

---

KRISTIAN KRISTIANSEN

## THE TALE OF THE SWORD – SWORDS AND SWORDFIGHTERS IN BRONZE AGE EUROPE

---

*Summary. In this article<sup>1</sup> it is demonstrated through empirical observation that Bronze Age swords were functional and efficient weapons. Their use in real combat is testified by recurring patterns of blade damage and resharpener. Furthermore, ritual depositions of swords with unrepaired scars on the blade demonstrate the prehistoric roots of the Celtic–Germanic–Greek ritual of sacrificing weapons after a victorious fight.*

### INTRODUCTION

The role of warfare and not least the efficiency of weapons in the Bronze Age is clouded in myth. The most persistent myth is the claim that bronze weapons were unsuited for practical combat, and hence that warfare was mainly ritualized (Neustupny 1998, 27–30). I apply the word ‘myth’, since none of the prevailing descriptions of the use of Bronze Age weapons are based upon observation, just as they often ignore existing studies of use-wear, such as those of Schauer (1979), Kristiansen (1984), and Bridgford (1997). They belong in the sphere of cultural prejudice. In this article I wish to replace prejudice with observation.

In the following I shall exemplify and discuss four aspects of the role of swords in Bronze Age combat:

- functionality and use
- damage and resharpener
- protective measures
- ritual depositions and the nature of combat.

I shall conclude with a discussion of the role of famous or heroic swords.

---

1 The article is based upon my recording of use-wear, blade damage and sharpening on Central European swords in the National Museum of Budapest, which holds the largest collection in Central Europe, the regional museum of Nyiregyháza, and the museum of Natural History in Vienna. I wish to thank especially Tibor Kovacs and Tibor Kemencei of the National Museum in Budapest for their support and friendliness during my yearly visits, just as Katalin Almassy and Fritz Eckart Barth were very helpful during my brief visits to Nyiregyháza and Vienna. A full publication with a catalogue of my observations is in preparation and will be published in Hungary. See also Kristiansen 1999. All photographs were taken by Leif Häggström. I also acknowledge his contribution in explaining the role of the hole for the leather strap on the full-hilted swords of the Late Bronze Age.

## FUNCTIONALITY AND USE

One of the most common myths relating to the use of swords of the Bronze Age (both flange-hilted and full-hilted) relates to the shortness of the hilt, which appears to be too small for practical use. Having now tried out several hundred swords I can reject this myth as unfounded. Bronze Age swords are rather heavy, at least when compared with modern or historical rapiers. Much of the weight is in the blade. It therefore becomes important to have a firm grip that allows the user to control the movements of the sword. That is exactly what the short hilt, in combination with marked shoulders, offers. Thus, the shoulders are to be seen as a functional part of the hilt (Fig. 1a–c). The user ‘locks’ the sword through the inclusion of the shoulders in the grip, which means that his movements become much more precise and controlled. This is an ideal solution if the user wishes to combine both thrusting and slashing in one sword to be used by one hand technique.

That this could also be tiring is exemplified by an innovation of the Late Bronze Age, when slashing became a more dominant feature. On a majority of full-hilted swords there is a small hole through the pommel which has never been explained. However, it is possible on some swords to observe wear around the hole, implying that a strap, most probably a leather strap, was employed. On Figure 2a–c I demonstrate its use. It is reminiscent of a modern police baton, and has the same practical functions: it prevents the user from losing the sword, it allows him to relax his hand during combat, and finally it allows him to add more swing and power to a slashing movement.

A rather peculiar feature on Bronze Age swords is a recurring slight bending of the blade. Holding the sword in one’s right hand the bending is towards the left, and if one changes the sword to make it bend to the right it changes the balance and feels wrong. Thus there is normally no doubt about how the sword should be held to be workable. A few swords are apparently for a left-handed fighter, as the bending should always be inward to feel right. The reason for this bending remained obscure until I talked to a ‘modern’ swordfighter, who explained that this was a well-known feature even today. When one puts in a new blade one would always as the first thing bend it slightly to the left (which also suggests that the hilt is the persistent part of a sword, and therefore the most essential part). The reason for doing this is that when confronting one’s enemy in an attack position, holding the sword in the right hand, the user wants the blade to point towards his opponent’s heart.

