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Fragmenting the Chieftain : a practice-based study of Early Iron Age Hallstatt C elite burials in the Low Countries

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Citation

Vaart, S. A. van der. (2017, December 14). *Fragmenting the Chieftain : a practice-based study of Early Iron Age Hallstatt C elite burials in the Low Countries. Papers on Archaeology of the Leiden Museum of Antiquities*. Sidestone Press, Leiden. Retrieved from <https://hdl.handle.net/1887/58610>

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Date: 2017-12-14

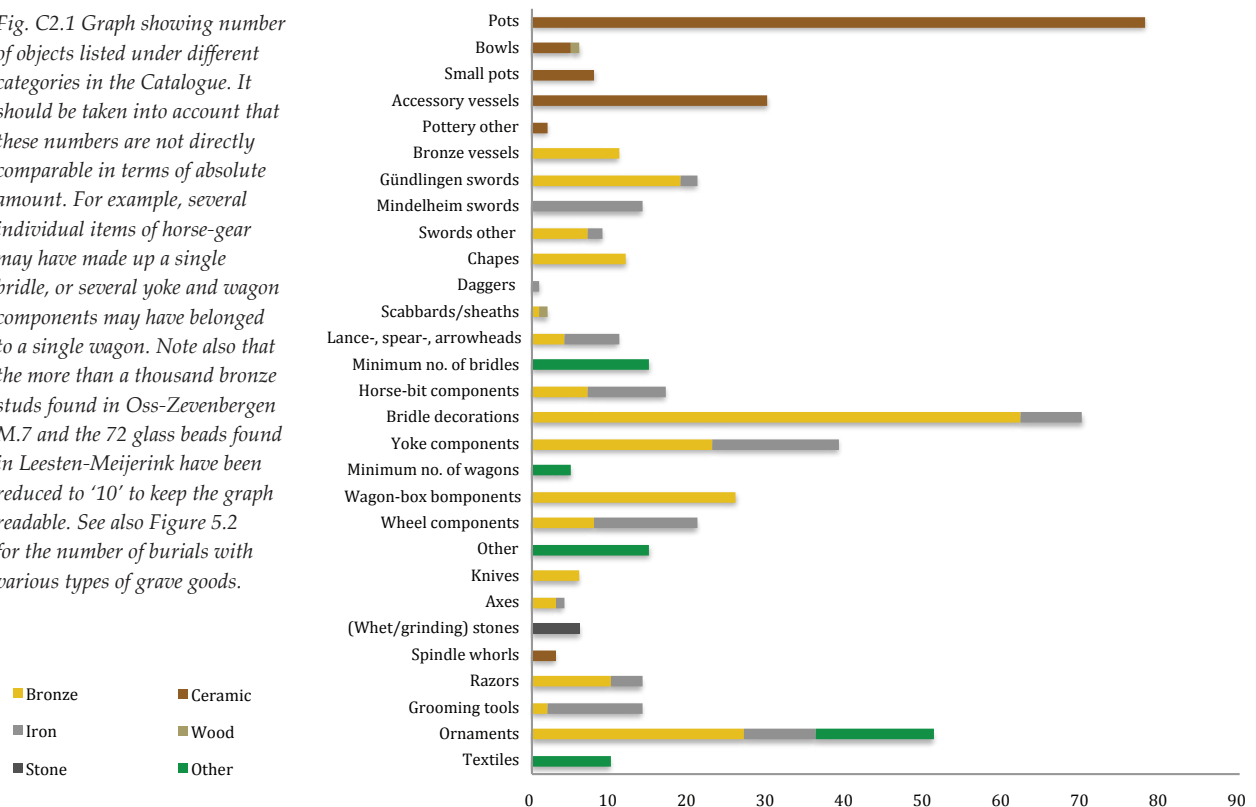
C2 Terminology and typology

This chapter gives an overview of the categories of objects found in the elite burials and the terminology and typology used to discuss them in order to clarify what is meant when certain terms are used. In some cases research history is discussed as this influences how certain terminologies and typologies are or have been used. Per category a summary overview also is given of the items found in Dutch and Belgian elite burials that fall in that category to enable the reader to look up objects per kind and type (Fig. C2.1; see also App. A2). How these objects were made, may have been used and how they are interpreted is discussed in Chapter 6.

C2.1 Pottery

Over 120 items of pottery are listed in the Catalogue and summarized in Table A2.1 (ceramic spindle whorls are discussed in Section C2.5.4 under ‘tools’). They come in a range of shapes and sizes (Fig. A2.1), and generally are labeled as ‘pots’, ‘urns’, ‘bowls’, ‘small pots’ and ‘accessory vessels’. This is intended to give the reader a general idea of the pottery found. It should be noted that these categorizations are subjective and sometimes the result of the item’s excavation and research history. The labeling of a pot as ‘large’ for example can be my individual evaluation, but it also can be that the pot is lost and the label is based on a description of said pot. A ‘small pot’ for example could have been an accessory vessel, but find circumstances may not have recorded it as such. There is a frequently recurring combination of a larger pot, usually used as an urn, with a

Fig. C2.1 Graph showing number of objects listed under different categories in the Catalogue. It should be taken into account that these numbers are not directly comparable in terms of absolute amount. For example, several individual items of horse-gear may have made up a single bridle, or several yoke and wagon components may have belonged to a single wagon. Note also that the more than a thousand bronze studs found in Oss-Zevenbergen M.7 and the 72 glass beads found in Leesten-Meijerink have been reduced to ‘10’ to keep the graph readable. See also Figure 5.2 for the number of burials with various types of grave goods.



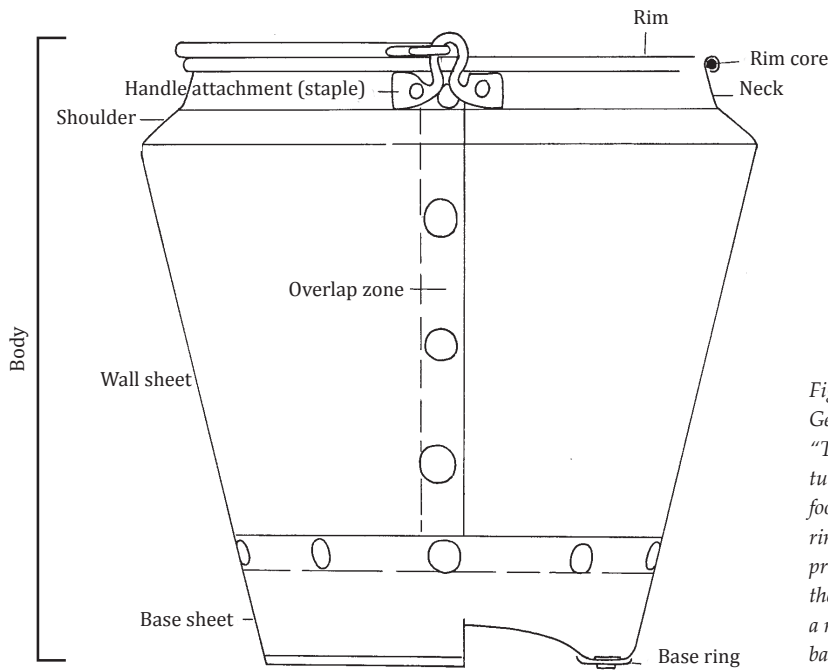


Fig. C2.2 Bucket terminology (adapted from Gerloff 2010, 41–3; Prüssing 1991, abb. 1).
“The bottom sheet of the vessel is formed into a tub shape. The base of the tub is formed into a flat foot ring surrounding a hollow omphalos. The foot ring and its angle with the side of the vessel are protected by a variety of strengthening devices, the base- or angle plates. If these are in the form of a ring-shaped single casting, this is referred to as base ring” (Gerloff 2010, 41–3).

smaller accessory vessel. These accessory vessels may have held food or drink offerings (Louwen in prep.).

C2.2 Bronze vessels

In the following sections the terminology used when discussing bronze vessels is described so that it is clear what is meant by certain terms. The problematic ‘type Kurd’ is discussed to clarify how this term is used in the current research. Following this an overview of the eleven Early Iron Age bronze vessels known from the Low Countries is given, some of which were not recognized as such prior to this research (Fig. A2.2; Tab. A2.2). They all originate from either graves or probable burial contexts (Braat 1935; De Wit 1998; Holwerda 1934; Mariën 1958; Pare 1992; Pleyte 1877; Roymans 1991, 37; Van Heeringen 1998; Warmenbol 1978).

C2.2.1 Basic terminology and typology

The bronze vessels found in the Low Countries generally are referred to as *situlae*. However, a *situla*, as defined by Von Merhart (1952) must have a cross-handle (*Bügelhenkel*). In his terminology, vessels with one or more individual handles are referred to as *buckets*. Following Von Merhart (1952) and Gerloff (2010, 395) the ‘*situlae*’ of Baarlo, Oss and Rhenen are actually buckets and in this research therefore are referred to as such, even though they generally are known as ‘the situla of’. In order to be able to discuss the different components of the bronze vessels some basic terminology is presented in Figure C2.2. It is adapted from Gerloff’s (2010, 41–3) and Prüssing’s

(1991, abb. 1) terminology for buckets, and is used when describing features of the bronze vessels in the dataset.

C2.2.1.1 The type Kurd bucket

The buckets from Rhenen, Oss and Baarlo usually are referred to as type Kurd buckets (Fokkens/Jansen 2004, 57; Van Heeringen 1998, 81). However, the usage of this term is somewhat problematic and this type therefore is discussed here to clarify how it is applied in the present research. According to Von Merhart (1969), Kurd buckets have an inverse conical body hammered out of one or two parts. The base is made from a single plate with a raised edge. The body and base plates are riveted together, with the rivet heads hammered flat. The walls merge clearly but smoothly into the short shoulder which has two or three semicircular ribs hammered outwards. The ‘handles’ are opposing bands of thin bronze sheet on which angular, cast rings generally hang. The places where the thin bronze sheets attach to the body usually are widened on both sides in a semicircle and bear a hammered decoration. However, Von Merhart (1969) also argues that apart from the ‘Hajdu Böszörmény’ type (with threadlike handles on the shoulder), which is partly contemporaneous, no other ‘*situla* forms’ are found in the early Hallstatt period. Operating under this assumption, Von Merhart has classified some very different forms as ‘Kurd type’, thereby devaluating “the type into a collection of ‘*situla*-shaped’ bronze buckets” (Van Heeringen 1998, 82). As Von Merhart’s usage of this type has become so vague, this research follows Gerloff’s (2010, 237) somewhat simpler description: Kurd buckets (also

referred to as Danubian-style) are characterized by strap-shaped handle attachments or ring carriers (*Bandhenkel*). The handle-attachments are riveted to the body and form a loop between the rim and shoulder. The ring handles fall outside the body of the bucket when at rest. Only when a vessel meets this description is it referred to as type Kurd.

