1. Introduction

Since 1997 the Faculty of Archaeology of Leiden University carries out large-scale excavations at Oss-Horzak, as part of the Maaskantproject. This project focuses on the long-term developments of the farming economy, social structures and hierarchy, ideology and burial ritual, settlement systems and perceptions of the landscape (Fokkens 1996). These aspects are studied diachronically from the Late Neolithic through the Roman period up to the (Early-)Middle Ages, within the Maaskant area and in relation to the wider region of the southern Netherlands and Northern Belgium.

The excavations at Horzak provide ample results for the Iron Age and the Early and Middle Roman period; both settlements and funerary sites, comparable to the results of earlier excavations within the project (e.g. IJsselstraat: Wesselingh 1993; Ussen: Schinkel 1988; Wesselingh 2000; Mikkeldonk: Fokkens 1986; Mettegeupel: Fokkens 1996). For the Late Neolithic and Early- and Middle Bronze Age, the evidence is rather limited, but not completely absent.

Starting from a remarkable Early Bronze Age discovery during the 2006 campaign at Oss-Horzak, we want to give a short overview of the Bronze Age occupation history of the Oss-region, not only to provide a context for the recent finds but also to include the data into discussions of the long-term developments of the region. The Late Neolithic and Bronze Age activities forms the start of a long-term evolution of a rural landscape, continued up to the first centuries AD.

2. The Horzak-project

Since 1997 almost 12 ha has been excavated in the Horzak area, resulting in tens of houseplans predominantly datable to the Iron Age and Roman period, (i.e. 800 BC – 250 AD; (Jansen et al. 2002). The houses are surrounded by pits, wells, small granaries (spiekers) and ditch systems. From earlier periods the site yielded only a small number of loose finds: a Mesolithic arrowhead and some Neolithic flint tools, collected during the removal of the topsoil. A Late Neolithic stone axe was found in the posthole of a houseplan from the Roman period (Fig. 4). For the Middle Bronze Age period (1800-1050 cal BC; hereafter MBA), only a cluster of postholes and pits and some dispersed pits were found. For the Late Bronze Age (1050-800 BC), only one pit is known (Schamp 2000).

One MBA pit contains a unique find: a ceramic mould, usable for casting several different types of bronze objects (Fig.1; 4; Fontijn et al. 2002). Besides the mould the pit contains pottery decorated with hollow (reed or bird bone) impressions, charcoal and parts of a ceramic object which possible was also an element of the mould. The charcoal could be radiocarbon dated to the 14th-13th century BC.

2.1 The 2006 excavation

The majority of the features from the 2006 excavation can be dated to the Roman period. For example, the northern part of a rectangular double ditch system with an elaborate entrance, surrounding a Roman period settlement, was found. Consequently, in this paper we will discuss just a
small fraction of the hundreds of features found.

2.2 Pit

The first is a small rectangular pit, measuring 65 cm in diameter and 35 cm in depth. The pit contains three distinct fills, which differ in colour (Fig. 2). Throughout the upper two fills, but mainly from the middle one, a variety of objects were recovered (Table 1). The most remarkable thereof was a small ceramic beaker, decorated with vertical fingernail impressions and little (complete and incomplete) perforations under the rim (Fig. 3). The beaker was found lying on its side and had already been partly broken in antiquity. Some other sherds were found in the direct vicinity, of which several presumably were and fewer were definitely not part of the small beaker.

The morphology and decorative techniques used on the small beaker and the ‘barbed-wire’ stamp decorated sherd – undoubtedly from another vessel - suggest a dating in the Early Bronze Age (c. 2000-1800 BC, hereafter EBA). The fabric of the small beaker, consisting of crushed quartzite pebbles, is in line with the suggested date. No evident tempering was visible for the small ‘barbed-wire’-stamp decorated sherd. Parallels for small EBA beakers from a settlement context are limited; the best available are consequently known from barrows (e.g. Ermelo: Modderman 1974, Garderen: Modderman 1955; Huneschans: Holwerda 1911, Emmerhout: Lanting 1969, see esp. Modderman 1955, 37 Fig. 4).