Balance is an essential aspect of the use of a sword. The balance between the weight of the hilt and the weight of the blade defines its function as either a thrusting or slashing sword. During the Middle Bronze Age long and narrow rapier-like blades suggest a function mainly as a thrusting sword, while during the Late Bronze Age the blade becomes wide and heavy, suggesting a function as a slashing sword. The difference is shown by the location of the balance point of the sword – on rapiers and thrusting swords it is close to the hilt, on slashing swords it is further down the blade. In practical terms it simply means that the movement of a thrusting sword should be fast for defence and rapid thrusting, while a slashing sword is too heavy for fast movements, but favours long slashing movements with a lot of weight and force behind. It should be noted, however, that the Bronze Age sword, whether it is for thrusting or slashing, is not comparable to its later historical counterparts, which are very specialized and can only be used for one function. The Bronze Age sword is much more of an all-round sword with a dominant function, but to be used for both slashing and thrusting, attack and defence when needed. Only the early rapiers are real thrusting swords, even by comparison with the early flange-hilted sword (Fig. 3c).



Figure 1a–c

Examples of how to grip the hilt and shoulders of a Bronze Age sword, which allows the user to direct the movements very precisely.



Figure 2a–c

Demonstration of the use of a sword with leather strap fastener, allowing the user to create greater force in slashing movements, just as it prevents him from losing the sword.

## BLADE DAMAGE AND RESHARPENING

I have now demonstrated the functionality of the Bronze Age sword. A further confirmation is found in the recurring traces from use in combat visible on most sword blades. Such blade damage and subsequent resharpening show a recurring pattern throughout the Bronze Age: the blade below the hilt is the area of defence and here one often finds severe damage and resharpening. The damage is often heavier to one side, as the swordfighter would normally hold his sword in the same way (Fig. 3c to the right). It means that the blade is often incurved and narrower below the hilt. On older swords with a long history of combat leading to frequent damage and repair/resharpening, the lower part of the shoulders would sometimes break, due to combined resharpening and blows from enemy swords (Fig. 3a–b). It meant that the lowest rivet holes often broke open and were therefore no longer usable (Figure 3c).<sup>2</sup> During the Late Bronze Age this led to an innovation, the ricasso, below the hilt to catch up the enemy sword and prevent it from sliding up and destroying the shoulder of the hilt and eventually hurt the hand of the swordfighter.<sup>3</sup> Sometimes the whole hilt bent due to frequent slashing and warping off, indicating that serious fighting was frequent and recurring, at least for some Bronze Age warriors. On flange-hilted swords this would sometimes lead to a complete break of the hilt. This is in fact not unusual and although some of this damage could be recent it is in most cases prehistoric.

The middle part of the sword blade is where damage from attack is sustained – that is when a slashing movement is stopped by another sword's blade. Again resharpening created incurved parties along the edge, and in hoarded swords with fresh scars, they appear very clearly (Fig. 4). On some swords, transverse lines or ridges on the midrib of the sword blade suggest that a technique of warping off with the flat side of the blade was used as well.

Finally, the point or tip of the sword would often bend when a thrusting movement was stopped by a shield. Sometimes the tip would even break off and have to be resharpened. This resharpening of the tip is quite frequent, especially during the Middle Bronze Age, but even during the Late Bronze Age, stressing the generalized nature of sword fighting, combining both thrusting and slashing.

In conclusion there remains no doubt as to the role of warfare and sword fighting in Bronze Age Europe. This was an arena for skilled professionals throughout the Bronze Age. Differences existed between different types of swords, the flange-hilted sword being the sword of the professional warrior *par excellence*, while the full-hilted sword, although also employed

---

2 A look through the volumes of *Prähistorische Bronzefunde* shows that such damage is not unusual, just as broken hilts are common. It should be noted that Ingeborg von Quillfeldt (1995) in her work on the full-hilted swords of southern Germany discusses use-wear and blade damage. While her observations on use-wear on the hilt correspond to my observations, her evaluation on blade damage differs. She regards all scars as recent, due to finders' experiments. While I can recognize a few such examples, the majority of scars are ancient. This is, among other things, confirmed by their patterned distribution on the blade and rather modest size (very deep scars are rare). However, she is correct in assuming that full-hilted swords were rarely employed in systematic fighting until the Late Bronze Age. Hundt's earlier experiments, which she relies on, need to be followed by many more in order to gain familiarity with Bronze Age combat, blade damage and resharpening techniques. I consider systematic observations of blade damage and resharpening on Bronze Age swords to be our primary empirical evidence.