C2.2.2 The Dutch and Belgian bronze vessels

Six (mostly) complete bronze vessels and the remains of at least another five have been found in the Low Countries (see Fig. A2.2; Tab. A2.2). The (mostly) complete vessels were found at Baarlo, Ede-Bennekom, Meppen, Oss-Vorstengraf, Rhenen-Koerheuvel and Venlo. While incomplete, the type of bronze vessel found at Wijchen can be identified from the fragmented remains. Fragments of bronze vessels also were found at Court-Saint-Etienne La Ferme Rouge T.3, T.4 and T.5 and Gedinne-Chevaudos T.A (though not all were recognized prior to this research (see Chapter C6) and the types of vessels represented by the fragments could not be determined). These bronze vessels date from Hallstatt C or the beginning of Hallstatt D (see Chapter 3 and remainder of the Catalogue).

The buckets and situlae found in the Low Countries are made from sheets of bronze plate riveted together in various configurations. The design and production method can differ per vessel, but at present there is no evidence that the people living in the Low Countries had mastered these forging techniques. The vessels therefore are believed to have been produced elsewhere, as also indicated by typological parallels. While the origin of the more fragmentary objects cannot be determined, the (mostly) complete and intact bronze vessels are most likely imports from Italy (Meppen (or France): cf. Nortmann 1998; Wijchen: Roymans 1991, 43), the East(?)-Alpine region (Baarlo, Ede and Oss: Roymans 1991, 43; Rhenen-Koerheuvel) or the adjoining region to the south (Venlo; Egg 1985, 376ff.; Von Merhart 1969, 287ff.). (Most of) these vessels likely found their way north along the Rhine from the Hallstatt Culture in southern Germany (Roymans 1991, 43). Signs of wear were observed on the vessels from Oss-Vorstengraf, Rhenen-Koerheuvel Venlo and Wijchen, and possibly on Ede-Bennekom as well that indicate they were suspended from their rings or handles for extended periods of time, suggesting some kind of use (e.g. Fig. C28.2). This is discussed further in Section 6.1.

C2.3 Weaponry

In the following Sections the sword terminology used is presented to clarify certain terms. Following this the typologies in use for the swords and accompanying chapes, as well as the genesis of certain types are discussed. An overview of the 37 swords and nine chapes found in

Dutch and Belgian elite burials is given in Table A2.3. The remaining weaponry is considered in Section C2.4.2, indicating also how this research differentiates between arrow-, spear- and lanceheads. How the weaponry may have been used is discussed in Section 6.2.2.

C2.3.1 Swords and chapes

In this section a short introduction to sword terminology is given to allow for discussion of the various components of the swords found. A very brief research history of these swords and sword typologies then is given as these are relevant to the current research. There is also a general discussion of the types of swords found in the dataset.

C2.3.1.1 Terminology

Figure C2.3 gives an overview of the various terms used to refer to the parts of a sword. Note that when a sword is described the hilt is up and the tip is down. For example, the grip is situated lower than the pommel. The blade segment that runs underneath the hilt is referred to as the *tang*. The *pommel* or *pommel hat* serves as a counterweight at the top the handle to balance the sword. It also can assist in drawing the blade (from a scabbard or victim *etc.*). The upper part of the tang on which the pommel is fixed is called the *pommel-piece*. The ricasso is a beveled edge between the shoulders and the blade that serves to protect the user's hand (either by catching or slowing down an opponents blade from sliding up or to stop a user's hand sliding onto the blade) or allows for a different grip. Where the blade runs into the tang is known as the *shoulders*.

C2.3.1.2 Research history and typology

Views on typology, chronology, and the origin of the bronze and iron swords of the early Hallstatt period have changed and evolved in the last 100 years, and as a result the typologies in use are strongly linked and intertwined with the research history of these objects. Similar to problems with chronology (see Section 3.2), when Author A classifies a sword as Type A, this may not mean the same thing as when Author B does. Understanding how these swords were considered in the past helps one to understand how the various typo(chrono)logies in use came to be and how this relates to our understanding of these blades. The research history of these swords therefore is summarized here (see Milcent (2004; 2012) and Trachsel (2004) for more detailed overviews of how typology, dating and our understanding of these swords have developed).

In the early 20th century P. Reinecke (1965 [1911]) – soon followed by J. Déchelette (1927 [1913]) – distinguished two types of bronze swords based on their associated chapes and length (Milcent 2004, 73). Mariën (1958, 253–5; 1975) then determined that the bronze swords of Court-St-Etienne fall into two types: type

Villement and type Miers. Both terms are still used in the latest French typology (Milcent 2012, fig. 9.A).

The groundwork for the current sword typology was laid by J.D. Cowen (1967). He was the first to divide 'Hallstatt period swords' into Gündlingen and Mindelheim types, the terms still used by many today. At the time it was believed that these two types of swords occurred contemporaneously. His types were argued to have not only chronological value, but also geographic and cultural connotations (Cowen 1967, 401–3). A problem with his classifications, however, was that they were based primarily on the variability in pommel attachment, rather than on the blade as a whole (*cf.* Milcent 2004, 76).

P. Schauer (1971) in turn incorporated German finds and developed a typology that not only considered the manner of attachment of the pommel, but also the general morphology. This scheme added a number of types and was used by H. Gerdsen (1986) in his well-known publication. At the start of the 1990s, C.F.E. Pare (1991; 1992) demonstrated that Gündlingen swords represent an earlier type and in fact (partially) predate the Mindelheim swords. His work not only considered the swords, but also the associated finds and in particular the associated chapes. As discussed in Section 3.2.1, his work introduced the so-called Gündlingen phase (also known as the Wehringen phase).

Typology in the 21st century

In the last 15 years both P.-Y. Milcent (2004; 2012) and M. Trachsel (2004) published major works on the typo(chrono)logy of Early Iron Age swords. Trachsel (2004; Fig. C2.4) created his scheme by defining several different typochronological 'Etappen' (steps) within the Gündlingen (five steps) and Mindelheim types (six steps). He distinguishes two series of Mindelheim swords based on their cross-section. Trachsel (2004, 107–44) agrees with Pare that the Gündlingen type precedes the Mindelheim type, though argues that there is some overlap chronologically. He also argues that the Mindelheim Serie I developed from the Gündlingen Etappe 3 (Trachsel 2004, 124). Milcent (2004, Ch. 2) in contrast does not use the term Gündlingen type, and instead incorporates a number of French and German types into his scheme (which are equivalent to Trachsel's type Gündlingen Etappe 1–5): types Holme Pierrepont, Villement, Wehringen, Weichering and Miers. Milcent does use the Mindelheim type, and divides them into six groups (Milcent 2004, 91–5). He pairs them all with their respective chapes (Fig. C2.5).

In recent years publications of Dutch finds have primarily identified such swords as Gündlingen type (*e.g.* Fontijn 2002, 171–2; Roymans 1991), while in the Belgian research tradition both type Gündlingen and types Holme Pierrepont, Villement, Wehringen and

Weichering are employed (*e.g.* De Mulder 2011, 285; Warmenbol 1988). In this research the overarching types Gündlingen and Mindelheim are used, and where possible it is noted which of Trachsel's (2004) Etappen or Milcent's (2004; 2012) French types a sword falls into as this can provide insights into which swords and burials might be earlier and which later (Section 3.4.1.1; Tab. A2.3). The two main Late Bronze–Early Iron Age sword types – Gündlingen and Mindelheim – are discussed in more detail below. With regard to the former an overview is given of how views on the genesis of it have evolved, as this is relevant to understanding how the elite burial practice evolved in the Low Countries (see below).

C2.3.1.3 Type Gündlingen swords

Gündlingen swords usually are made from bronze, though a few iron ones are known. Early iron examples resemble the bronze ones (Fontijn 2002, 171; O'Connor 1980, 246; see also Section 6.2.1.1). They are quite short, usually between 70 and 75 cm long, though some

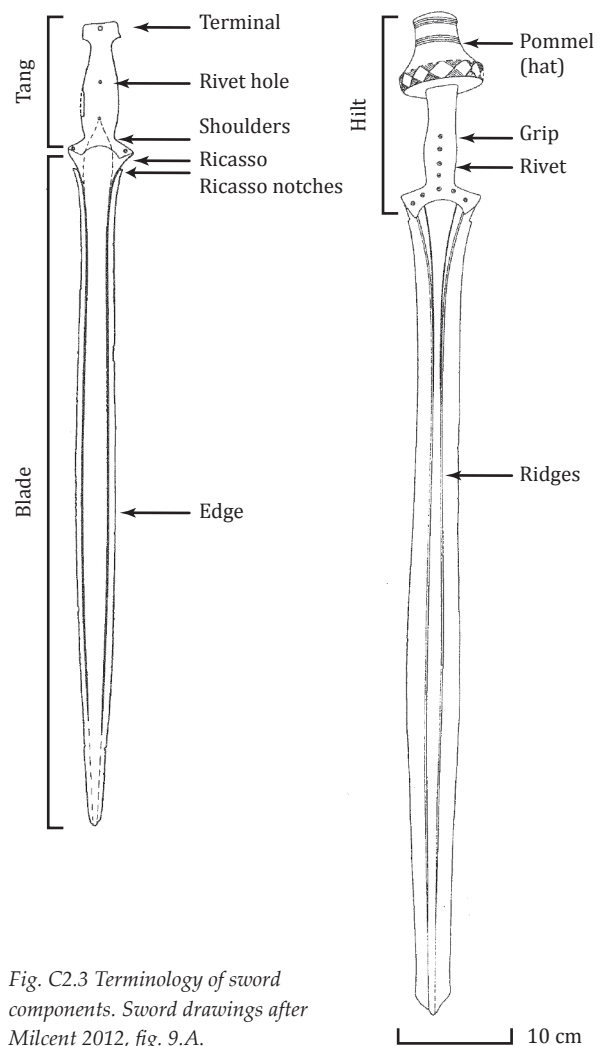


Fig. C2.3 Terminology of sword components. Sword drawings after Milcent 2012, fig. 9.A.