Other significant finds from the pit are two incomplete, oval formed shaped and horizontally

Figure 2 Cross-section of the small, Early Bronze Age pit with the position of the beaker

<table>
<thead>
<tr>
<th>Material</th>
<th>Number</th>
<th>Weight</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flint</td>
<td>21</td>
<td></td>
<td>Small fragments: production flakes</td>
</tr>
<tr>
<td>Flint</td>
<td>1</td>
<td>Larger</td>
<td>Larger worked fragment</td>
</tr>
<tr>
<td>Charcoal</td>
<td>4</td>
<td>Small</td>
<td>Small fragments</td>
</tr>
<tr>
<td>Botanical remains</td>
<td>5</td>
<td></td>
<td>Burnt emmer wheat (Triticum dicoccon)</td>
</tr>
<tr>
<td>Ceramic</td>
<td>21</td>
<td></td>
<td>Fragments of two incomplete, oval loom weights</td>
</tr>
<tr>
<td>Stone</td>
<td>3</td>
<td>Quartzite? Possible fragment of grinding stone</td>
<td></td>
</tr>
<tr>
<td>Pottery</td>
<td>36</td>
<td></td>
<td>Small fragments</td>
</tr>
<tr>
<td>Pottery</td>
<td>1</td>
<td>2/3 of a small beaker</td>
<td></td>
</tr>
<tr>
<td>Pottery</td>
<td>1</td>
<td>Sherd with barbed wire-stamp decoration</td>
<td></td>
</tr>
<tr>
<td>Bone</td>
<td>-</td>
<td>Burned bone, pig</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 Contents of the Early Bronze Age pit
pierced loom-weights. Early Bronze Age parallels for these objects are lacking. The loom-weights recovered from the EBA site of Noordwijk are cylindrical and have vertical perforations (Van Heeringen et al. 1998, 26 Fig. 14). The loom-weight from the Late Neolithic to EBA site of Molenaarsgraaf was discoid in shape and also pierced vertically (Louwe Kooijmans 1974, 228; Fig. 94). Oval or drop-let shaped loom weights are, however, frequently found in Late Bronze Age assemblages. A second clay object from Molenaarsgraaf – albeit was published as a fishing-net weight – is quite similar to the Horzak loom-weight (opus cit., 221-222; Fig. 88). Evidently, there was ample variation in loom-weight shape during the EBA.

Together with the other finds the pit contents hint of domestic activities such as eating, drinking, craft-production and food-processing (Table 1). As all of the constituents of so many different and ‘transformative’ domestic tasks entered the ground in a fragmented state, they may reflect an intentional meaningful depositional act centered on concepts of domestic life and fragmentation (cf. Brück 1999). Alternatively, the complex could simply reflect unintentionally incorporated domestic waste. Interestingly enough, the – fragmented and incomplete (!) – discoid loom-weight from Molenaarsgraaf was the only find to be unearthed from a 1 m wide perfectly round pit (Louwe Kooijmans 1974, 204). For a better interpretation of the Oss-Horzak assemblage a systematic inventory of pits datable to the EBA is necessary, a feat well beyond the scope of the present paper.

2.3 A possible houseplan?

Approximately 15 m to the east of the EBA pit lays a clearly distinct cluster of postholes (Fig. 4). Unfortunately the features had to be excavated in different trenches, and are cross-cut by 19th centuries drainage ditches. The postholes, with an average depth of 30 cm, show some distinctive alignments (Fig. 5, A) possibly representing several house-phases. It’s beyond doubt that the cluster of clear postholes represents a structure of some sorts. Its exact superstructure, proved hard to reconstruct because the distribution of the postholes allows different reconstructions, of equal regularity, but based on different systems of post-interrelation (Fig. 5 B; C). In figure 5 B several ground plans are reconstructed, consisting of roof-bearing posts placed at 1.4 m spacing and a span of 2.5 to 3 meters. In figure 5 C, the posts are interpreted as one structure, 25 m long, with four lines of roof-bearing posts and a triangular configuration of the posts of the outer and inner rows. A complicating factor is the northwest bent or angular section of
the posthole cluster. As it does not link up with the other sections, this suggests that in reconstruction option B four-, and in reconstruction option C two phases of a ground plan are reflected (or only one structure with a significant bent). Parallels for all reconstructions are not presently known to the authors, although the spacing of 1.4 m was also documented for a possible MBA house from Geldrop (Wesdorp 1997, 16; Fig. 11).

