton is <sup>14</sup>C dated to the second half of the fourth millennium, contemporaneous with the above mentioned skeleton from shaft 11 at Spiennes<sup>59</sup>.

### Vlaardingen group

While Funnel Beaker and Seine-Oise-Marne are predominantly known by their tombs, only settlements from the Vlaardingen group have been uncovered. The evidence on mortuary practices is restricted to on-site observations at two sites, Hekelingen III<sup>60</sup> and the eponymous site of Vlaardingen<sup>61</sup> itself, both situated on a low and clayey levee on a fresh water tidal creek in the Meuse estuary. These comprise four cremations and one singular feature, interpreted as an exposure structure.

The cremations seem to have been left on the surface and subsequently washed apart, but in one instance – sub site H of Hekelingen III – the remains appear to have been embedded shortly after the cremation had taken place. The spatial position of the identified skeletal parts revealed that the body must have been placed in a seated posture in the fire (*Fig. 9*).

A remarkable post setting was found at the bank of the gully at another sub site M1 of Hekelingen III. It consisted of six firm posts, set in a 1.5 m × 1.2 m rectangle, of which one post is missing (*Fig. 10*). The structure was erected close to a scatter of small features and domestic debris, interpreted as a short-lived campsite belonging to a small group. The special character of the post setting is underlined by the exclusive use of oak, a wood species most probably not naturally available at that location. Parts of long bones and a lower jaw of one adult male were found in between and close by the posts. This configuration of posts and human bones has been interpreted as the relics of a platform on which a body was exposed to the elements. This unique complex offers us one option for understanding the scattered human remains between the domestic debris of the earlier sites and supports the interpretation of the Michelberg post settings at Thieusies<sup>62</sup>. We owe both preceding observations to the specific taphonomic conditions in the quiet sedimentary conditions of this zone of the delta wetlands, where activity locations have been silted over and protected from later disturbances. These conditions allow us to view mortuary practices, which leave no traces under upland conditions because of destructive taphonomic processes. This insight helps us to understand the lack of burials and human remains there. It seems that the tightly flexed posture from the preceding Hazendonk Period was not continued and that cremation was introduced, but data are scarce. New finds may alter this view. We have, moreover, as yet no reliable information on to what extent human remains occurred in the domestic assemblages of the

<sup>59</sup> TOUSSAINT 2007, 19–20.

<sup>60</sup> LOUWE KOOIJMANS 1986; HOOGLAND 1985.

<sup>61</sup> VAN BEEK 1990: one in trench 10 (131, Fig. 66) and one in trench 13 (167, Fig. 91).

<sup>62</sup> VANMONTFORT 2004, 227 cf. note 42.

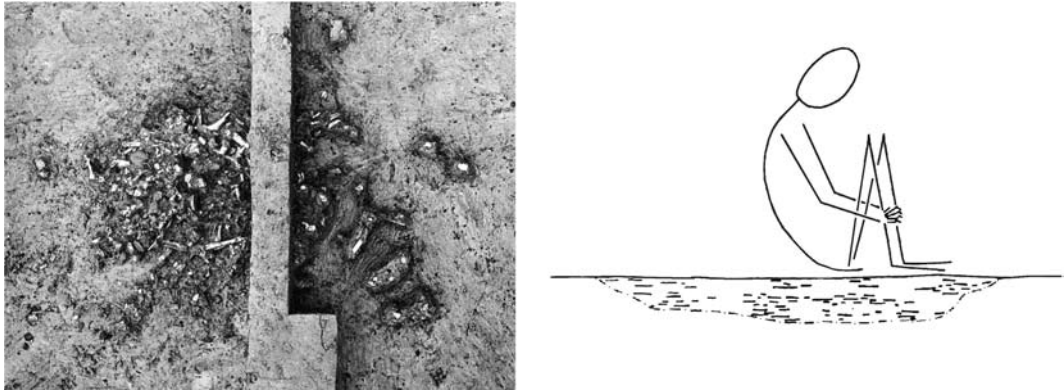


Fig. 9. Hekelingen, H2, *in situ* cremation, Vlaardingen group, c. 3000 cal BC.

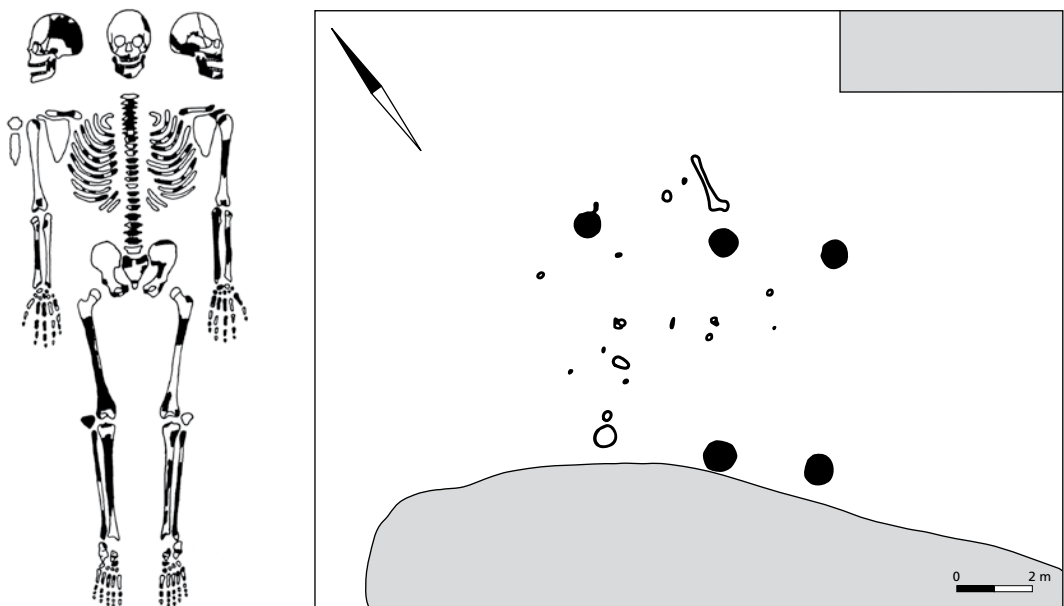


Fig. 10. Hekelingen, M1, rectangular post structure and remains of an adult male person, Vlaardingen group, c. 3100 cal BC.