longer and shorter ones exist. The original length of most of the Dutch and Belgian swords in the Catalogue unfortunately cannot be determined as they have not survived complete. The Gündlingen swords generally are considered to be primarily slashing swords (Cowen 1967, 391; see also Section 6.2), and often are found with bronze chapes. From bottom to top, these swords generally have 'blunt' tips with a rounded or V-shape form (Burgess/Colquhoun 1988, 114). They have long, narrow and slightly leaf-shaped blades, the edges of which are demarcated by a ridge, which transitions into the ricassos near the bottom of the tang (Cowen 1967, 393–4). Broad and angular shoulders blend the tang and blade. While to my knowledge no bronze swords with pommels have been found, the Gündlingen swords appear designed for securely attaching a pommel piece (*cf.* Burgess/Colquhoun 1988, 114). It therefore is assumed that these swords would have had hat-shaped pommels, similar to those found on Mindelheim swords, only slightly smaller (Burgess/Colquhoun 1988, 114; Cowen 1967, 393). The two iron Gündlingen swords with bronze hilts found at Battel, however, appear to have flat handles (Fig. C2.6; Warmenbol 2015, fig. 4.15). These are discussed further in Section 6.2.1.1. The pommel and grip were fastened with rivets (two, four or six of them).

Bronze Gündlingen swords are found from Bohemia/Bavaria in the east, to the North- and West-Alpine region, to the Mediterranean, as well as in central and southern France, the Low Countries, and even parts of Britain and Ireland, with concentrations in the Thames Valley, the Low Countries, the Jura and southwest France (*e.g.* Gerloff 2004, fig. 17.8). It was noted already by Cowen (1967, 396) that this general distribution of Gündlingen swords represents swords from burials, while such blades from watery contexts seem to be found primarily in western Europe.

The genesis of the Gündlingen sword: Atlantic or North-Alpine development?

The origin of the earliest bronze Gündlingen swords and accompanying chapes has long been contested (*e.g.* Burgess/Colquhoun 1988; Cowen 1967; Fontijn 2002; Gerdson 1986; Meyer 1984; Milcent 2004; 2012; Schauer 1971; 1972; Trachsel 2004; Warmenbol 1988). In the last 40 years scholars have gone back and forth in their ideas regarding the genesis of these swords, with some arguing for a North-Alpine origin (Burgess/Colquhoun 1988; Cowen 1967) and placing their development in the French/British sphere (sometimes referred to as the Atlantic tradition; Fontijn 2002, 171; Meyer 1984; Milcent 2012; O'Connor 1980, 246; Warmenbol 1988). It also has been argued that both Continental and Atlantic versions exist (Roymans 1991, 35; Schauer 1971). Establishing the origin of the Gündlingen swords is important as the

bronze swords and the graves they are found in are believed to be (partially) earlier than the burials with clear Hallstatt Culture imports. If the bronze blades turn out to be Atlantically produced then they reflect a contact network in the Late Bronze Age that differs from the Early Iron Age one (see Section 5.7). In this manner determining where and how this sword type evolved could be key to understanding how the elite burial practice evolved in the Low Countries (Chapter 5). While originally considered a North-Alpine development (Cowen 1967), it has recently become more and more accepted that the Gündlingen swords first developed in the Atlantic tradition with the British Ewart Park/Thames type swords recognized as their immediate predecessors (Fig. C2.5; Gerloff 2004, 141–5; Milcent 2004; 2009; 2012; Warmenbol 1988). Understanding of the origin of the early bronze swords has developed in concordance with the varying research focuses over the years, and ideas regarding whether the Hallstatt burials in the Low Countries are those of invaders naturally have played a significant role. In general though, Warmenbol's (1988) argument that in the Low Countries Atlantic proto-Hallstatt (Ewart-Park/Challans and Thames type) swords were replaced by Atlantic Hallstatt (Gündlingen/Villemont type) swords, and that most (if not all) Gündlingen blades and accompanying chapes found in Dutch and Belgian burials and depositions were of Atlantic manufacture (with the inevitable exceptions) still stands (Milcent 2012, fig. 9.A).

Typology Dutch and Belgian Gündlingen swords and (accompanying) chapes

There are 19 bronze swords (or fragments thereof) in the Catalogue that can be identified as type Gündlingen. Of these 13 can be assigned to a specific Etappe within Trachsel's (2004) scheme or a type within Milcent's (2004; 2012) scheme (Fig. A2.3; Tab. A2.3). There are also two iron short swords which appear to be Gündlingen/Holme Pierrepont type swords (*CSE-LQ.UC.16** and *CSE-LQ.UC.26*; Fig. A2.3). In Section 6.2.1.1 it is argued that these may be local productions, and if so it is striking that they most strongly resemble *early* Gündlingen swords. There are also a dozen bronze chapes, of which a little more than half were found together with Gündlingen swords and one with an iron sword (in Court-St-Etienne La Ferme Rouge T.3; see Tab. A2.3).

C2.3.1.4 Iron Mindelheim swords

Mindelheim swords generally are seen as the successors to the Gündlingen swords (*e.g.* Fontijn 2002, 172), though recent research indicates that they overlapped chronologically (see Sections 3.4 and C2.4.1.2). While mostly made of iron, some bronze swords are known in Central Europe (for example the sword from Mindelheim itself; Gerdson 1986, 127). The Mindelheim swords are

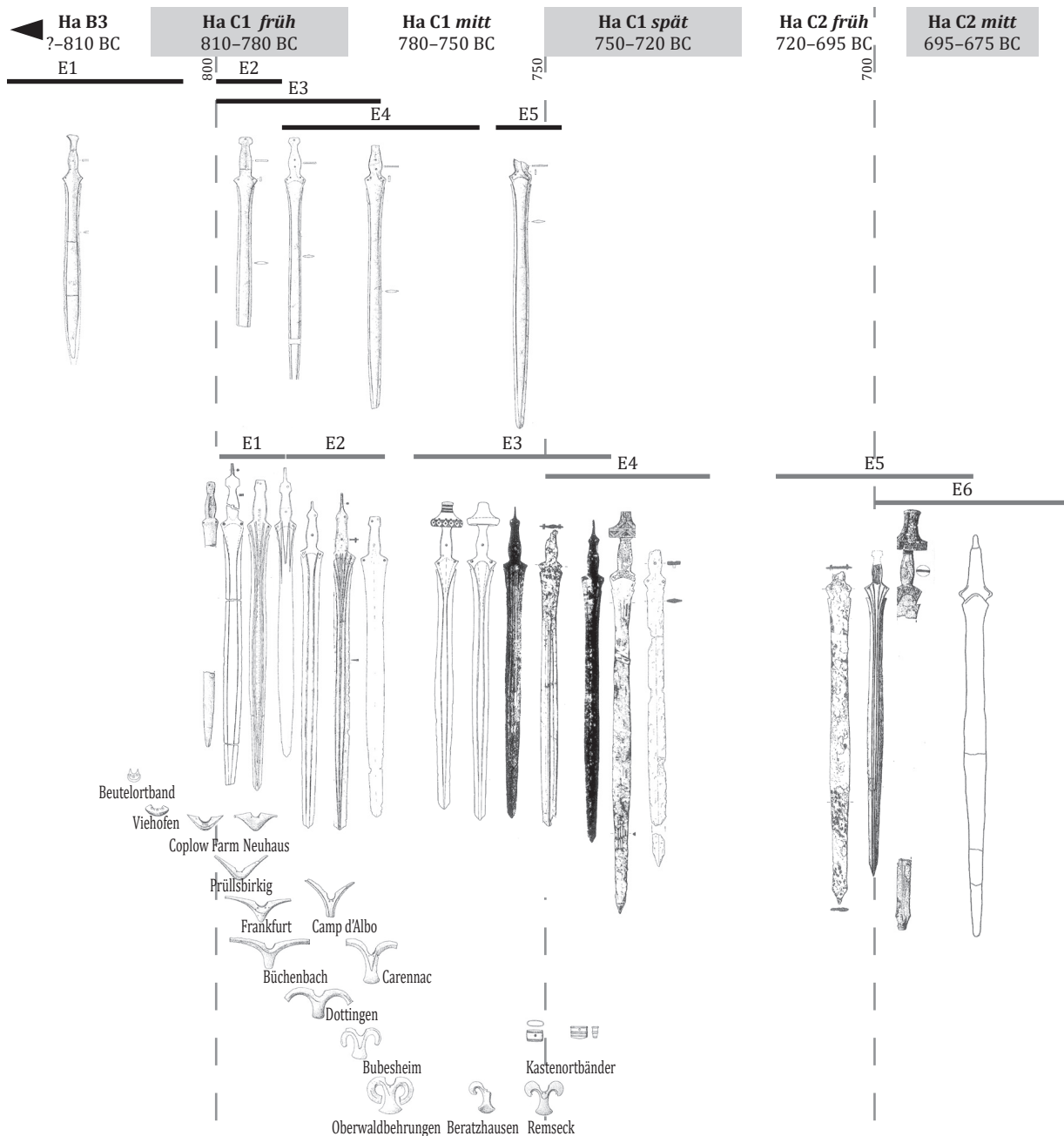


Fig. C2.4 Sword and chape typochronology according to Trachsel (2004), displayed chronologically (and simplified). Figure adapted from Trachsel 2004, 109–30; figs. 58, 63 and 65–7.

larger than the Gündlingen swords and have hat-shaped pommels and usually have short ricassos beneath the hilt. They have heavy, leaf-shaped blades with broad necks and their widest point down quite low. The whole design of this type of sword suggests they were used to deliver slashing blows (see also Section 6.2.2.4). As discussed above in Section C2.3.1.2, both Trachsel (2004) and Milcent (2004; 2012) recently published typologies of