3 The Mycenaean chiefly warriors employed specially designed hand-protectors of bronze (Senaki-Sakellariou 1985, pl. IX, T.15, 2780), in addition to the full armour (cuirass, greaves, helmet, etc.) known from Dendra (Åström 1977).

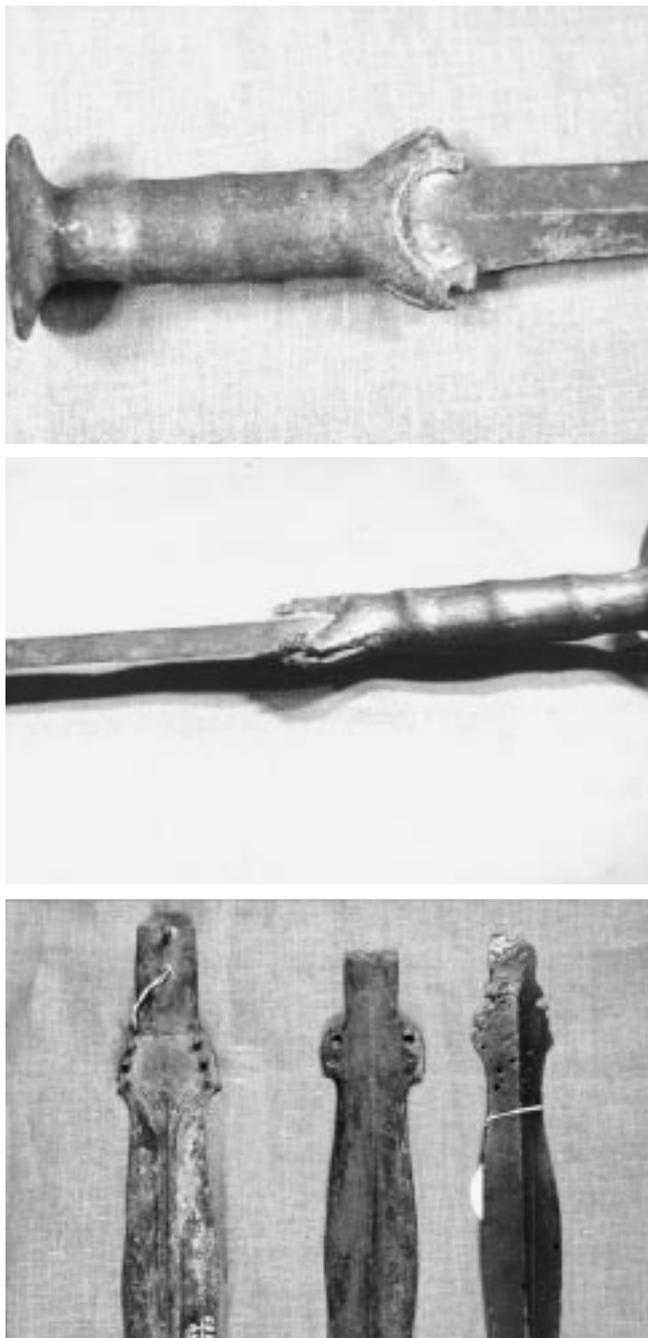


Figure 3a-c

Old full-hilted sword with heavily resharpened blade, and shoulder damage, making the sword unusable. Below are three early rapiers. The sword to the right is heavily resharpened, especially on the right side under the hilt, the shoulders are damaged and the rivet holes broken. For comparison, two other swords in rather fresh condition are shown.



Figure 4a-b

Example of fresh, unrepaid scars from combat, and an illustration of how they could have been created.

in combat, was rather the sword of the chiefly commander. The blade is generally less used and damaged than that of the flange-hilted sword. During the Early and Middle Bronze Age this is supported by the fact that the sword blade was fastened to the hilt only by rivets that could hardly withstand serious and repeated blows in combat (Fig. 3a). In the Late Bronze Age the end of the blade was extended into the hilt to make it more stable and prevent it from breaking off from the blade (well documented in Bader 1991). Consequently the number of rivets was reduced to two rather small rivets. It suggests that full-hilted swords were more often involved in actual combat during this period.