Vlaardingen culture. They are generally not reported in the faunal studies and seem to be scarce. A skull fragment and a milk tooth from Vlaardingen together with the incidental observation of a human skull in the Early Vlaardingen Level at the Hazendonk, suggest continuity into this phase, but at the moment it is not possible to say anything about the relative importance<sup>63</sup>.

<sup>63</sup> Vlaardingen: It is illustrative for the lack of attention by archaeozoologists that the Vlaardingen material is mentioned without any comment in a preliminary report (VAN DER FEEN 1961), and not included in the faunal lists or commented in the final report

(CLASON 1967). Leidschendam: Two calcined (human?) skull fragments from Leidschendam are mentioned in a foot note only (GROENMAN-VAN WAATERINGE et al. 1968, 114). Hazendonk: unpublished, pers. observation by the author.

## Funnel Beaker culture

The Funnel Beaker West group is a phenomenon almost appearing out of the blue. It is there, suddenly, around 3450 calBC, complete with a differentiated and richly decorated pottery, showing close Scandinavian connections, with large, thin-butted axes, imported from the West Baltic and most conspicuously used for cultic deposition, and with passage graves – the *hunebedden* – which are equally part of the Nordic megalithic family. Our choice between immigrants and a native adoption to explain the new cultural complex is hampered by the almost complete lack of sites and material from the preceding centuries, contemporaneous with the Hazendonk group of the river district.

Mortuary practice is most prominently represented by the *hunebedden*, exclusively in the province of Drenthe and its direct environs, of which 53 are still standing, the location of 23 is known and the original number is rated at about 100. Most *hunebedden* were erected in the earlier stages of the Funnel Beaker culture during the relatively short time slice between 3450 and 3200 calBC. They either suddenly show us a population that was fully invisible for archaeology in the preceding centuries, or a massive invasion from the east. People were interred with a diversity of grave goods: pottery, flint tools, axes and ornaments, a custom not seen before in this region<sup>64</sup>. The remarkable concentration of megaliths along the low rise in the eastern part of Drenthe might be explained by the more prolific occurrence of massive erratic boulders there than in the surrounding areas, but it almost seems as if these occurrences inspired Funnel Beaker communities in the wider surroundings to create a ‘ritual landscape’ there. We all agree that the construction of megalithic monuments is a most remarkable phenomenon, not only in the Lower Rhine Basin. We should, however, ask ourselves: to what extent mortuary practice had fundamentally changed? We should realise that bodies were not buried, but lain down in a special place to decay and fall apart. This might have been general practice in the preceding times, as is suggested in this paper. So the main difference is the construction of a closed chamber, where the bodies were separated from the world of the living and protected against diverse natural agencies such as wild animals. This might have been a reason for the construction in itself, but it also facilitated the optional manipulation of selected bones. We might ask ourselves why people in other regions made no similar efforts to fulfil the same needs by building structures of wood and earth, an idea inspired by the Stein burial vault. This option, however, seems unlikely, since no such structures have been found anywhere across the northern plain. If exposure was continued, it will have been in the open air. However, another option was available to the Funnel Beaker people: the individual burial in a flat grave.

Remains of three individuals were collected in the years 1934–1938 during canalisation works from the valley fill of the river Hunte, close by the Funnel Beaker settlement then under excavation: a skull, a femur and remains attributed to a woman of 17–18 years (skull, mandible, femur and tibia). The first skull found was associated with antler and flint artefacts within the same deposit from which rich material was uncovered during the excavation. The Funnel Beaker age seems to be undisputed. They have been interpreted “not as burials, but probably as the bodies of casualties, that were washed apart”<sup>65</sup>. I propose here body exposure as an alternative. It is obvious that only large and conspicuous skeletal parts were collected by the workmen<sup>66</sup>.

Some of the dead were buried in simple flat graves, arranged in small cemeteries with up to ten graves (*Fig. II*), exceptionally twenty, as at Heek (Westphalia)<sup>67</sup>. In the Netherlands and the adjacent part of Germany, west of the river Ems, about 50 locations with one or more flat graves

<sup>64</sup> BAKKER 1979.

<sup>65</sup> REINERTH 1939, 241–242.

<sup>66</sup> It should be mentioned for the sake of completeness that a series of five teeth of adult and young individuals were found at the TRB site of Slootdorp, the

single domestic assemblage in which bone has been preserved in the Netherlands (HOGESTIJN / DRENTH 2000/2001, 48).

<sup>67</sup> FINKE 1983.