A problem is the dating of the structure(s), as the postholes yielded only three small and not datable fragments of pottery. We may only suggest that the absence of material suggests an early date within the larger settlement sequence for these structures. The postholes and ditches of Iron Age and Roman period plans, without exception, contain significantly larger amounts of material.

3. The Late Neolithic and Early and Middle Bronze Age A features in the region Oss

3.1 Oss-IJsselstraat

Two pits amidst the features of an Iron Age cemetery and a Roman period settlement site at Oss-IJsselstraat could be dated to the Late Neolithic or EBA. The pottery included potbeaker and ‘barbed wire’-stamp decorated beaker sherds (Fig. 5). Sherds from the same period were also found in several pits of a younger date. This can be regarded as intrusive. Together with a Late Neolithic flint arrowhead and some decorated potbeaker-sherds found during removal of the topsoil this small assemblage was interpreted as settlement refuse indicating occupation from the Late Neolithic and/or Early Bronze Age period (Wesselingh 1993, p. 113).

Oss-Frankenbeemdweg and -Kennedybaan

These two sites are situated directly to the north of the Ussen and Mettegeupel excavations, and have yielded material from the Late Neolithic and Bronze Age. The site Kennedybaan contained sherds with ‘barbed wire’-stamp decoration, the upper part of a flint axe and other flint tools (for location: Fig. 7 e). From the site Frankenbeemdweg potbeaker sherds together with flint tools are known (for location Fig. 7 f; Ball et al. 1998; Theunissen 1998). Both sites are located in the transitional zone between the coversand area and the river area. A coring campaign executed at the location Frankenbeemd indicated that the small sites were situated on the higher levee deposits of small streams that were later-on covered with clayey sediments by the

Figure 4 Location of the cluster of postholes and EBA pit. a not excavated; 19th century ditches; c postholes of structure; d other features; e MBA mould; f Late Neolithic stone axe.
river Meuse (Jansen et al. 1999). Both sites were presumably used continuously up to the Middle Bronze Age; finds from later periods are absent.

3.3 Oss-Schalkskamp
The excavations at Schalkskamp were also focused on features from the Iron Age and Roman period. But again, the excavations also revealed finds and features from the Bronze Age. A cluster of postholes, pits and wells were dated to the 19th/17th century BC. One pit contained 'barbed wire'-stamp decorated pottery, four of the wells contained Hilversum-pottery (sensu stricto), displaying cord- impressed decoration (Fokkens 1992). Two wells contained parts of wooden constructions, which were submitted to radiocarbon-dating. Two dates resulted in, respectively: 1890-1730 BC and 1870-1660 BC. In a nearby cluster of postholes the remains of one or two buildings is assumed. The alignments suggest an a-typical structure, with no direct dating. The structure is published as probably Bronze Age but has the same inconveniences as the Horzak structure.

4. The Middle Bronze Age B features in the region Oss

4.1 Oss-Mikkeldonk
The first house-structures dated to the Bronze Age were found in 1986, during the excavations in Mikkeldonk (Vasbinder et al. 1987). Three so-called 'bye-houses' were uncovered, that may represent three dispersed farmyards (Fokkens 1991). The houses differ in length from 10 to 30 m, have a three-aisled roof-bearing structure and fit well in the acknowledged typology of Bronze Age farms (Schinkel 1998). They represent a settlement system of isolated, autonomous farmyards, the so-called unsettled settlements (zwervende ervaer; wandering farmsteads). In this model the farmhouses are frequently relocated and the old yards are abandoned. The excavated houses at Mikkeldonk are supposedly each other successors (Fokkens 1991: Fig. 7 B; C; D).

4.2 Oss-De Geer
The oldest house in the Oss-region is discovered during the excavations at De Geer, between Oss and Berghem. The small house dates to the 15th century BC, and has a typically three aisled interior of which only the central aisle could be excavated, the outer posts had probably a limited depth (Jansen et al. 2003). Within the house a pit was dug out, which dated to the same period.

Almost 80 m north, a flat grave with cremation remains was found that also could be dated to the Middle Bronze Age, either one or two centuries later. The relation between the two is unclear, and because of the large distance in between one might suppose that this grave belonged once to yet another farmyard (Jansen et al. 2003).