The observed damage and repairs, whether on flange- or full-hilted swords, are not of the kind one would acquire simply by practising. For such purposes the real swords were normally too costly, and instead training-swords of wood were the norm also in the Bronze

Age,<sup>4</sup> thus stressing the specialized and penetrating role of warfare in the daily life of Bronze Age society (Kristiansen 2001).

#### PROTECTIVE MEASURES

The best protection in combat would always be the personal skill of the warrior to use his weapons to prevent him from being hurt. That is why the Celtic warriors would go into battle with their bodies naked, in order to demonstrate their professional superiority and lack of fear. But even the best warrior would need protection against the unexpected, and as the skills of the warriors and the capacity of weapons improved so did protective measures.

During the Early and Middle Bronze Age few examples of protective armour are preserved outside Greece, as they were mostly of wood, leather (shields) and bone (boar tusks for helmets). Mycenaean depictions of combat are among the best evidence we have (Harding 1999, fig. 6). However, it seems that male ornaments were specially developed in Central Europe also for protective measures – arm spirals and heavy, so-called hand- and elbow-protecting spiral rings are regularly found together with swords. They come in two versions – one with the ring inwardly bent to be worn on the wrist, the spirals functioning as hand protection and one with the ring in traditional position suited for an upper arm (Fig. 5). As the elbow spiral rings are huge and only suited for male upper arms, I suggest that these ornaments had protective functions. That they were used is beyond doubt, as they show signs of wear, and the traditional arm spirals are always formed according to the underarm, becoming wider at the upper end.

It is not until the Late Bronze Age that we find specialized body armour of hammered bronze – helmets, shields, cuirasses and greaves throughout Europe. As sheet bronze delivers little protection, this body-armour has been considered as just a prestige good for warrior aristocracies, employed for display and for ceremonial purposes. This would correspond with the observation that chiefly warriors with full-hilted swords were not taking part in more heavy fighting. It further indicates the hierarchy of warfare during the Late Bronze Age, led by chiefly commanders with a retinue of warriors that did most of the fighting.

However, we should not rule out the practical use of such body armour. The cuirass and the greaves would most likely have been covered on the inside by leather or similar protective materials, e.g. linen and felt. This has been confirmed by Jankovits showing that the rivets on the cuirass are too wide, and suggests an inside cover (Jankovits 1999/2000). In Archaic Greece leather corselets were standard equipment for hoplite warriors (Jarva 1995, figs. 12–15), whereas bronze cuirasses were rare, belonging to officers (Jarva 1995, 127ff.; see also numbers of armour finds at Olympia in Jarva 1995, fig. 61). Since the cuirass was rather

---

4 I know of a wooden sword from Grotsetter in Orkney Islands, Scotland, dated to the Late Bronze Age (in the National Museum in Edinburgh, published by Stevenson 1960, 191–3, pl. XXIX), and a similar example from Ireland (*J. Roy. Soc. Antiq. Ir.* 1960, fig. 12), but others are quite surely to be found hidden away in museums (see also Capelle 1982, 281–4). The Grotsetter sword was made of yew, a rare hardwood indicating its practical function, just as the pommel had been broken off apparently in antiquity. The hilt showed polish after use. In the Irish myth the *Táin* we hear about the use of wooden swords and weapons. Ailill stole Fergus' sword when he slept with Medb and put a wooden sword in the scabbard. Later we hear in an insult against Cuchulainn that he is a fine lad for graceful tricks with wooden weapons (*Táin* 118–19). I am very interested in receiving information on wooden swords, a rare and most neglected category. I wish to thank Trevor Cowie for providing me with published information about the Scottish and Irish wooden swords, and Bernhard Sicherl for the Capelle reference.