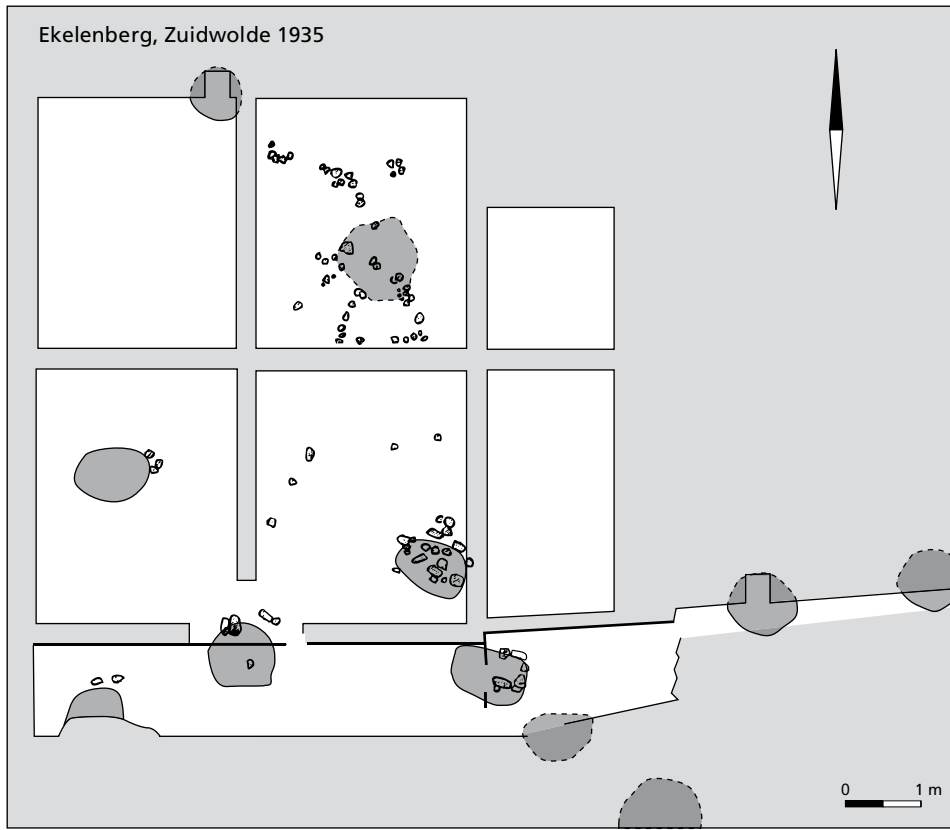


Fig. 11. Zuidwolde-Ekelenberg, flat grave cemetery.

are known. However most of these are based on the discovery of one or more complete pots in upland conditions<sup>68</sup>. In the Netherlands more than 44 graves have been documented by excavations at 19 sites<sup>69</sup>. Since all skeletal material has decayed in the acidic soils hardly any information is available about body posture. There is a single corpse silhouette from Heek, showing a crouched body, on its left side. Grave pit dimensions suggest that this is likely to have been the most common posture, but some had dimensions which could have accommodated extended bodies.

Cremation was a third option introduced in the later stages, the so-called Middle and Late Havelte stages. The introduction of cremation might be seen as resulting from a shift in contacts towards southern regions, as indicated by the northern distribution of ‘western Neolithic’ axes of Buren type and most prominently illustrated by the burial from Denekamp, with two Late Havelte bowls, two collared flasks and a Buren axe as grave goods<sup>70</sup>. Bakker suggests a shift from extended to flexed burial, ending in cremation for Funnel Beaker flat graves, but it seems unlikely that cremation replaced inhumation. It was more likely just an additional, infrequently practised option<sup>71</sup>.

It is intriguing that flat graves and flat grave cemeteries are not only found outside the megalithic province, but most frequently in Drenthe, close to and even below *hunebedden*, with pottery

<sup>68</sup> KOSSIAN 2005.

<sup>69</sup> I owe these data to Karsten Wentink, who made an inventory for his MA Thesis. See also WATERBOLK, 1958.

<sup>70</sup> BAKKER 1992, esp. 93–94; BAKKER/VAN DER WAALS.

<sup>71</sup> BAKKER 1979, 94. Only a few examples of Funnel

Beaker cremations are known (e.g. Angelslo, Westrup, Leer, not Denekamp!) in spite of the fact that cremated bone is well-preserved and easily recognised. – Cf. also KOSSIAN 2005, 64–66.

typology arguments for contemporaneity. Examples are Mander, Tynaarlo and Odoorn. Grave sets similar to those in the megaliths accompanied the dead. The main differences seem to be individuality as opposed to collectiveness, the longstanding monumentality of the location and perhaps the restrictions imposed on later manipulation of skeletal parts. It is tempting to conceive the flat grave tradition as rooted in that of the Swifterbant culture, and made more visible for the archaeologist by grave goods and occasional stones lining the grave pit, similar to the link between the 'scattered remains ritual' and the megaliths, suggested above. It is in fact the same dichotomy as seen in the Swifterbant and Hazendonk evidence, though differently expressed.

### Synthesis

Firstly we have become aware that our view on mortuary practices in the region and period studied in this paper is primarily dictated by the chance of preservation. Even traditions, which under 'normal upland' conditions leave no trace at all in the archaeological record, may have been documented under the specific protective conditions of some delta environments and cave fills. It is permissible to use this evidence in a wider geographical sense, since human mortuary practices will not have been bound to specific environments; quite the contrary. A second factor is the chance of discovery. Constructed monuments (the *hunebedden*) almost fully cover the burial, while the chance of finding flat graves is dependent of the presence of grave goods and the preservation of skeletal remains. A third factor is the intensity of research, demonstrated by the increase in knowledge in the Post-War Period, not only with regard to the sheer quantity but even more importantly to the diversity of evidence. And still there are large regions and long time ranges which are fully devoid of evidence, although there is hardly any reason to assume extreme shifts or fluctuations in population. Certainly, there will have been less and more densely populated areas, but such patterning has hardly any relationship to the evidence on mortuary practices. One may compare the evidence on the spread of surface flint scatters or stray finds of axes as less unreliable indicators of population and find that, for instance, no burial is known from the entire Limburg Meuse Valley, a region rich in axes and flint scatters, while skeletal evidence is overrepresented in parts of the Dutch delta. In a synthetic view we must overcome these restrictions and profit from the opportunities arising from our long term view on the past.