4.3 Oss-Mettegeupel
The Mettegeupel excavation again revealed a cluster of pits dated to the Middle Bronze Age B. One of the pits was filled with a large amount of typically MBA B sherds. Another pit was interpreted as a drinking pool, which was surrounded by fences (Jansen 1997). Again an extensive area around the features was excavated without traces of other features or houseplans from this period. All excavated structures dated to the Iron Age.

4.4 Oss-Horzak
Again the only MBA features at the site are pits and postholes (Table 2). Concentrated in the northern part of the excavations some isolated pits were documented (Fig. 8 35.24; 61.99; 63.19; 75.9; 156.334 and 156.421 (of which 63.19 contained the mould depicted as Fig. 1), a remarkable cluster of three small pits/postholes with a relatively large number of sherds (Fig. 8 66.28; 66.29 and 66.30) and a cluster of (smaller) pits and postholes, in the north-western corner of the excavation. It was not possible to distinguish an indubitable structure, probably it's lying north of the excavated area.

4.5 Oss-IJsselstraat
An isolated pit was the only feature from the MBA at the IJsselstraat site. Within the fill of a well, typical MBA pottery was found. The construction of the well was made of oak (Quercus) (Wesselingh 1993). A radiocarbon-date of the wood supported the date suggested by the ceramics (Lanting & Van der Plicht 2003, 184-185).

5. Oss in Early and Middle Bronze Age period
Currently, eight sites with settlement traces from the Late Neolithic-Middle Bronze Age period are known from Oss. These can be divided into sites with clear houseplans (Mikkeldonk: three house plans (Fig. 7 B; C; D); De Geer: one house plan (Fig. 7 E) and isolated pits or clusters of pits and/or wells with no direct relation to a house (Mettegeupel, Schalkskamp, Horzak en IJsselstraat).

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3 GrN-19666 3485 20 BP; GrN 19667 3425 ± 30 BP (Fokkens 1992).

4 GrN-8305 3200 ± 30 BP.
Figure 5 The depths of the postholes (A) and the reconstructed houseplan(s) (B; C)
In two cases the clusters of pits can be related to postholes, which, however, cannot be grouped into evident houseplans (Schalkskamp, Horzak). The sites Frankenbeemdweg and Kennedybaan are only known from surface finds (Ball et al. 1998). An important question is the interpretation of the clusters of pits. Can they be seen as part of a yard of which the houses are not visible or were placed at a greater distance? Put otherwise: may EBA pits be used as a proxy for EBA house(sites), which – due to the irregularity of their constituent elements (cf. Arnoldussen & Fontijn 2006) – cannot generally be recognised?

Due to the scale of some of the excavations, extensive areas around the pit-clusters without other Bronze Age features have been uncovered. Assuming a relatively large size of the average Bronze Age yard it remains possible that these pits were once part of Bronze Age farmyards. At the same time, however, we must not overlook the possibility that the pits and wells represent a more diffuse use of the landscape with activities not (exclusively) focussed on and around farmyards, but in the extensive areas around these. The problem is that there is little direct – and no conclusive – evidence for the primary use of the pits, as is

<table>
<thead>
<tr>
<th>Description</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.24 Posthole</td>
<td>Middle Bronze Age pottery</td>
</tr>
<tr>
<td>61.99 Pit</td>
<td>Middle Bronze Age pottery</td>
</tr>
<tr>
<td>63.19 Pit</td>
<td>Mould, Middle Bronze Age pottery, charcoal</td>
</tr>
<tr>
<td>66.14 Pit</td>
<td>Middle Bronze Age pottery</td>
</tr>
<tr>
<td>66.23 Small pit</td>
<td>Middle Bronze Age pottery, charcoal</td>
</tr>
<tr>
<td>66.28 Small pit</td>
<td>Middle Bronze Age pottery, charcoal</td>
</tr>
<tr>
<td>66.29 Small pit / posthole</td>
<td>Middle Bronze Age pottery</td>
</tr>
<tr>
<td>66.30 Small pit / posthole</td>
<td>Middle Bronze Age pottery</td>
</tr>
<tr>
<td>75.9 Pit</td>
<td>Middle Bronze Age pottery</td>
</tr>
<tr>
<td>156.21 Pit</td>
<td>Middle Bronze Age pottery</td>
</tr>
<tr>
<td>157.21 Small pit</td>
<td>Middle Bronze Age pottery</td>
</tr>
</tbody>
</table>

Table 2 Features from the Middle Bronze Age B at the Horzak excavation
once more demonstrated by the EBA pit at Oss-Horzak, discussed at the beginning of our paper. The few known MBA house plans from Oss show pits and wells in their direct vicinity. Two pits (one of them inside the house) at the De Geer site have yielded radiocarbon dates that correspond quite well (Jansen et al. 2003).