Mindelheim swords. Trachsel distinguishes three series of five to six Etappen (Fig. C2.4). Milcent (2004, 87–95), in contrast, divides them into six groups of ‘Hallstatt swords’ based on a number of characteristics (Fig. C2.5). The typology of iron swords, however, is complicated by the fact that they tend to be poorly preserved. The iron swords of the Early Iron Age in the Low Countries generally are labeled as Mindelheim type, though for many their

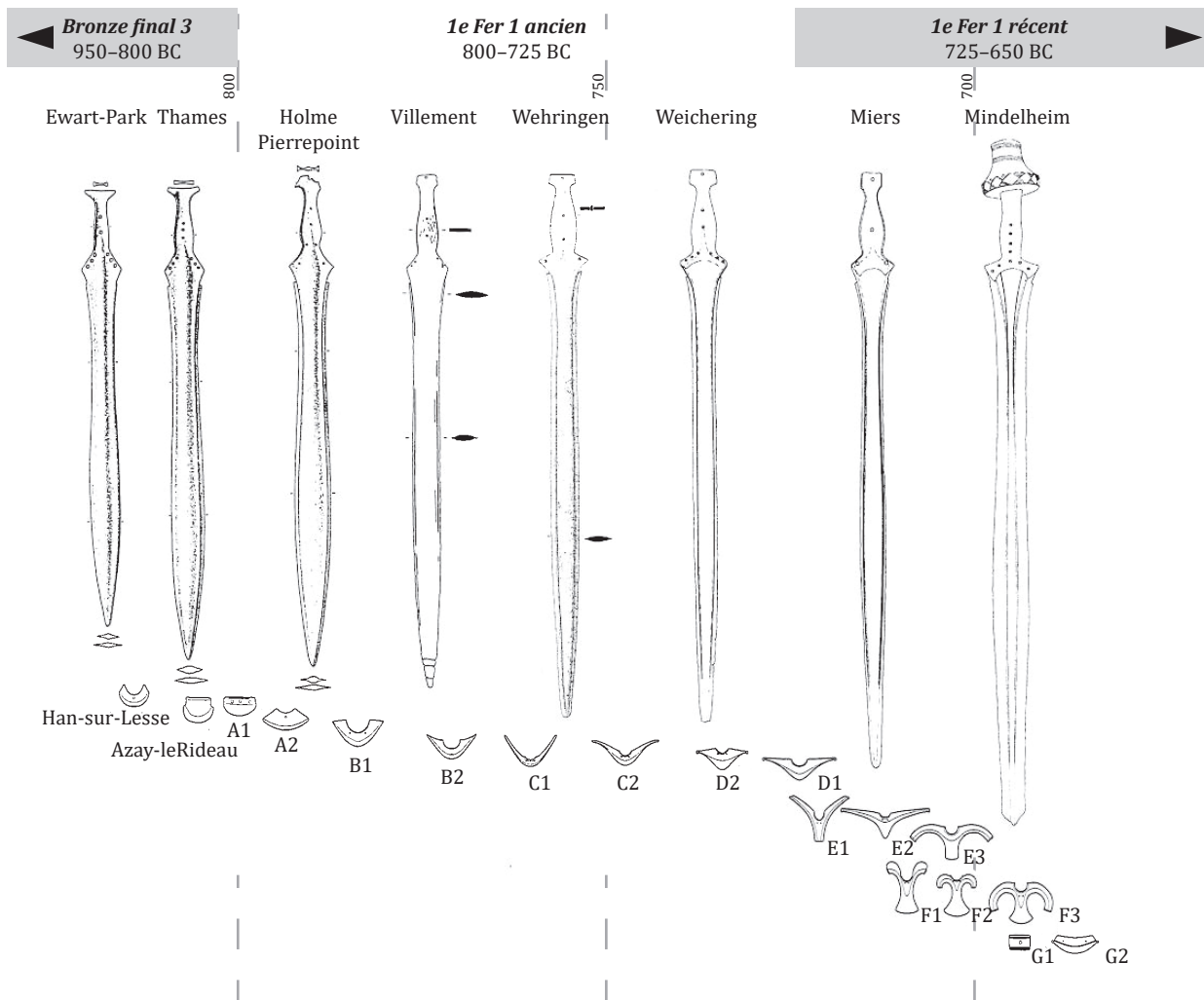


Fig. C2.5 Sword and chape typochronology according to Milcent (2012). Figure adapted from Milcent 2012, fig. 9.A.

poor preservation in my opinion makes it problematic to label them as such. In this research twelve swords in the Catalogue are identified as type Mindelheim, and another two as maybe being of this type (Fig. A2.3). These swords are classic Mindelheim type swords, and have been included in a number of overviews (Fokkens/Jansen 2004, 80; Roymans 1991, 38). The Mindelheim swords in the Low Countries generally are identified as imports from the Hallstatt Culture of Central Europe (though Roymans (1991, 35) for example did state that local production cannot be excluded; Section C2.3.1.3). The Mindelheim sword of the Chieftain of Oss with its elaborate gold-decorated handle is discussed further in Section 6.2.1.2, where it is posited that it may have been produced in a workshop in southern Germany or Upper Austria specialized in such blades. How the famous ‘lightning’ decorations (Fig. 6.3) should be interpreted is discussed there as well.

C2.3.1.5 Other (unique) iron swords

There are also two swords in the dataset that are very different from the others in the Catalogue. These are the sword from Court-St-Etienne La Ferme Rouge T.3 and Wijchen. The sword from Court-St-Etienne La Ferme Rouge is unique in the Low Countries, and stands out both because of its antenna-style hilt and its comparatively short length. While ‘antenna’ weaponry generally are considered *Leitfunden* for the Hallstatt D phase, it should be noted that some such weaponry, like the sword from Court-St-Etienne La Ferme Rouge T.3, is also dated Hallstatt C (cf. Sievers 1982). The sword from Wijchen, in contrast, is one of the longest known in the Low Countries, with only the sword from Oss being at all comparable. It also appears to be unique in design in Northwest Europe and is discussed in detail in Section 6.2.1.3.

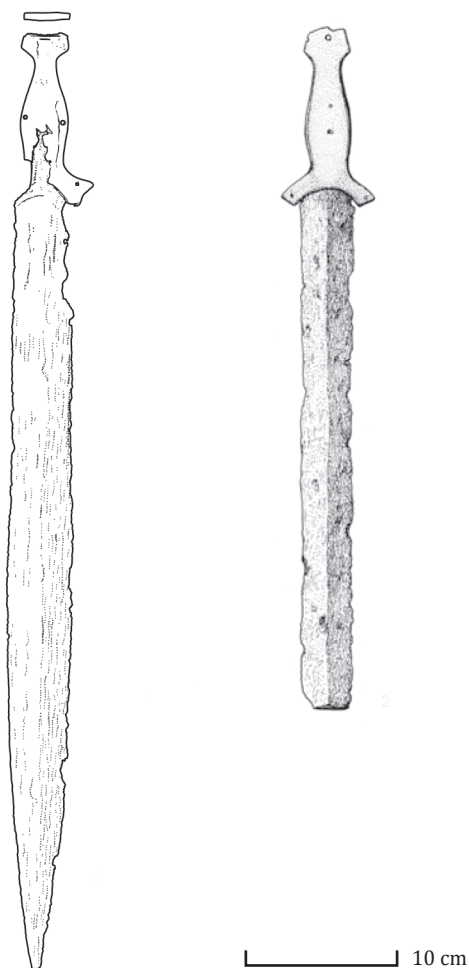


Fig. C2.6 Two iron swords from Battel with bronze handles. Figure after Warmenbol 2015, fig. 4.15.

C2.3.1.6 A rider's blade?

The Gündlingen and Mindelheim swords frequently are described as cavalry swords or as swords meant to be used by mounted warriors (*e.g.* Fontijn 2002, 171–2). This idea can be traced back to Cowen (1967, 418–20) who argued that the Gündlingen and Mindelheim swords, as well as the accompanying chapes (as defined by him) must have been made for and used by mounted warriors. His argument is based on a number of factors. He firstly links the development of rigid horse-bits with cheek-pieces to the development of a ‘cavalry sword’ as these happened at roughly the same time, and the fact that a harsher bit (than was previously used) is needed in battle to control your horse (see also Sections 6.3.5.2 and 6.3.6.4). He also considers that the wagon burials of the Hallstatt Culture in Central Europe often contain three sets of horse-bits. These are interpreted as for a pair of horses to pull the wagon, and a third for the ‘warrior’s charger’. Cowen’s (1967) article, however, most commonly is linked to the

idea that the ‘Hallstatt chape’ was designed to be able to draw the sword with one hand (as the other supposedly would be holding a shield) while mounted on a horse by hooking the chape behind the thigh or foot (though Cowen actually refers to Brewis (1924) and J.L. Meyers for this idea; Mariën (1952, 295) published a similar suggestion). The longer length of the associated swords was thought to support the idea that these weapons belonged to equestrians.

While it is certainly possible that mounted warriors used these swords and chaped scabbards, there is actually little evidence to indicate this, particularly so for the Gündlingen swords. Firstly, a mounted warrior does not need to brace a scabbard with his/her foot in order to draw a blade as a scabbard can be worn in such a way that the sword can be drawn without holding the scabbard. Secondly, there does not appear to be a strong association between the Gündlingen swords and their chapes with horse-gear. In the Low Countries there are no bronze swords (with or without chapes) associated with horse-gear (see also Fig. C1.1). Indeed, the only *possible* association of a chape with horse-gear is in Court-St-Etienne La Ferme Rouge T.3, and in that case the horse-gear likely refers to a wagon, rather than a rider (see also Section 6.3.5.4). Moreover, in the Low Countries the Gündlingen swords (partially) date earlier than the burials with Hallstatt Culture horse-gear (see Chapter 3). Alternative explanations for how these swords were used are discussed in Section 6.2.

C2.3.2 Other weaponry

The remaining items of weaponry in the dataset include iron and bronze lance-, spear- and arrowheads, a dagger and some decorated organic fragments that may from a scabbard (Tab. A2.3). The latter is discussed in detail elsewhere (Section C12.3.1). An iron dagger with decorated bronze sheath from Haps is unique within the dataset, though a rather similar one was found deposited in the Schelde near Oudernaarde (Chapter C11; De Mulder 2011, 426–7; fig. 11.12).