The main research task was to trace the process of neolithisation in the mortuary practices. This can best be done by trying to trace continuities and innovations, keeping an open eye for culture-specific differentiation. The most striking observation is the diversity in any stage of the period under study. In each stage and in every archaeological 'culture' several procedures were practised side by side, without any indication as to why a specific practice was chosen in a specific case. So we distinguish four parallel 'lines of body treatment':

#### 1. The disposal of the dead, collectively, in special places

This was practised as early as the Boreal Mesolithic, as documented in the Ardennes caves and rock shelters. This should not be called 'burial', since the bodies were left on the surface, exposed to the elements, and accessible for eventual manipulation of selected skeletal parts by the members of the community. Such a practice, if not located on a protected place, but in the open air, would leave hardly any traces. This may be one of the explanations for the second line: the occurrence of scattered human remains on domestic sites.

The relatively late custom of the construction of megalithic chambers – artificial protected disposal places for human bodies – may be rooted in this much older tradition. In any event it existed side by side with the use of caves in the Ardennes and, further south, with the *hypogées* of the Seine-Oise-Marne culture.

## 2. A body treatment resulting in scattered remains on settlement sites

This has been documented over two millennia, from the earliest sites with organic preservation (Hardinxveld, 5500–4450 cal BC) via Swifterbant up to the Hazendonk group (Schipluiden, c. 3500 cal BC). Documentation is not restricted to the wetlands, but extends to the MK sites of the loess zone as well. The lack of evidence earlier than 5500 cal BC is due to the absence of sites with sufficient faunal remains<sup>72</sup>. The lack of evidence for the Vlaardingen group might be real, but we should not exclude the possibility that it is partly the result of limited archaeological attention. It may, however, be that this line ends in the final stage of the neolithisation process. It is suggested that bodies were exposed in the open, either on the surface or on a platform, and that skeletal parts were collected.

Scattered human remains seem also to be a common aspect of (Late) Mesolithic sites in the Baltic. A comparable line, but with secondary burial of skeletal remains, has for instance been suggested for the occurrence of numerous (275) scattered human bones on the Polish site of Dudka<sup>73</sup>.

## 3. Inhumation in grave pits

This is a common practice at all times. Burial in separate graves, not arranged in cemeteries, seems to be a custom until the Late Mesolithic. The earliest cemeteries are Linear Pottery, followed by those of the Swifterbant culture, the Hazendonk site of Ypenburg and are more widespread in the Funnel Beaker culture. The Vlaardingen group contexts show us, that options other than inhumations were practised in cases where flat graves and flat grave cemeteries are not attested.

It should be stressed that the layout of a cemetery as a ‘formal burial area’ by one community did not mean that this was the rule for all. This is for instance demonstrated by the contrast between the Ypenburg and Schipluiden sites, but holds as well for the Linear Pottery, perhaps not only in the Low Countries but also beyond. Where are for instance burials in the densely settled Belgian Hesbaye<sup>74</sup>?

There is a distinct contrast in body posture between the extended burial of the ‘early northern’ tradition (Hardinxveld, Swifterbant and possibly early Funnel Beaker) and the ‘Danubian’ crouched/flexed posture. This posture was first introduced by the Linear Pottery, transformed and adopted by the Hazendonk group and subsequently applied in the Funnel Beaker flat graves. Grave goods, other than dress attributes and beads, are, in our study area, restricted to some (not all!) fully agrarian societies: Linear Pottery and Funnel Beaker. This may be related to the socially more differentiated society (if that is what is expressed in the grave sets) or to its cosmovision.

<sup>72</sup> Human remains were absent between 28 identifications of large mammals at the recently excavated Early Mesolithic site of Zutphen-Ooijerhoek (GROENEWOUDT et al. 2001).

<sup>73</sup> GUMINSKI 2003 with a series of references to Baltic Mesolithic and ‘paraneolithic’ domestic sites with scattered human bones.

<sup>74</sup> There is some evidence for settlement burials: VAN BERG/HAUZER 2001.

#### 4. Cremation

Cremation was practised, but probably rather infrequently, as early as the Middle Mesolithic. It was a surprisingly important alternative for the Linear Pottery inhabitants of Elsloo, subsequently not documented for quite a long period (more than a millennium). It reappeared in the later Neolithic contexts of the Stein burial vault, Vlaardingen settlements and later Funnel Beaker flat graves. We are generally dealing with individual cremations. Stein is an exceptional case. The underlying motivation to cremate and not to inhumate, seems to be beyond archaeological understanding, as is the case for the other 'lines'.

Through the ages people have had a wide choice how to deal with the bodies and remains of their deceased. There is a long lasting trend of continuity, in which formal cemeteries, a crouched or flexed body posture and grave goods are new, Neolithic aspects. The exposure and/or excarnation of corpses and manipulation of selected skeletal parts, resulting in scattered human remains at settlement sites, seem – at least in some cultural contexts to end in the later Neolithic – to be replaced by artificial mortuary chambers.

The author apologises that he has not done justice to the more subtle differences between the burials within each separate group in time and space, and that he did not fit the patterns of the Lower Rhine Basin into the wider, European contexts and trends. Both these aspects were beyond the scope of this paper.

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## **Abstract**

Our knowledge of mortuary rituals during the Mesolithic and Neolithic in present-day Belgium and the Netherlands is predominantly dictated by exceptional chance preservation in caves (Belgium) and sedimentary environments (Netherlands). Additionally, there are locally constrained megalithic tombs (province of Drenthe, Ardennes) and chance discoveries of some flat graves and small flat grave cemeteries. The pattern which arises is not one of a succession of customs, but one of a wide range of parallel practices through time. A widespread custom may have involved scattering remains in the settlement refuse, a practice systematically documented at wetland sites. Formal burial, individual or collective, disposal at special locations and cremation were alternatives in most periods. Formal cemeteries, changes in body posture and grave gifts are seen as expressions of the gradual change to a Neolithic way of life.