We can conclude that from the Late Neolithic and Early Bronze Age we only have isolated pits, filled with domestic debris (Fig. 7 IJsselstraat; Horzak) and two surface sites. For the Horzak we have an enigmatic pit and an ill-dated houseplan that differs strongly from MBA-B or later structures. During the second half of the 19th century BC the first clusters of some wells and postholes yielding ‘barbed wire’-stamp pottery and Hilversum pottery were constructed. Two wells are radiocarbon dated to the transition of the Early and Middle Bronze Age (Fig. 7, Schalkskamp). For the MBA-A (1800-1500 BC) only a few pits are known (Fig. 7, Mikkeldonk; De Geer).

It’s from the 15th century BC that we have the first clear houseplans (Fig. 7, De Geer) (cf. Bourgeois & Arnoldussen 2006), together with (clusters of) pits (and postholes) at two other locations (Fig. 7, Horzak; Mettegeupel). An isolated pit is known from IJsselstraat. In the 14th and 13th century three houses are erected on the site Mikkeldonk, together with at least one well. The farmyards are dated by pottery and radiocarbon-dates (Fokkens 1991). In the same period dates the pit with the mould, and probably the nearby cluster of pits and postholes. The flat grave from De Geer is dated in the final centuries of the MBA-B (calibrated radiocarbon date: 1395-1049 BC).

It is clear that the Late-Neolithic and Bronze Age sites are (for now?) exclusively situated on the northern flank of the coversand area and the adjacent river area, from where also a few Middle Neolithic sites are known (Ball et al. 1998). The afore mentioned Late Neolithic and Early Bronze Age sites may represent (small?) settlements that can be seen as the first small-scale reclamation of the forests on the sandy soils (Bakels 2002). From this point onwards, the habitation and exploitation of the region would evermore intensify. It is likely that the isolated pits, wells and other features from the Late Neolithic, Early Bronze Age and MBA-A formed the first gradual but persistent reclamation of the sandy soils of the coversand area north of Oss.

Possible settlement sites from the same period are found in the river area, close to the sandy soils (Ball et al. 1998). It is not until the MBA-B that any clear-cut information on the structure of house plans, farmyards and settlement sites as a whole can be obtained. Activities at the Late Neolithic/EBA-sites seem to continue up until the MBA (and sometimes afterwards). At the same time, new areas are reclaimed. An ongoing process in which gradually yet constantly, the cultural landscape extends dramatically in the ensuing centuries.

Bibliography


5 GrN-27566 3170 ± 60 BP (pit in house); GrN-27158 3400 ± 40 BP (well 95 m north of house); GrN-27158 3190 ± 40 BP (well 20 m north of the house) (Jansen et al. 2003).

6 GrN-19971 3000 ± 60 BP (ibid.).
Figure 7 The Late Neolithic and Early and Middle Bronze Age sites in the region Oss. a not excavated; b recent ditches; c postholes of structures; d other features; e Kennedybaan; f Frankenbeemdweg; g cluster of pits/isolated pits
Figure 8 Features from the Middle Bronze Age B at the Horzak excavation. a not excavated; b MBE features; c house structure


Louwe Kooijmans L.P., 1974. The Rhine/Meuse Delta; four studies on its prehistoric occupation and Holocene geology, (Oudheidkundige Mededelingen van het Rijksmuseum voor Oudheden 53-54), Leiden.