The typology of the lance-, spear- and arrowheads does not tell us much, but the difference between the three kinds warrants brief discussion as they indicate different kinds of use. Functionally, a spear is a weapon that is thrown, while a lance is thrust (and an arrow is shot with a bow). However, when only the ‘head’ is found, it is not always apparent how the weapon was used. While arrowheads are generally small and lanceheads large, it is a gradual spectrum in which there is quite some overlap. The identification of an archeological find as a lance-, spear- or arrowhead therefore is generally more a size than a functional determination and should be taken as such in this research.

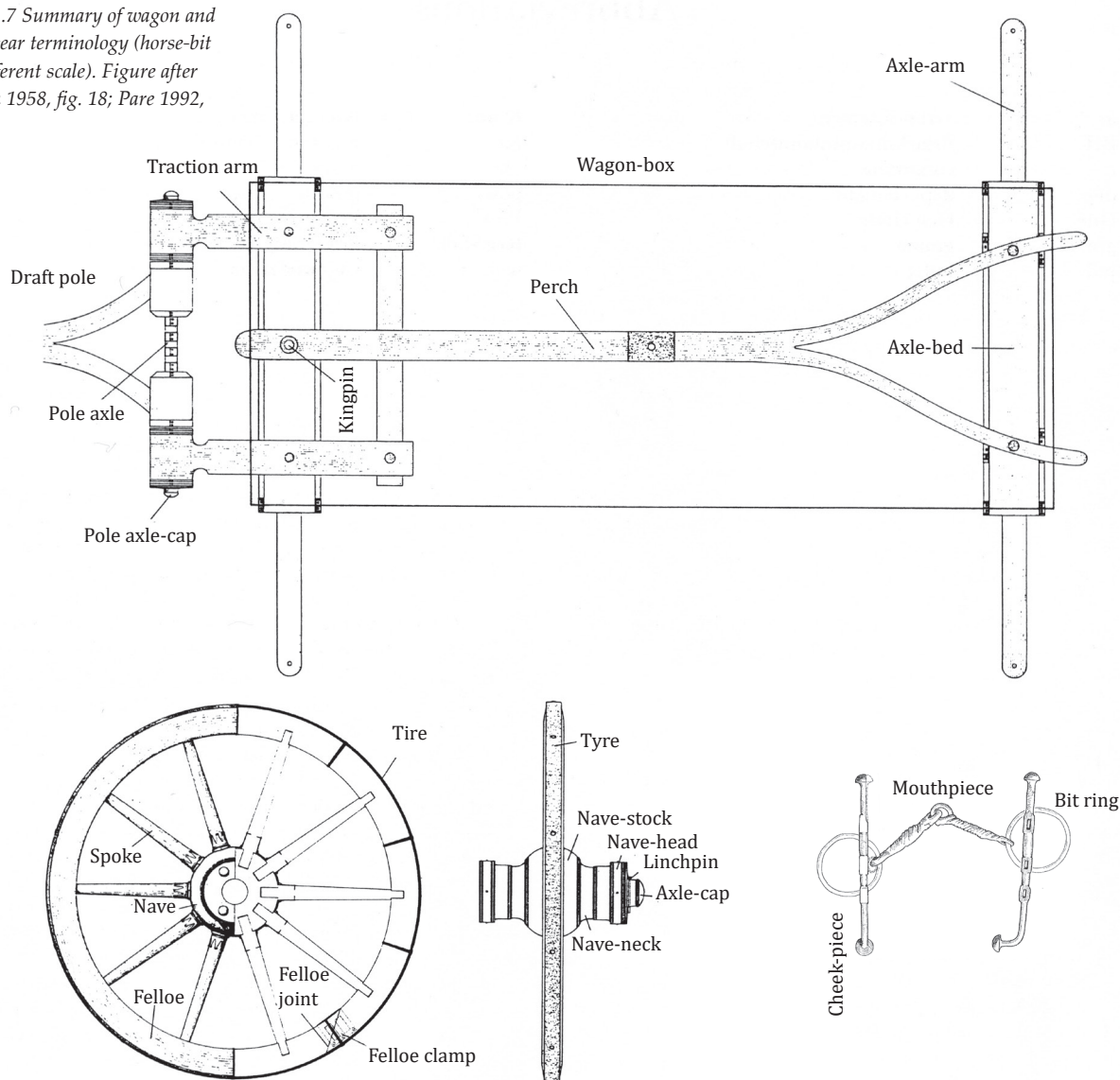
C2.4 Horse-gear and wagons

In the following sections the terminology used when discussing wagons and horse-gear is introduced so that it is clear what is meant by certain terms. A summary overview of 41 wagon components, 11 yoke components and over a hundred bridle components found in the Low Countries is also given (Fig. A2.4; Tab. A2.4). I also discuss the problematic issue of how loose rings frequently are interpreted as horse-gear even when there is no basis for this and how the current research deals with this problem. How the elaborate wagons (*Prunkwagen* in German), associated yokes and horse-gear appeared, were made and used, as well as how they may have been perceived is discussed in Section 6.3.

C2.4.1 Terminology

Figure C2.7 gives an overview of the terminology used when discussing horse-gear and wagons, upon which this section shortly elaborates (see Section 6.3 for more details). The Hallstatt Culture wagons consisted of a rectangular wagon-box with low sides, a draft pole attached to the undercarriage and spoked wheels which often were equipped with iron tires. The wagon-boxes and wheels in particular frequently were fitted with metal decorations (Pare 1992; Section 6.3.2). The wagons were pulled by two horses hitched to the wagon with a wooden yoke that often also was decorated with metal fittings (Section 6.3). In addition to being strapped into the yoke, the horses would have worn bridles, which are the leather headpieces worn by the horses, which often (but not always) incorporate a horse-bit and various decorations. Figures

Fig. C2.7 Summary of wagon and horse-gear terminology (horse-bit is a different scale). Figure after Mariën 1958, fig. 18; Pare 1992, fig. 1.



4.11, 4.14, 7.1 and C2.8 give possible reconstructions of Hallstatt Culture bridles, but it should be noted that many different configurations of leather straps are possible. The reins are the leather straps used by a rider or driver to direct the horse. These usually are attached to bit rings on the horse-bit, but also can be attached to the leather of the bridle (though this is rare and not attested for any Early Iron Age find).

C2.4.2 Horse-gear and wagon components from the Low Countries

This section discusses the horse-gear as well as the yoke and wagon components found in the Catalogue. These are (parts of) 14 horse-bits and ca. 100(–1000) horse-gear decorations (depending on whether one counts the roughly 1000 bronze studs found in Oss-Zevenbergen M.7 as a single find or individually), eleven yoke components, 27 wagon decorations and 14 items relating to the wheels (some of which are reconstructed in Fig. C2.8). Note that these numbers are intended to give a general overview but that they change depending on how you count individual objects and fragments. As also discussed in Sections 6.3.5.4 and 7.2.3.4, when only a single item of horse-gear or a single wagon decoration is found, it could be an extreme *pars pro toto* deposition of horse-gear or a wagon, but it also could be that the component was reused as something

else, like an ornament. The practice of secondary use (and interment) of horse-gear as ornaments has long since been suspected and discussed (Koch 2012; Metzner-Nebelsick/ Nebelsick 1999).

C2.4.2.1 Yoke and wagon components from Dutch and Belgian burials

The types of yoke and wagon components found in the Low Countries are depicted in Figure A2.4 and include the following. Bronze sheet bands (WIJ.10) found at Wijchen would have decorated the yoke. Bronze yoke rosettes were found in the burials of Court-St-Etienne La Ferme Rouge T.A (CSE-FR.T4.7–8) and Oss-Vorstengraf (OV.21). These would have been attached to the top of the yoke (see Figs. 4.14 and 7.1). Wooden knobs covered in bronze studs (OZ.M7.21) discovered at Oss-Zevenbergen M.7 would have served the same function (Fontijn/ Van der Vaart 2013, fig. 7.42). Such bronze studs also decorated other yoke straps and the yoke itself. A single bronze *Jochschnalle* (CSE-LQ.TA.6) would have decorated the yoke straps (Fig. C2.8). Two iron toggles (OV.22–23) would have attached the belly strap of the yoke. An elaborate chest-piece made up of iron rings and pendants (CSE-FR.T4.5*) is unique within the dataset and most likely would have decorated the chest-strap of a yoke. The Wijchen burial also yielded a number of wagon-box

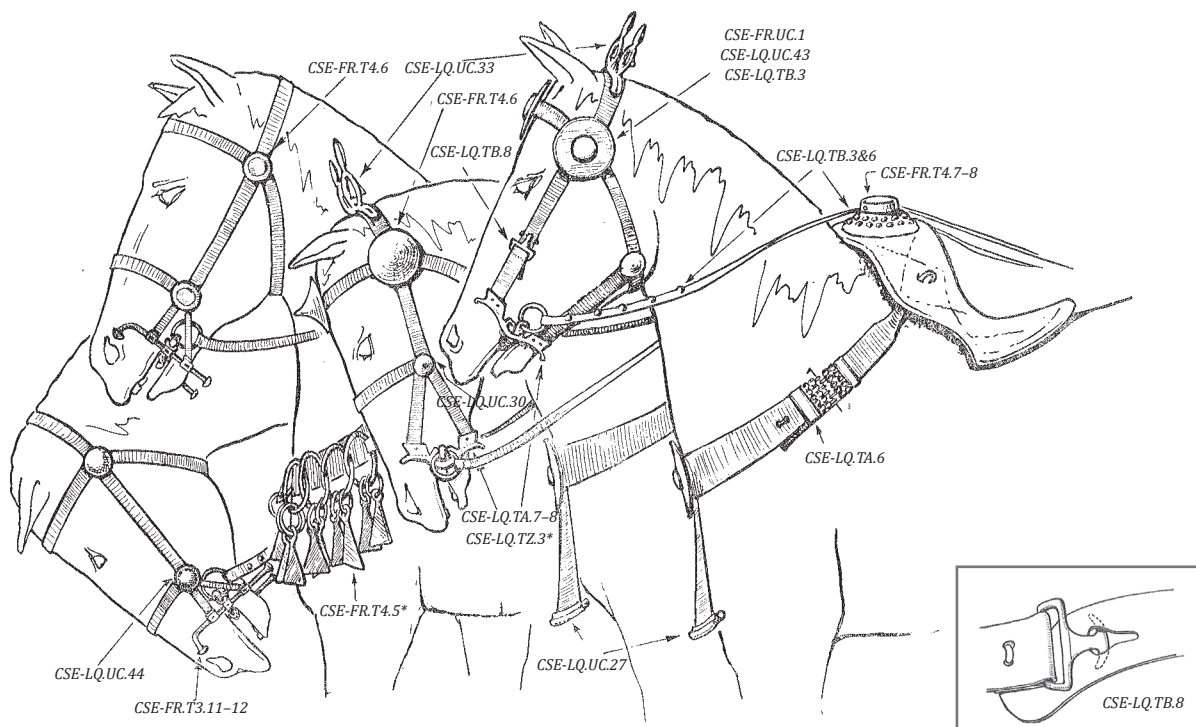


Fig. C2.8 Reconstruction of (some of the) horse-gear and yoke components from Court-St-Etienne. The inventory numbers are given in the figure. Note that in my opinion the horse-bits CSE-FR.T3.11–12 are reconstructed the wrong way round (see Section 6.3.4). Figure 7.1 gives the correct reconstruction. Figure adapted from Mariën 1958, figs. 46 and 4.8.