## **Zusammenfassung**

Unsere Kenntnis über die Bestattungsriten des Meso- und Neolithikums in den Niederlanden und in Belgien spiegelt die spezifischen Erhaltungsbedingungen von Grabfunden in Höhlen (Belgien) und in den holozänen Ablagerungen (Niederlande). Der Quellenbestand wird durch einige Megalithgräber (Provinzen Drenthe, Ardennes) sowie Zufallsfunde von Flachgräbern und kleinen Flachgräberfeldern ergänzt. Die Diversität der Quellen spiegelt keine zeitliche Sequenz, wohl aber ein weites Spektrum verschiedener, zeitgleicher Bestattungssitten. Bei systematischen Grabungen auf Feuchtbodensiedlungen wurden wiederholt Reste menschlicher Knochen im Siedlungsabfall entdeckt. Die sich daraus ableitende "Entsorgung" der Toten darf als allgemeine Praxis angesehen werden.

Alternativ dazu wurden Einzel- oder Kollektivgräber angelegt und die Toten verbrannt oder unverbrannt bestattet. Die Anlage von Gräbern und der veränderte Umgang mit den Toten sowie das Aufkommen von Beigaben sind Ausdruck eines allmählichen Überganges zur neolithischen Lebensweise.

## Résumé

Nos connaissances des rites funéraires mésolithiques et néolithiques en Belgique et aux Pays-Bas dépendent essentiellement des conditions de conservation exceptionnelles rencontrées dans les grottes (Belgique) et les dépôts sédimentaires holocènes (Pays-Bas). S'y ajoutent encore des tombes mégalithiques limitées à certaines régions (province de Drenthe, Ardennes) et les découvertes faites par hasard de quelques tombes plates et petites nécropoles à tombes plates. Ces sources archéologiques révèlent ainsi, non pas une succession de différents rites, mais un large éventail de pratiques parallèles au cours des siècles. Une pratique répandue, et documentée systématiquement dans les habitats en milieu humide, consistait à éliminer les restes d'ossements humains avec les déchets du village. Des alternatives existaient sous forme de tombes simples ou collectives et de sépultures à incinération ou inhumation. L'aménagement de nécropoles, les changements de position du corps ainsi que les offrandes funéraires expriment apparemment une évolution progressive vers un mode de vie néolithique.

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## Bibliography

- ARTS/HOOGLAND 1987  
N. ARTS/M. HOOGLAND, A Mesolithic settlement area with a human cremation grave at Oirschot V, municipality of Best, the Netherlands. *Helinium* 27, 1987, 172–189.
- BAKKER 1979  
J. A. BAKKER, The TRB West Group. Studies in the chronology and geography of the makers of the hunebeds and Tiefschich pottery. *Cingula* 5 (Amsterdam 1979).
- BAKKER 1992  
J. A. BAKKER, The Dutch hunebedden. Megalithic tombs of the Funnel Beaker Culture. *Internat. Monogr. Prehist., Arch. Ser. 2 (Ann Arbor 1992)*.
- BAKKER / VAN DER WAALS 1973  
J. A. BAKKER / J. D. VAN DER WAALS, Denekamp-Angelslo, cremations, collared flasks and a corded ware sherd in Dutch Final TRB contexts. In: G. Daniel / P. Kjaerum (eds.), *Megalithic Graves and Ritual*. *Jysk Ark. Selskab Skr.* 11 (København 1973) 17–50.
- VAN BEEK 1990  
B. L. VAN BEEK, *Steentijd te Vlaardingingen, Leidschendam en Voorschoten*. Ph.D. thesis (Amsterdam 1990).
- VAN BERG/HAUZEUR 2001  
J.-L. VAN BERG/A. HAUZEUR, Le Néolithique ancien. In: N. Cauwe / A. Hauzeur / P.-L. van Berg (eds.), *Prehistory in Belgium*. *Anthr. et Praehist.* 112 (Bruxelles 2001) 63–76.
- BOSSCHA ERDBRINK et al. 1979  
D. P. BOSSCHA ERDBRINK / C. MEIKLEJOHN / J. TACOMA, River valley people: fossil human remains from river deposits in the upstream part of the Betuwe region between Arnhem and Nijmegen in the Netherlands. *Proc. Koninklijke Nederlandse Akad. Wetenschappen, Ser. C* 82 (3), 1979, 275–323.
- CAUWE 1995  
N. CAUWE, Chronologie des sépultures de l'Abri des Autours à Anseremme-Dinant. *Notae Praehist.* 15, 1995, 51–60.
- CAUWE 1996  
N. CAUWE, Structure sociale des morts mésolithiques. Le cas des sépultures collectives du sud de la Belgique. *Bull. Soc. Préhist. Luxembourgeoise* 18, 1996, 99–112.
- CAUWE 2001  
N. CAUWE, L'Héritage des chasseurs-cueilleurs dans le Nord-Ouest de l'Europe (10000–3000 avant notre ère) (Paris 2001).
- CAUWE et al. 2001  
N. CAUWE / M. VANDER LINDEN / B. VANMONTFORT, The Middle and Late Neolithic. In: N. Cauwe / A. Hauzeur / P.-L. van Berg (eds.), *Prehistory in Belgium*. *Anthr. et Praehist.* 112 (Bruxelles 2001) 77–89.
- CLASON 1967  
A. T. CLASON, Animal and man in Holland's past. *Palaeohistoria* 13 (Groningen 1967).
- COLAS et al. 2005  
C. COLAS / J. DUBOULOZ / L. MANOLAKAKIS / C. THÉVENNET, Le monument funéraire Michelsberg ancien de Beaurieux "la Plaine" (Aisne, France). In: *Sociétés néolithiques. Des faits archéologiques aux fonctionnements socio-économiques. Préactes du 27<sup>ème</sup> colloque interrégional sur le Néolithique (Neuchâtel 2005)* 30.
- COLLET/TOUSSAINT 1998  
H. COLLET / M. TOUSSAINT, Découverte d'un squelette humain néolithique sur le site minier de Petit-Spiennes (Hainaut, Belgique): tude préliminaire. *Internéo* 2, 1998, 113–124.
- CONSTANDSE-WESTERMAN / MEIKLEJOHN 1979  
T. S. CONSTANDSE-WESTERMAN / C. MEIKLEJOHN, The human remains from Swifterbant