Samenvatting
Sinds 1997 wordt door de Faculteit der Archeologie van de Universiteit Leiden archeologisch onderzoek verricht in Oss-Horzak. Het gebied herbergt een uitgestrekte vindplaats met nederzettingssporen uit de Midden- en Late Bronstijd, IJzertijd, Romeinse tijd en Volle Middeleeuwen. Inmiddels is bijna 12 ha vlakdekkend onderzocht waarbij tientallen structuren uit genoemde perioden zijn blootgelegd. Uit eerdere perioden werden alleen losse vondsten gevonden: een mesolithische pijlpunt, neolithische vuurstenen werktuigen en een steenbijl uit het Laat-Neolithicum (Jansen e.a. 2002).

De campagne van 2006 leverde voor de eerste maal vondstmateriaal op uit de Vroege Bronstijd. In een kuil werd een kleine, vrijwel complete beker gevonden, versierd met verticale nagelindrukken en kleine ronde indrukken (een enkele maal doorboringen) onder de rand. In de kuil lag ook een scherf met wikkeldraadversiering, fragmenten van twee ovale, keramische weefgewichten, fragmenten steen, houtskool, verbrand dierlijk bot van varken en verbrande korrels emmertarwe. De kuil ligt geïsoleerd in de opgraving, rondom ontbreken sporen die in dezelfde periode zijn te dateren. In de directe omgeving ligt wel een huisplattegrond die sterk afwijkt van de vele plattegronden uit de IJzertijd en Romeinse tijd. Ook het aardewerk (slechts drie kleine fragmenten!) biedt geen mogelijkheid tot een datering, en maakt een connectie met de vroege bronstijdkuil aantrekkelijk. De plattegrond heeft echter geen enkele parallel in een vroege bronstijdnederzetting, en voorzichtigheid is dus geboden.

De kuil aan zich past in een patroon van geïsoleerde kuilen en clusters van kuilen en/of waterputten en paalsporen die we uit de vroegeste bewoning van de zandgronden bij Oss kennen. Een patroon waarin de kuilen en clusters de erven representeren van de eerste ontginners van de bosrijke zandgronden, die direct grenzen aan het al langer geëxploiteerde rivierengebied.

Résumé
Depuis 1997, la faculté de l’Archéologie de l’Université de Leyde fait des recherches au quartier neuf ‘Oss-Horzak’, à Oss, ville située dans le sud des Pays-Bas, dans le Brabant Septentrional.

L’endroit récente un vaste site où on trouve
des traces des habitats de l’âge du bronze moyen et de la fin de l’âge du bronze, de l’âge du fer, du temps romain et du haut moyen âge. Aujourd’hui, une surface de près de 12ha a été fouillée entièrement et grâce à ces recherches, une dizaine de structures datant des périodes mentionnées, ont été découvertes. Quant aux périodes de l’âge de bronze moyen, on n’a trouvé que des objets isolés: une pointe de flèche mésolithique, des outils de silex néolithiques et une hache de pierre de la fin du Néolithique (Jansen et al. 2002).

La campagne de 2006 a fait resurgir pour la première fois matériel du début de l’âge du bronze. Dans un puits, une petite coupe pratiquement intact a été trouvée, décorée par des empreintes d’ongles et des petites empreintes rondes (parfois percées) au dessous du bord. Dans le puits, il a été également découvert un fragment de poterie avec décoration du ‘fil de bobinage’, des fragments de deux poids à tisser céramique ovales, fragments de pierre, du charbon, des os d’animal (de porc) et des graines de blé de seau brûlées.

Le puits a été situé isolé et autour du puits, des traces datant de la même période sont absentes. Dans les environs, un plan, construit de traces de poteaux fortes a été mis à jour, mais celui diffère d’un nombre d’autres plans, qui datent de l’âge de fer et de l’âge romain, situés dans le même site. En se basant sur la poterie (trois petits fragments), le matériel trouvé nous ne permet pas de datation, et faire un rapport entre le puits et le début de l’âge du bronze est tentant. Pourtant, le plan n’a pas de parallèle avec les habitats du début de l’âge de bronze, même pas en dehors de la ville d’Oss, donc il faut être prudent. Sans ce plan, le puits convient à un modèle de puits isolés et d’ensembles de puits (d’eau) et des traces de poteaux, que nous connaissons des habitats des zones sableuses à Oss des temps les plus réculés d’habitation. En combinant les résultats de ces périodes venant des différentes fouilles à Oss, nous pourrions peut être formuler une explication pour ce modèle.
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LEUVEN

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