decorations (*WIJ.11ab–17*), a possible reconstruction of which is given in Figure 4.11. Two types of linchpins have been found in the Low Countries. These are the bronze trident-shaped linchpins of Wijchen (*WIJ.18a–d*) with Etruscan-style protomes and the iron Bohemian linchpins of Rhenen-Koerheuvel (*RK.05c–d* and *RK.06b*). The Wijchen linchpins are considered the finest of their kind (Pare 1992, 91). Both kinds had multiple dangling metal rings that would have jingled when the wagon moved (see also Section 6.3.5). The Wijchen linchpins attached through axle-caps (*WIJ.19a–d*), the only such objects to be found in the Low Countries, and they all show extensive use-wear (Fig. C35.8). While the Rhenen burial did not yield axle-caps, it did yield the fragmentary remains of a type Breitenborn nave (*RK.06c*, *RK.08* and *RK.09*), again the only such objects to be found in the Low Countries.

C2.4.2.2 Bridle components from Dutch and Belgian burials

The types of bridle components found in the Low Countries are depicted in Figure A2.4 and include the following. A pair of horse-bits was found in five burials and with one exception all horse-bits are made of iron (the Wijchen examples are bronze). The horse-bits from Court-St-Etienne La Ferme Rouge T.3 and Oss-Vorstengraf are type Platenitz bits with curved cheek-pieces, with the Oss bits showing use-wear from the horses' mouths. Half of such a bit was found also in Limal-Morimoine T.1. The horse-bits from Meerlo are also classic early Hallstatt C bits (in Kossack's scheme; Fig. 3.1), but they have fanned cheek-pieces. While these appear to be typical Hallstatt Culture horse-bits, they are so large that they are unusable (see Sections 6.3.6.4 and C23.3). The bits from Wijchen are simple snaffle bits with bit rings and show extensive use-wear (Fig. C35.5; Sections 6.3.6.4 and C35.2). Three bronzes (*CSE-LQ.TA.7–8* and *CSE-LQ.TZ.3**) were interpreted as cheek-pieces from a horse-bit by Mariën (1958, 25–33; 85–7) and they are discussed further in Section C2.4.3 below.

The majority of bridle components found in the Dutch and Belgian elite burials take the form of bronze decorations (Fig. A2.4). While it should be noted that some of these bronzes could have been used as decorations of the yoke (compare for example the studs from Oss-Zevenbergen M.7 with those from Court-St-Etienne La Quenique T.B) or as ornaments on the body (Koch 2012), they are here identified as bridle decorations because of observed use-wear or associated artifacts. The bronze studs or hemispherical sheet-knobs are a common type of decoration and occur in a range of sizes. They are made of sheet-bronze, have a hemispherical domed head and two legs. The studs and sheet-knobs would have decorated the bridle straps or reins (or yoke panels, see above). Bronze hemispherical ring-footed rein-knobs were

found in two burials, and would have helped guide the straps of the bridle (*RK.03* and *WIJ.08*). Bronze *phalerae* (discs with hooks) were found primarily as stray finds, but also in several burials and generally are a common kind of bridle decoration. Bronze *Tutuli*, a specific kind of *phalera*, likewise would have guided or decorated the bridle straps (*CSE-LQ.UC.28–29* and *OV.13*). There are also numerous bronze and iron rings in the dataset, both with round and square cross-sections and ranging in size from ca. 10 to 120 mm in diameter. As discussed below in Section C2.4.4, only those metal rings found together with horse-gear, yoke and wagon components are interpreted as such. In short, it was not only the wagons that were elaborately decorated, so were the horses. And these are only the metal components, there may have been elaborate organic decorations as well that do not survive (for example dyed leather).

C2.4.3 Horse-gear with British connections?

The vast majority of the horse-gear found in the Dutch and Belgian graves can be identified as Hallstatt Culture imports, or at least as inspired by Hallstatt Culture horse-gear. There is one exception where a connection with the British Isles seems evident: the cheek-pieces from Court-St-Etienne La Quenique T.A and T.Z (Fig. A2.4). These cheek-pieces are an unusual design, and to my knowledge the only ones known of this exact type (also confirmed by Koch 2014, *pers. comm.*). The only known parallels for them come from the Llyn Fawr hoard (Fig. C2.9; Alcock 1961). Here one complete and a fragment of a second similar bronze were found. The finishing on these indicates they were made to be seen from only one side as one side is nicely finished while the other was left rough. This rough side has been rubbed smooth from use. Use-wear on the Llyn Fawr examples indicates that a solid object like a metal rod would have run diagonally through the central openings, which is consistent with use as cheek-pieces for a horse-bit (Alcock 1961, 149).

Meyer (1980, 74) also noted the similarity between the bronzes from Court-St-Etienne and Llyn Fawr (as did Warmenbol 1993, 98), though Meyer argues that the Llyn Fawr ones “differ in important details, which make a direct import unlikely”. Instead he aligns with O'Connor (1980, 13) who argued for a local production of the Llyn Fawr pieces under the influence of Continental forms. One wonders though how strong such influence could have been as they are so extremely rare. While the cheek-pieces from Court-St-Etienne and Llyn Fawr may vary in design detail, they are certainly similar and imply the same functionality in bridle design. In any case, these items of horse-gear from Court-St-Etienne La Quenique T.A and T.Z certainly appear indicative of contacts of a local, Atlantic nature rather than with Central Europe (see also Section 5.7).

C2.4.4 The problem of the loose ring

Bronze and iron rings are found regularly in Early Iron Age burials. The graves from Oss, Rhenen and Wijchen, for example, each contain an assortment of rings. Both bronze and iron rings with a round cross-section come in many different sizes and are found on a variety of different types of objects. The same is true for (bronze) rings with a square cross-section. Both kinds of rings are found as components of horse tack (Trachsel 2004, 530). Rings, however, served a variety of different functions. When rings occur singly it therefore usually is only possible to determine their function by the find context (*cf.* Mörtz 2012, 161; Trachsel 2004, 530). It is sometimes believed that the square cross-section of some rings may have helped 'block' the reins when pulled on (Willms 2002). However, almost any type of object that incorporates rings has been found with rings with both a round cross-section and a square cross-section. The cross-section of a loose ring therefore cannot provide much information about its original function. The following gives some examples of the possible uses of rings.

A common type of ring found in Hallstatt burials is the bit ring. The bridle and reins attach to bit rings on the sides of the mouthpiece (see Section C2.4.1). These rings can have both a round and a square cross-section, and usually have a diameter of 36 to 51 mm

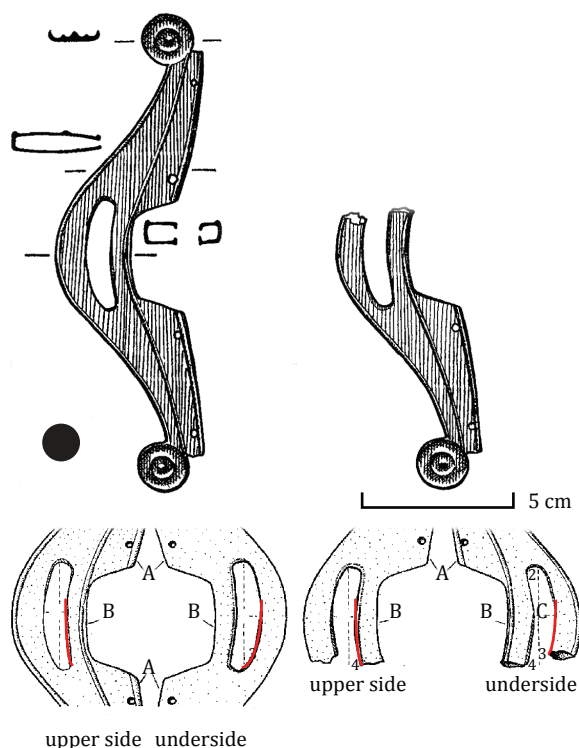


Fig. C2.9 The bronzes from the Llyn Fawr hoard with use-wear marked in red. Figure after Alcock 1961, figs. 1 and 2).

and are ca. 4–6 mm thick (Trachsel 2004, 53–5; 484). In some cases they show (extreme) signs of wear, such as the bit rings from Wijchen (Fig. C35.5). Rings also feature in the construction and fastening of the yoke. The attachments of the belly and chest straps can incorporate rings (*e.g.* Fig. 4.14). In some cases the leather decoration panels, either from the yoke itself or from the straps, are preserved and still bear rings. A leather panel from Ins (Switzerland) even bears a ring with a square cross-section (Koch 2006, 163). Rings also can serve to guide the reins in a variety of ways (Fig. 6.7). So-called chain-dividers can incorporate a variety of different rings, with both round and square cross-sections (Trachsel 2004, 146; 536). Rings can dangle from a variety of different linchpin types, such as Bohemian type (as found in Rhenen, see Section C28.2) and trident-shaped ones (as found in Wijchen, see Section C35.2). The dangling rings usually have a round cross-section, though some Bohemian linchpins also have (iron) rings with a square cross-section. For slightly earlier finds it also has been argued that rings can be from a scabbard or sword belt construction (Mörtz 2012). Toiletries found in Early Iron Age burials often have several tools (ear spoon, nail cutter and tweezers) suspended from a single ring, which either can have a round or a square cross-section (Kossack 1959, 14; Willms 2002, 49). Bronze buckets often have rings dangling from their strap-shaped handles. The vessels from Baarlo and Rhenen, for example, both have rings with a square cross-section. The rings from Rhenen show wear from the bucket being suspended by the rings. Though the vessels more commonly have rings with a square cross-section, they also occur with rings with a round cross-section (Gerloff 2010).