- (Swifterbant Contributions 12). *Helinium* 19, 1979, 235–260.
- DEICHMÜLLER 1969  
J. DEICHMÜLLER, Die neolithische Moorsiedlung Hüde I am Dümmer, Kreis Grafschaft Diepholz. Vorläufiger Abschlussbericht. Neue Ausgr. u. Forsch. Niedersachsen 4, 1969, 28–36.
- DOHRN-IHMIG 1983  
M. DOHRN-IHMIG, Das bandkeramische Gräberfeld von Aldenhoven-Niedermerz, Kreis Düren. In: G. Bauchhenß (ed.), *Archäologie in den Rheinischen Lößbörden. Beiträge zur Siedlungsgeschichte im Rheinland*. Rhein. Ausgr. 24 (Bonn 1983) 47–190.
- VAN DER FEEN 1961  
P.J. VAN DER FEEN, De fauna. In: W. Glasbergen/W. Groenman-van Waateringe (eds.), *In het voetspoor van A.E. van Giffen* (Groningen 1961) 59–61.
- FINKE 1983  
W. FINKE, Ein Flachgräberfeld der Trichterbecherkultur bei Heek-Averbeck, Kreis Borken. Vorbericht über die Ausgrabungen. Ausgr. u. Funde Westfalen-Lippe 1, 1983, 27–32.
- GROENEWOUDT et al. 2001  
B.J. GROENEWOUDT/J. DEEBEN/B. VAN GEEL/R.C.G.M. LAUWERIER, An Early Mesolithic assemblage with faunal remains in a stream valley near Zutphen, the Netherlands. *Arch. Korrespondenzbl.* 31, 2001, 329–348.
- GROENMAN-VAN WAATERINGE et al. 1968  
W. GROENMAN-VAN WAATERINGE/A. VOORRIPS/L.H. VAN WIJNGAARDEN-BAKKER, Settlements of the Vlaardingen Culture at Voorschoten and Leidschendam (ecology). *Helinium* 8, 1968, 105–130.
- GRÜNBERG 2000  
J.M. GRÜNBERG, Mesolithische Bestattungen in Europa. Ein Beitrag zur vergleichenden Gräberkunde. *Internat. Arch.* 40 (Rahden/Westf. 2000).
- GUMINSKI 2003  
W. GUMINSKI, Scattered human bones on prehistoric camp site Dudka, NE-Poland, as indication of peculiar burial rite. In: E. Derwich (ed.), *Préhistoire des pratiques mortuaires. Paléolithique, mésolithique, néolithique*, Actes du Symposium International, Leuven, 12–16 septembre 1999. *Études et Rech. Arch. Univ. Liège* 102 (Liège 2003) 111–120.
- HEINZELIN et al. 1993  
J. DE HEINZELIN/R. ORBAN/D. ROELS/V. HURT, Ossements humains dits néolithiques de la région de Mons (Belgique), une évaluation. *Bull. Inst. Royal Scien. Naturelles Belgique, Sciences Terre* 63, 1993, 311–336.
- HODDER 1990  
I. HODDER, *The domestication of Europe: structure and contingency in Neolithic societies* (Oxford 1990).
- HOGESTIJN/DRENTH 2000/2001  
J.W. HOGESTIJN/E. DRENTH, In Sloodorp stond een trechterbekerhuis? Over midden- en laat-neolithische huisplattegronden uit Nederland. *Archeologie* 10, 2000/01, 42–79.
- HOGLAND 1985  
M.L.P. HOGLAND, *Fysisch-anthropologisch onderzoek van het skeletmateriaal van de opgraving Hekelingen III*. Typescript Faculty of Archaeology (Leiden 1985).
- HUIZINGA 1957/59  
J. HUIZINGA, De prehistorische mens in Nederland. In: *Honderd eeuwen Nederland. Ant. and Survival* 2 (s-Gravenhage 1957/59) 37–56.
- JADIN et al. 1989  
I. JADIN/L.H. KEELEY/D. CAHEN/H. GARTIA, Omaliens et Blicquiens face à face, fouille d'urgence d'un établissement et d'une sépulture du Groupe de Blicquy à Darion-Colia (Geer, prov. de Liège). *Notae Praehist.* 9, 1989, 61–68.
- KOOT et al. 2008  
J.M. KOOT/L. BRUNING/R.A. HOUKES (eds.), *Ypenburg-locatie 4. Een nederzetting met grafveld uit het midden-neolithicum in het West-Nederlandse kustgebied* (Leiden 2008).
- KOOT/VAN DER HAVE 2001  
J.M. KOOT/B. VAN DER HAVE, *Graven in Rijswijk. De Steentijdmensen van Ypenburg* (Rijswijk 2001).
- KOSSIAN 2005  
R. KOSSIAN, Nichtmegalithische Grabanlagen der Trichterbecherkultur in Deutschland und den Niederlanden. *Veröff. Landesamt Denkmalpf. Arch. Sachsen-Anhalt* 58 (Halle 2005).
- LAARMAN 2001  
F.J. LAARMAN, *Archeozoölogie; aarde en betekenis van de dierlijke resten*. In: J.W. Hogestijn/J.H.M. Peeters (eds.), *De mesolithische en vroeg-*