Figure 5  
Elbow-protecting arm spiral.

thin (around 1 mm) it needed a leather undercover for proper protection. This is evidenced in several vase paintings, where the leather strips of the undercover are seen below the cuirass (Jarva 1995, fig. 7). Helmets, greaves and arm protectors had perforations for the inner lining in Greece. In Central Europe we can assume the same. For the helmets I can support it with my own observations. One of the famous Late Bronze Age helmets from Hungary from Hajduböszörmény is covered with marks from fighting (Fig. 6a–c). Here are traces of blows from swords, axes, and arrowheads or spears. On the inside the helmet was covered with leather and textile for protection and to sit firmly and comfortably on the head (the rivet holes running around the base were intended for just that). Otherwise the helmet is far too big for any normal head, in my case several centimetres too wide.<sup>5</sup> Head injuries were among the most frequent on skeletal material. The B-circle in Mycenae showed that the chiefly warriors were active in

---

5 We may recall here Homer's description of Odysseus' helmet on his nightly mission to the enemy camp, given him together with weapons by Meriones: 'Inside there was a strong lining of interwoven straps, under which a felt cap had been sewn in. The outer rim was cunningly adorned on either side by a row of white and flashing boars' tusks. This helmet originally came from Eleon, where Autolycus stole it from Amyntor son of Ormenus by breaking into his well-built house. Autolycus gave it to Amphidamas of Cythera to take to Scandaea; and Amphidamas gave it to Molus in return for hospitality. Molus, in his turn, gave it to his son Meriones to wear, and now it was Odysseus' head that it served to protect' (*The Iliad* Book X, 263–4). Here we in turn receive a typical history of how weapons and armour could be passed on as valuable gifts increasing their status and value.



Figure 6a–c

Helmet from Hajduböszörmény with evidence of blows from axes, swords and arrowheads/lances.

battle, with frequent injuries and early death as a consequence (Angel 1973, 393). Another confirmation of the warlike nature of Bronze Age society comes from Norway, where a whole group of warriors and their families had been brutally killed and thrown into a pit (Fyllingen in press).

## RITUAL DEPOSITIONS AND THE NATURE OF COMBAT

Most swords of the east Central European Bronze Age are from depositions in wetlands, so-called hoards. In addition these swords often show unrepaired scars and blade damage from combat, suggesting that they were deposited right after a battle. It lends a special significance to the deposition of weapons and suggests that they were part of a general ritual practice. It reminds us of Caesar's description of Gallic weapon depositions in the Iron Age, where the weapons of the losing party were deposited in ritual places in thanks for the victory (Caesar, *Gallic Wars* Book 6, 17). We also know of it from Germanic northern Europe, where huge weapon depositions from the Iron Age in bogs testify to the rule mentioned in the Nordic Sagas to sacrifice to Oden part of the spoils of the defeated for the victory. It is the very same ritual practice that we encounter in the centralized sacrifice of weapons to the regional sanctuaries in Archaic Greece, especially at Olympia (Jarva 1995, fig. 61).

This ritual practice thus has deeper prehistoric roots. Following from this the composition of weapon depositions in wetlands and moors should give us some indication of the number of chiefly commanders in battle, and perhaps even the nature of combat (Randsborg 1995). However, many depositions contain two or three swords, suggesting a duel-like single combat, while others contain many swords and lances, suggesting a small army.

From fortified settlements we know that Bronze Age warfare was well organized and could contain rather large numbers of warriors. The sword-bearers represented the top ranks – the chiefly commanders – and the deposition of their most valued weapon should rather be regarded as a symbolic representation of the war party. When two or a few swords are deposited we should imagine that single combat between chiefly commanders had been employed, as is known from Homer the duel between Paris and Menelaus (Homer, *Iliad* Book III), and from Saxo Grammaticus, *Gesta Danorum* – the duel between the Danish prince Uffe the Weak and the Saxon prince, to which I shall return. Also, in the Irish sagas single combat is an important feature of warfare, performed according to strict rules: 'When the contending parties were ready for battle, the most prominent warriors from one of the parties stepped forward and challenged to single combat the most distinguished warriors from the other party. Before the single combat took place the warriors enumerated their ancestry and martial feats, and intimidated their opponent' (Pettersson 1999, 106). Thus single combat was a regular feature of Bronze and Iron Age warfare in late prehistoric Europe. It seems likely that in such cases weapons were deposited as a testimony to a heroic fight and a famous sword.