In summary, there are many different kinds of objects that incorporate rings in their construction. Therefore, even though wagon and horse-gear components are their most common use, one must be cautious when interpreting the original function of loose rings. In this research, therefore, only rings found in association with wagon, yoke or horse-gear components are identified as such.

C2.4.5 Horse-gear or scabbard element

Similar to the problem of recognizing a loose ring as horse-gear, some bronzes that look like horse-gear may be part of a scabbard or sword belt. In a few well-documented cases bronzes that at first glance may appear to be horse-gear actually were found in relation to swords. For example the bronze disc found at Frankfurt-Stadwald (Fischer 1979, 73; T.11) or the *Knopf* from Gemeinlebern T.1 (Kromer 1958, A111a; Metzner-Nebelsick 2002, 331) which both were found in association with Mindelheim swords and are interpreted as part of the sword suspension (belt) which was wrapped around the blade prior to placement in the grave. While there is no evidence for this in the

Dutch and Belgian burials, it is something to be aware of when interpreting isolated bronzes (see also Section C34.3).

C2.5 Tools

The following sections discuss the five knives, four axes, six (grinding/whet)stones and three spindle whorls listed as tools in the Catalogue (Fig. A2.5; Tab. A2.5).

C2.5.1 Knives

Knives are not an uncommon find in all kinds of burials from this period, although the knives found in the elite burials can be extravagant both in size (*e.g.* the possible oversized knife found in Court-St-Etienne La Ferme Rouge T.3) and decoration (*e.g.* the gold inlays in the knife from Frankfurt-Stadtwald; Willms 2002, 90–1). They are found in both the richest burials (see Section 6.4.2) and in one other in the dataset (Tab. A2.5). The knives themselves appear to be unremarkable, and most could be locally made or imports from the Hallstatt Culture. One possible exception is the mentioned knife from Court-St-Etienne La Ferme Rouge T.3, which may have been unusually large, but this cannot be confirmed due to its (unfortunate) research history (Section C6.2.1).

C2.5.2 Axes

There are only four axes in the Catalogue, and to my knowledge these are the only axes from this period found in a funerary context in the Low Countries (see also Sections 6.4.1 and 7.2.3.3). They are all socketed axes, with those from Court-St-Etienne La Ferme Rouge T.3, Rhenen-Koerheuvel and Wijchen being bronze, while the one from Oss-Vorstengraf is iron. The bronze socketed axe from Court-St-Etienne La Ferme Rouge T.3 is decorated and appears to be a type Wesseling axe (Butler/Steegstra 2003/4; De Mulder 2011; Mariën 1958, 118). The iron socketed axe from the Chieftain's grave of Oss (OV.25) is the only iron axe found in a burial from this period in the Low Countries, though a rough parallel from Didam-Kerkwijk suggests it could have been made locally (Van der Veken *et al.* 2011). It does not appear to resemble any of the iron axes found in the Central European Hallstatt Culture. The axe from Rhenen is a plain Wesseling type axe and likely was made in the eastern part of the Netherlands or adjacent parts of western Germany (Butler in Van Heeringen 1998, 93–4). Determining the type and source of the Wijchen axe is more difficult due to its melted appearance. However, it is most likely a Niedermaas (or perhaps a Helmeroth) axe which is a regional type (Butler/Steegstra 2003/4; Fontijn 2015, pers. comm.).

In any case, they do *not* appear to be imports from the Hallstatt Culture, and in Section 7.2.3.3 it is argued that the decision to include them in these burials most likely

was motivated by the involvement of individuals with knowledge of Hallstatt Culture elite burial customs in the burial rituals of these four individuals.

C2.5.3 (Whet)stones

A number of stone artifacts found in these graves traditionally have been interpreted as whetstones (*e.g.* Jansen/Fokkens 2007, 81). Preliminary analysis, however, indicates that they may have been used for a different, as yet unknown, purpose (see Section 6.4.3). Which is not to say that none of the stone objects found in graves were not used to sharpen blades, but the new results indicate we should not assume that something that looks like a whetstone was used as one.

C2.5.4 Spindle whorls

Three spindle whorls are also among the finds listed in the Catalogue. One was found in a flat grave at Court-St-Etienne, while the other two were found in the 'Princess' burial of Leesten-Meijerink (see Sections C6.3.11 and C18.2).

C2.6 Personal appearance: grooming tools and ornaments

In this section the origin of razors is considered and the razors, toiletries and ornaments found in the Dutch and Belgian elite burials are presented briefly (Fig. A2.6; Tab. A2.6). The razors, tweezers and other toilet items in particular would have been used to alter a person's body and/or face, and in Section 6.5.1 it is considered how and why this was done.

C2.6.1 Atlantic razors?

Razors are a common occurrence in the elite burials (as they are in urnfield graves; *e.g.* Louwen in prep.). Warmenbol (1988, 252–5) argues that the bronze razors found in Dutch and Belgian burials during the Early Iron Age are likewise of Atlantic origin. He stresses (*cf.* Meyer 1984) that the bronze razors included in the Catalogue (those from Basse-Wavre T.5, Court-St-Etienne La Ferme Rouge UC, Havré T.16, Louette-St-Pierre Fosse-Aux-Morts T.I and T.III) have Atlantic connections. Taken together with a number of other razors found in Belgium and Britain, Warmenbol (1988, 252–5) argues that the razors demonstrate that close connections must have existed between northwestern France, southeastern England and the Low Countries.

C2.6.2 Toiletries

Razors, however, were not the only objects used to change the appearance of the face (and possibly the body). There are a number of toiletry items found in the elite Early Iron Age burials. These include tweezers which presumably

were used for depilatory purposes. Items with a V-shaped notch are interpreted as nail cutters, and small spooned items are believed to be either makeup implements (Harding 2008, 192) or for cleaning ears.

C2.6.3 Ornaments

A range of ornaments was found in the burials under discussion. These include bronze bracelets and anklets, bronze and iron pins and fibulae, bronze and glass beads and buttons, bronze hair- or earrings as well as a few others (Figs. 4.27 and A2.6; Tab. A2.6). A number of these appear to be rather common types of ornaments and are found in other graves as well, while some appear specific to the elite burials. This is discussed further in Section 6.5.

C2.7 Textiles

Direct evidence of textiles survives in the elite burials Oss-Vorstengraf and Uden-Slabroek, and in several others the imprint of textiles has been preserved in the corrosion of metal objects. The textiles appear to have had different functions in the burials in which they are preserved. While some appears to be the clothing of the deceased, some is also a functional part of the burial ritual used to wrap up grave goods. In the case of the Oss burial the extreme high quality of some of the textile, as well as the manner of deposition, suggest that cloth was deposited as a precious grave good in its own right. For this reason textile is discussed here, rather than as items related to personal appearance. The following sections discuss the terminology and technical aspects of textiles as used in the analysis of archeological textiles (see also App. CA1 and Grömer 2015). The range of functions that textiles can hold, from clothing to scabbard linings to house furnishings, is discussed further in Section 6.5.3. The manner in which textiles can convey meaning and messages is considered there as well.

C2.7.1 Defining cloth, clothing and costume

To allow for proper discussion one has to differentiate between cloth, clothing and costume. *Cloth* refers to the textile itself, while *clothing* is something that can be worn made from cloth. *Costume* in turn refers to the outfit created with clothing, ornaments and dress fittings (Grömer *et al.* 2013, 221; Sørensen 1997; 2010). One also can make a distinction between items that are removable (like pins or belts) and items that are attached or sewn onto cloth (like studs or beads). There are of course also ornaments that are pretty much permanently attached to the body itself (such as some kinds of torques or arm rings; Sørensen 1997, 95–102). Another term that is sometimes used is *cloth-type materials*, which refers to “flexible, thin sheets that can be wrapped, shaped and folded and are used to clothe, cover and contain” (Harris 2012, 62).

As we are dealing only with fragments of clothing and cloth in the Low Countries’ elite burials, it is worthwhile to consider the concept of ‘cloth culture’, in which the focus is on cloth rather than on clothing culture (Harris 2008; 2012; Harris *et al.* 2010). The use of cloth-type materials is universal to all societies, and each culture uses specific materials. The cloth itself, not only the clothing it can be turned into, therefore can contribute to the construction and expression of identity (Grömer *et al.* 2013, 222; Harris 2012). For the Bronze Age, Harris (2012) for example distinguishes cloth cultures of the Aegean, Pharaonic Egypt, Scandinavia and Central Europe.

C2.7.2 Technical aspect of textile (analysis)

As organic materials, textiles rarely survive as they easily disintegrate, particularly in the ground. By far most archeological textiles are minute fragments that survive (often only as mineralized pseudomorphs) preserved on metal artifacts. Even when only present in this state, it is often still possible to extract information on the textile, such as whether they were made of plant fiber (such as linen) or animal fiber (such as wool). Yarn or textile quality sometimes can be established by considering weave type, thread count, yarn thickness, use of plied or single yarn, twist direction (s or z, see below) weaving errors and seams (Grömer 2013, 56; 2015; App. CA1). These all relate to the process through which textiles are made.