- neolithische vindplaats Hoge Vaart-A 27 (Flevoland). *Rapportage Arch. Monumentenzorg* 79 (Amersfoort 2001) 16.
- DE LAET 1974  
S.J. DE LAET, Prehistorische culturen in het zuiden der Lage Landen (Wetteren 1974).
- LANTING/VAN DER Plicht 1995/96  
J.N. LANTING/J. VAN DER Plicht, De <sup>14</sup>C-chronologie van de Nederlandse pre- en protohistorie, 1. Laat-paleolithicum. *Palaeohistoria* 37/38, 1995/96, 71–125.
- LANTING/VAN DER Plicht 1999/2000  
J.N. LANTING/J. VAN DER Plicht, De <sup>14</sup>C-chronologie van de Nederlandse pre- en protohistorie, 3. Neolithicum. *Palaeohistoria* 41/42, 1999/2000, 1–110.
- LOUWE KOOIJMANS 1986  
L.P. LOUWE KOOIJMANS, Het loze vissertje of boerke Naas? Het een en ander over het leven van de steentijdbewoners van het Rijnmondgebied. In: M.C. van Trierum/H.E. Henkes (eds.), *Landenschap en bewoning rond de mondingen van de Rijn, Maas en Schelde*. *Rotterdam Papers* 5 (Rotterdam 1986) 7–25.
- LOUWE KOOIJMANS 1998  
L.P. LOUWE KOOIJMANS, Understanding the Mesolithic/Neolithic frontier in the Lower Rhine Basin, 5300–4300 cal BC. In: M. Edmonds/C. Richards (eds.), *Understanding the Neolithic of North-western Europe* (Glasgow 1998) 407–427.
- LOUWE KOOIJMANS 2001a  
L.P. LOUWE KOOIJMANS (ed.), *Hardinxveld-Giessendam, Polderweg. Een jachtkamp uit het Laat-Mesolithicum, 5500–5000 v. Chr.* *Rapportage Arch. Monumentenzorg* 83 (Amersfoort 2001).
- LOUWE KOOIJMANS 2001b  
L.P. LOUWE KOOIJMANS (ed.), *Hardinxveld-Giessendam, De Bruin. Een jachtkamp uit het Laat-Mesolithicum en het begin van de Swifterbant-cultuur, 5500–4450 v. Chr.* *Rapportage Arch. Monumentenzorg* 85 (Amersfoort 2001).
- LOUWE KOOIJMANS 2003  
L.P. LOUWE KOOIJMANS, The Hardinxveld sites in the Rhine/Meuse delta, 5500–4450 cal BC. In: L. Larsson/H. Kindgren/K. Knutsson/D. Loeffler/A. Åkerlund (eds.), *Mesolithic on the Move*. Papers presented at the Sixth International Conference on the Mesolithic in Europe, Stockholm 2000. *Internat. Conf. Mesolithic Europe* 6 (Oxford 2003) 608–624.
- LOUWE KOOIJMANS 2004  
L.P. LOUWE KOOIJMANS, Transition to farming along the lower Rhine and Meuse, 5500–3500 BC. In: P. Bogucki/P. J. Crabtree (eds.), *Ancient Europe 8000 BC–AD 1000*. 1. The Mesolithic to Copper Age (New York 2004) 286–292.
- LOUWE KOOIJMANS 2007  
L.P. LOUWE KOOIJMANS, The gradual transition to farming in the Lower Rhine Basin. In: A. Whittle/V. Cummings (eds.), *Going over: the Mesolithic-Neolithic transition in north-west Europe*. *Proc. Brit. Academie* (London 2007) 287–309.
- LOUWE KOOIJMANS 2009  
L.P. LOUWE KOOIJMANS, Agency in the process of Neolithisation a Dutch case study. *Journal of Arch. Low Countries* 1.
- LOUWE KOOIJMANS et al. 2005  
L.P. LOUWE KOOIJMANS/P. W. VAN DEN BROEKE/H. FOKKENS/A.L. VAN GIJN (eds.), *The Prehistory of the Netherlands* (Amsterdam 2005).
- LOUWE KOOIJMANS/JONGSTE 2006  
L.P. LOUWE KOOIJMANS/P. F. P. JONGSTE (eds.), *Schipluiden. A Neolithic settlement on the Dutch North Sea coast c. 3500 cal BC*, *Analecta Praehist. Leidensia* 37/38 (Leiden 2006).
- MARIËN 1952  
M.E. MARIËN, *Oud-België van de eerste landbouwers tot de komst van Caesar* (Antwerpen 1952).
- MEIKLEJOHN/CONSTANDSE-WESTERMAN 1978  
C. MEIKLEJOHN/T.S. CONSTANDSE-WESTERMAN, The human skeletal material from Swifterbant. *Palaeohistoria* 20, 1978, 39–89.
- MODDERMAN 1964  
P.J.R. MODDERMAN, The Neolithic burial vault at Stein. *Analecta Praehist. Leidensia* 1 (Leiden 1964) 3–16.
- MODDERMAN 1970  
P.J.R. MODDERMAN, Linearbandkeramik aus Elsloo und Stein. *Analecta Praehist. Leidensia* 3 (Leiden 1970).
- MODDERMAN 1981  
P.J.R. MODDERMAN, *Céramique du Limbourg: Rhénanie-Westphalie, Pays-Bas, Hesbaye*. *Hélium* 21, 1981, 140–160.