We find accounts of the deposition of famous swords in the earliest European literature; most famous perhaps is King Arthur's sword Excalibur, which he had received from the Lady of the Lake, and upon his death had to be returned to the lake. But we hear of other famous swords that were deposited, as we shall see in the following section.

## LIFE STORIES AND FAMOUS SWORDS

Since the Bronze Age the sword has been the most aristocratic and valued weapon. Special care was taken to produce beautiful and effective swords which were named and famed. Their fame would sometimes lend them supernatural or magical powers, such as the story of Excalibur mentioned above. Also, the story of the Danish prince Uffe the Weak and his combat with the Saxon prince over the reign of the Danes contains all of these elements: the Saxons suggested a sword duel to settle the matter, as they suspected that their prince would easily

defeat the young and apparently inexperienced Danish prince. The Danes were in despair. But the old king, blind and close to death, went out and dug up a sword named Skraep. It was a famed sword with magical powers that he had deposited in the ground (a hoard), when he thought there was no worthy person to inherit it, and it was only supposed to be dug up if the king and his people were in acute danger. Such a moment had now come. The young prince was given the sword, and the old king sat on a chair close to the river, so that he could drown himself if his son and the Danes lost. But when he heard Skraep sing once, he moved closer to land, and the second time the Saxon prince was killed.

In this tale we find all the elements that characterized the power of famous swords, and we even get an apparent explanation for the hoarding of such swords. Due to their magical powers they had to be kept in secret places and could only be inherited by the specially qualified. Saxo tells us that the old king had some difficulty in remembering the exact location of the sword, he was apparently the only one who knew it. So the deposition of famous swords was not uncommon, which would explain the Europe-wide archaeological occurrence of this custom since the Bronze Age.

The earliest tales and myths in European history, from the *Iliad*, the *Odyssey* and *Beowulf* to the Celtic and Nordic sagas, all contain evidence about the role of famed swords and spears, often with names. Thus when Odysseus visited the Phaeacians, King Alcinous offered him a prestigious gift and proclaimed: ‘I will give him this sword which has a silver hilt and a sheet of newly carved ivory to hold it – it will be a very valuable possession’ (Homer, *Odyssey* Book 8, 400–5). *Beowulf* used a rare and ancient sword named Hrunting to kill Grendel’s mother (*Beowulf* 1448–81). In the Celtic tales it is often a magical spear that is named (Pettersson 1999, 104–5), but in the *Táin* there is a whole list of famous swords, shields and spears with names from the hero Conchobors’ household (Kinsella 1969, *Táin* 5).

The archaeology of swords underpins the written record. We find many examples of beautifully produced swords with heavily worn hilts that must have been inherited due to their fame, or sometimes also due to a lack of craftsmen and bronze to produce new (Fig. 7). In



Figure 7

Fine Late Bronze Age full-hilted sword, where the original decoration on the hilt has been completely worn away. Small traces remain under the pommel.

Scandinavia and the Mycenaean world some hilts were gold-plated or inlaid with amber; these were the royal or chiefly swords, and here the archaeological record testifies that they were rarely used in actual combat, as the sword blade mostly shows little evidence of use (although it could have been replaced). They were not the swords to be used in combat except in more exceptional cases, such as single combat. But it is on the sword blade that we can record the life story of combat, and here there is no doubt that the flange-hilted sword was the professional warrior's weapon – the Samurai of the Bronze Age – always razor-sharp edges, always resharpened and repaired, some until their blade was completely transformed. But they were kept in use until this very last moment, due to their close relationship with the warrior and due to their history and power.

Each deposited sword contains a life story, some of them long and scarred as the many incidents and combats recorded on their blade and hilt attest, others brief and abrupt as the unused blade and hilt demonstrate. We cannot give words to the myths of all these swords, but the material stories they reveal about their use are just as rich and full. It is from the sum of such prehistoric tales that later the most famous would crystallize into those favoured oral stories that survived into written, historical times.