The first steps when making textiles are the harvesting, preparing and spinning of fibers (Grömer 2013, 56). The spinner influences the eventual textile produced, for (s)he produces yarn with specific characteristics as determined by his/her background, craftsmanship, skill and choices. Hallstatt period fibers, for example, were worked more extensively than in the Bronze Age (Grömer 2013, 56). Characteristics that result from the spinning process are yarn twist, twist direction, twist angle and thread diameter (Grömer 2013; Hammarlund 2005, 106). When spinning yarn the threads can be spun in either direction, producing so-called s- or z-twist yarns (Fig. C2.10). This can relate to craft traditions, but also can be used to create a certain effect in the eventual textile product (Bank-Burgess 1999, 34ff.; Grömer 2013, 58). The Iron Age saw an upsurge in high quality textiles making use of finely spun yarn (very fine: 0.2 mm; fine: 0.4 mm; medium fine: 0.5–0.7 mm; coarse: 1 mm; very coarse: >1.5 mm; Grömer 2005, 28–30). The Iron Age textiles from Hallstatt, for example, are made from relatively fine yarn, with most threads being 0.4–0.6 mm in diameter, but also a high proportion of high-quality, fine threads that are 0.3–0.4 mm or 0.1–0.2 mm in diameter (Grömer 2013, 56–7).

After the yarn is spun it can be woven into cloth in a range of ways, creating various weave-types. The skill

and technical ability of the weaver as well as the available weaving devices influence the choice of weave-type (Grömer 2013, 59). When weaving the 'vertical' warp threads are held in tension on a loom, and the 'horizontal' weft threads are 'thrown' across. By alternating how many threads are passed over and under different weave types can be created (Fig. C2.10; see also Grömer 2013, fig. 19). A *tabby*, for example, is a basic weave which is strong and hard-wearing. The warp and weft form a crisscross pattern (Fig. C2.10). With a tabby or balanced plain weave the warp and weft threads are the same in thickness and number. A variation on this is a *basket* weave in which two or more threads are combined and then woven as one. In

twill weaves the weft thread is passed over one or more warp threads and then under two or more warp threads with a 'step' between rows, giving the fabric a pattern of diagonal ribs. Twills generally drape well, are elastic and are better at retaining heat than tabbies (Grömer 2013, 62). The number of threads passed over and under can be described as a fraction in which the numerator indicates the number of threads that the weft passes under, with the denominator indicating the number of threads that the weft passes over (see Fig. C2.10 for examples). The number of threads per 10 mm², *i.e.* the *thread count*, determines how 'fine' a textile is (very fine: > 15 thr./10 mm²; fine: 11–15 thr./10 mm²; medium

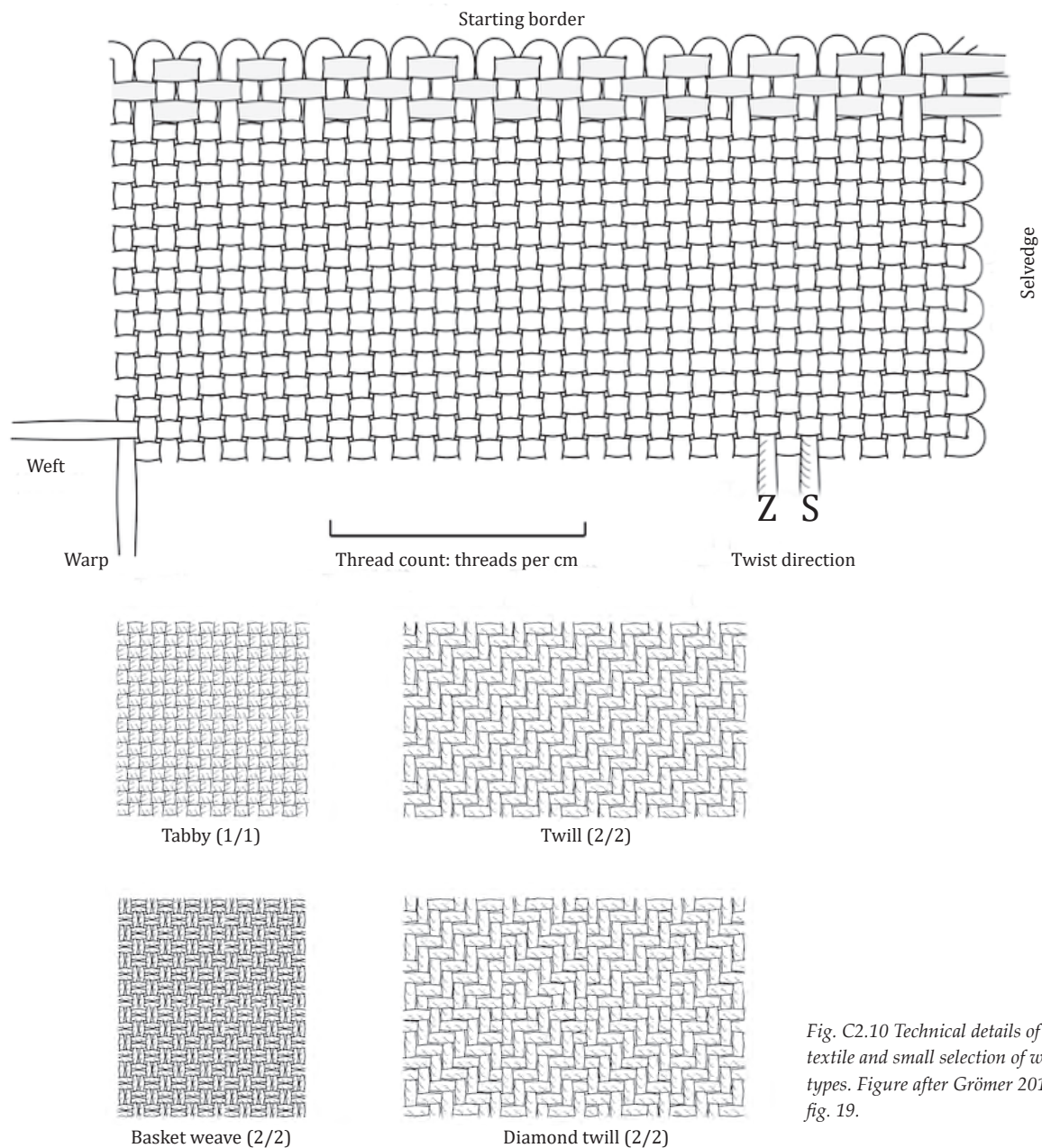


Fig. C2.10 Technical details of a textile and small selection of weave types. Figure after Grömer 2013, fig. 19.

fine: 6–10 thr./10 mm²; coarse: 1–5 threads per 10 mm²; Grömer 2005, 28–30) and is one of the technical features of textiles used to determine quality.

An important part of textile analysis, as with many of the analyses of the elite graves, is consideration of the microstratigraphy – *i.e.* the stratigraphic position of textile remains (*cf.* Grömer 2015). For example, is the textile located directly on an artifact, are there several layers of textile, are there different weaves on top of each other *etc.* (*e.g.* Fig. CA1.1).

C2.7.3 Textiles in Oss-Vorstengraf

The following is a summary of the technical analysis of the Oss textiles by K. Grömer (2015; see also App. CA1) and technical analyses by I. Joosten and M. Bommel. The Oss textiles survive in a mineralized state with some parts still organically preserved. Textiles are present on the sword (OV.06), several iron rings (OV.16; OV.18) and the knife (OV.24), and also survive as ‘loose’ finds (OV.39–42). In total eight different weaves were identified (Textiles A–H; see Tab. A2.7).

Four different kinds of textile were identified on the sword. A coarser tabby (Textile A) on the side of the handle is likely from the wrapped iron rings (or may have been a textile covering the whole burial deposit). Three different textiles were identified on the sword blade, on both the inside and outer side. On the outside there is a coarser tabby (Textile B), several layers of a fine diamond twill (Textile C) and finer tabby (Textile D). The textile on the inner side of the blade survived poorly, but may be identified as deriving from the fine diamond twill (Textile C). Textiles A–D also were found among the ‘loose’ textile fragments from the situla (OV.39–42). The microstratigraphy of the various weaves on the sword and the loose fragments indicate that the coarser tabby (Textile B) was used to wrap the blade of the sword and that something made of the diamond twill (Textile C) was folded around something made of the finer diamond twill (Textile D) and was placed in the situla as grave goods in their own right and lay against the sword. Two different kinds of textiles were found on the outer side of iron rings (OV.16). A coarser tabby (Textile A) was

identified on a smaller ring, and four layers of diamond twill (textile E) were found on the side of another ring. Textile also was found on one side of another iron ring (OV.18) but was too degraded to identify. Taken together this is interpreted as meaning that all rings were packed close together. Another weave (Textile F) was found only on the iron knife (OV.24). It is preserved in two places on one side of the blade and folds over the edge of the back of the knife. One part is covered by leather, of which the type of animal or tanning could not be identified. The microstratigraphy and the archeological context of the textile and leather indicate that either the leather is a knife sheath with the textile between leather and knife being the lining of the sheath, or the leather belongs to the horse-gear which was found together with the knife in the situla. If the latter is the case, then the textile may indicate that the knife was wrapped separately as the textile cannot be from the tabbies that cover the sword and iron rings (they differ in thread diameter and thread count). The interpretation of the textile as a wrapping certainly fits with the reconstruction of the burial ritual (Fig. 4.9; Section C26.4). Textile G is a coarse twill, and Textile H is a plied yarn, wrap, band weave.

C2.7.4 Textiles in Uden-Slabroek

The following is a summary of the technical analysis of the Uden-Slabroek textiles by K. Grömer (2015; App. CA1) and technical analyses by M. Bommel and I. Joosten. Textiles are present on both anklets (US.06; US.09) and the three bracelets (US.07–08), as well as preserved under the bronze pin (US.14). Two different weaves were identified (Textiles A and B; see Tab. A2.7). Textile A is a coarse twill (2/2) and was identified directly on the bronze anklets and bracelets, in some cases in multiple layers. Exceptionally, both the pattern and colors of this textile could be identified. It was likely a regular checkered pattern of bright red and blue blocks (dyestuff analysis is underway to confirm this). It probably can be interpreted as a long-sleeved garment that reached to the ankles, likely a dress. A second weave, Textile B, is a finer twill (2/2) and was found on top of the Textile A fragments on the bracelets. This textile is interpreted as a shroud.