- MODDERMAN 1988  
P.J.R. MODDERMAN, *The Linear Pottery Culture: diversity in uniformity*. Ber. ROB 38, 1988, 63–140.
- MOLTHOF/RAEMAEEKERS 2004  
H. MOLTHOF / D. RAEMAEEKERS, *Wat te doen met onze doden? Het grafritueel van de Swifterbantcultuur in Nederland*. Paleo-Aktueel 16, 2004, 37–43.
- OTTE/EVRARD 1985  
M. OTTE/J.-M. EVRARD, *Salet: sépulture du Néolithique Moyen*. Helinium 25, 1985, 157–164.
- PIRSON et al. 2003  
S. PIRSON / M. TOUSSAINT / CH. FRÉBUTT, *Les matières primaires des mégalithes de Belgique: état de la question*. Notae Praehist. 23, 2003, 147–172.
- POTTERIE et al. 1999  
J. POTTERIE / C. MASSET / J.-G. ROZOY, *Gestes funéraires et post-funéraires dans une grotte mosane, Le Nichet-2 à Fromelennes (Ardennes, France)*. Notae Praehist. 19, 1999, 137–142.
- RADEMAKERS 1998  
P. C. M. RADEMAKERS, *De schedels van Rijckholt*. In: Id. (ed.) *De prehistorische vuursteenmijnen van Ryckholt-St. Geertruid (Maastricht 1998)* 231–243.
- RAEMAEEKERS 2003  
D. RAEMAEEKERS, *Cutting a long story short? The process of neolithization in the Dutch delta re-examined*. Antiquity 77, 2003, 740–748.
- RAEMAEEKERS et al. 2007  
D. C. M. RAEMAEEKERS / H. M. MOLTHOF / E. SMITS, *The textbook 'dealing with deaths' from the Neolithic Swifterbant culture (5000–3400 BC), the Netherlands*. Ber. RGK 88, 2007 (2009), 479–500.
- REINERTH 1939  
H. REINERTH, *Ein Dorf der Großsteingräberleute*. Germanen-Erbe 4, 1939, 226–242.
- SMITS/LOUWE KOOIJMANS 2001a  
E. SMITS/L.P. LOUWE KOOIJMANS, *De menselijke skeletresten*. In: LOUWE KOOIJMANS 2001a, 419–433.
- SMITS/LOUWE KOOIJMANS 2001b  
E. SMITS/L.P. LOUWE KOOIJMANS, *Menselijke skeletresten*. In: LOUWE KOOIJMANS 2001b, 479–498.
- TOUSSAINT 2002  
M. TOUSSAINT, *Problématique chronologique des sépultures du Mésolithique mosan en milieu karstique*. Notae Praehist. 22, 2002, 141–166.
- TOUSSAINT 2007  
M. TOUSSAINT, *Les sépultures néolithiques du Bassin Mosan Wallon et leurs relations avec les bassins de la Seine et du Rhin*. Arch. Mosellana 7, 2007, 9–51.
- VANMONTFORT 2004  
B. VANMONTFORT, *Converging Worlds. The Neolithisation of the Scheldt basin during the late fifth and early fourth millennium cal BC*. PhD Thesis (Leuven 2004).
- VANMONTFORT 2007  
B. VANMONTFORT, *Bridging the gap. The Mesolithic-Neolithic transition in a frontier zone*. Documenta Praehist. 34 (Ljubljana 2007).
- VAN DE VELDE 1979  
P. VAN DE VELDE, *Much ado about nothing: Bandkeramik funerary ritual*. Analecta Praehist. Leidensia 29 (Leiden 1997) 83–90.
- VERLINDE 1974  
A. D. VERLINDE, *A Mesolithic settlement with cremation at Dalfsen*. Ber. ROB 24, 1974, 113–117.
- VERLINDE 2005  
A.D. VERLINDE, *Mesolithic along the Overijssel Vecht. Camp sites and burial pits at Mariëenberg*. In: LOUWE KOOIJMANS et al. 2005, 179–182.
- VERLINDE/NEWELL 2006  
A.D. VERLINDE/R.R. NEWELL, *A multi-component complex of Mesolithic settlements with Late Mesolithic grave pits at Mariëenberg in Overijssel*. In: B.J. Groenewoudt/R.M. Heeringa/G.H. Scheepstra (eds.), *Het zandelandenrijk van Overijssel*. Nederlandse Arch. Rapporten 22 (Amersfoort 2006) 83–270.
- VERMEERSCH/WALTER 1980  
P.M. VERMEERSCH/R. WALTER, *Thieusies, Ferme de Hosté, site Michelsberg*. Arch. Belgica 230 (Bruxelles 1980).
- WATERBOLK 1958  
H.T. WATERBOLK, *Neolithische vlakgraven in Drenthe*. In: *Van Rendierjager tot Ontginner. Nieuwe oudheidkundige Ontdekkingen in Drenthe 3*. Nieuwe Drentse Volksalmanak 77, 1958, 3–17.

VAN WIJNGAARDEN-BAKKER et al. 2001

L.H. VAN WIJNGAARDEN-BAKKER / C. CAVALLO /  
TH. VAN KOLFSCHOTEN / C.H. MALIEPAARD,  
J.F.S. OVERSTEEGEN, Zoogdieren, vogels, rep-  
tielen. In: LOUWE KOOIJMANS 2001a, 181–242.

ZVELEBIL 1986

M. ZVELEBIL, Mesolithic prelude and Neolithic  
revolution. In: Id. (ed.), Hunters in transition:  
mesolithic societies of temperate Europe and  
their transition to farming (Cambridge 1986)  
5–15.

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