*Department of Archaeology  
Göteborg University  
Box 200  
SE-405 30 Göteborg  
SWEDEN*

REFERENCES

- ANGEL, J.L. 1973: Human Skeletons from Grave Circles at Mycenae. In Mylonas, G.E., *Ho taphikos kyklos B ton mykenon* (Athens).
- ÅSTRÖM, P. 1977: *The cuirass tomb and other finds at Dendra. Part 1: The chamber tombs* (Göteborg, *Studies in Mediterranean Archaeology* vol. IV).
- BADER, T. 1991: *Die Schwerter in Rumänien* (Stuttgart, *Prähistorische Bronzefunde* Abteilung IV, Band 8).
- BRIDGFORD, S.D. 1997: Mightier than the Pen? (an Edgewise Look at Irish Bronze Age Swords). In Carman, J. (ed.) 1997, 95–115.
- CAPELLE, T. 1982: Erkenntnismöglichkeiten ur- und frühgeschichtlicher Bewaffnungsformen. Zum Problem von Waffen aus organischem Material. *Bonner Jahrbücher* 182, 265–88.
- CARMAN, J. (ed.) 1997: *Material Harm. Archaeological studies of war and violence* (Glasgow).
- FYLLINGEN, H. in press: Society and Violence – living in the Early Bronze Age. *Norwegian Archaeological Review*.
- HARDING, A. 1999: Warfare: A Defining Characteristic of Bronze Age Europe? In Carman, J. and Harding, A. (eds.), *Ancient Warfare* (Stroud), 157–73.
- HOMER: *The Odyssey* (translated by E.V. Rieu [revised by his son D.C.H. Rieu in consultation with Peter V. Jones]) (London 1991).
- HOMER: *The Iliad* (translated by E.V. Rieu) (Harmondsworth 1973).
- JANKOVITS, K. 1999/2000: Neue Angabe zu dem Depotfund von Pila Del-Brancon Nogara (Verona). Zu

- den Bronzeblechen vom Depotfund. *Acta Archaeologica Academiae Scientiarum Hungaricae* Tomus LI, Fasc. 1–4, 189–205 (Budapest).
- JARVA, E. 1995: *Archaeologia on Archaic Greek Body Armour* (Rovaniemi, *Studia Archaeologica Septentrionalia* 3).
- KINSELLA, T. (tr.) 1969: *The Táin* (from the Irish epic *Táin Bó Cúailnge*) (Dublin).
- KRISTIANSEN, K. 1984: Krieger und Häuptlinge in der Bronzezeit Dänemarks. Ein Beitrag zur Geschichte des bronzezeitlichen Schwertes. *Jahrbuch des Römisch-Germanisches Zentralmuseums* 31, 187–208 (Mainz).
- KRISTIANSEN, K. 1999: Understanding Bronze Age weapon hoards. Observations from the Zalkod and Vaja hoards, Northeastern Hungary. *JAMÉ XLI*, 101–7 (Nyiregyhaza, Josa Andras Muzeum).
- KRISTIANSEN, K. 2001: Rulers and Warriors: Symbolic Transmission and Social Transformation in Bronze Age Europe. In Haas, J. (ed.), *From Leaders to Rulers* (Kluwer Academic/Plenum Publishers).
- NEUSTUPNY, E. (ed.) 1998: *Space in Prehistoric Bohemia* (Praha, Institute of Archaeology).
- PETTERSSON, G. 1999: *Finn and the Fian. Reflections of Ancient Celtic Myth and institutions in Early and Medieval Ireland* (Skrifter utgivna vid Institutionen för religionsvetenskap, Göteborgs Universitet, Skrift Nr. 21).
- RANDBORG, K. 1995: *Hjortspring. Warfare and Sacrifice in Early Europe* (Aarhus).
- SCHAUER, P. 1979: Eine urnenfelderzeitliche Kampfweise. *Arch. Korrespondenzblatt* 9.
- SENAKI-SAKELLARIOU, A. 1985: *Les tombes à chambre de Mycènes. Fouilles de Chr. Tsountas (1887–1898)* (Paris).
- STEVENSON, R.B.K. 1960: A wooden sword of the late Bronze Age. *Proc. Soc. Antiq. Scot.* 91 (1957–8), 191–3.
- VON QUILLFELDT, I. 1995: Die Vollgriffschwerter in Süddeutschland (Stuttgart, *Prähistorische Bronzefunde* Abteilung IV, Band 11).