

ANTHONY HARDING

WARRIORS AND WEAPONS
IN BRONZE AGE EUROPE



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Edited by

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25

ANTHONY HARDING

Warriors and Weapons
in Bronze Age Europe



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Rock carvings from Hede, Kville parish, Bohuslän, Sweden.

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Acknowledgements

This work was conceived during the 1990s, when I was undertaking research for my book *European Societies in the Bronze Age*, but for various reasons it has not come to fruition until now, when an explosion of interest in ancient warfare has greatly extended the task of sifting the literature for relevant material. Instead of being a topic that was under-researched and wide open for new ideas, prehistoric warfare has become a field about which many scholars have recently written. This contribution aims to take the debate forward along a specific path: detailed examination of the material evidence for fighting in the Bronze Age. I have therefore done no more than provide a couple of relatively short introductory chapters that cover general issues and the evidence of warfare before the Bronze Age; and by the same token, I have not provided any illustrative material for these periods, which are well covered in other works.

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Chapter 1. Introduction

Hereby it is manifest that during the time men live without a common power to keep them all in awe, they are in that condition which is called war; and such a war as is of every man against every man. For war consisteth not in battle only, or the act of fighting, but in a tract of time, wherein the will to contend by battle is sufficiently known: and therefore the notion of time is to be considered in the nature of war; as it is in the nature of weather. For as the nature of foul weather lieth not in a shower or two of rain, but in an inclination thereto of many days together: so the nature of war consisteth not in actual fighting, but in the known disposition thereto during all the time there is no assurance to the contrary. All other time is peace.

*Whatsoever therefore is consequent to a time of war, where every man is enemy to every man, the same consequent to the time wherein men live without other security than what their own strength and their own invention shall furnish them withal (Thomas Hobbes, *Leviathan* (1651), Chapter XIII).*

*If the wars of civilised people are less cruel and destructive than those of savages, the difference arises from the social condition both of states in themselves and in their relations to each other. Out of this social condition and its relations war arises... Two motives lead men to war: instinctive hostility and hostile intention (Carl von Clausewitz, *On War* I, 1, 2 (1832); trans. J.J. Graham, 1873).*

For Europeans born and brought up in the twentieth century AD, it might seem natural to believe that war is a constant and universal factor in human politics. A century that saw two wars on a truly global scale, and a host of other large-scale conflicts beginning and ending with turmoil and hatred in the Balkans and never free of major campaigns somewhere in the world, cannot but have influenced the opinions of historians and archaeologists working in the first decade of the twenty-first. Europeans living in today's peaceful and democratic states tend to think that the Second World War ended major conflict in Europe, but this would

be to forget the Greek Civil War of 1946–49, the suppression of the Hungarian revolution in 1956, or the vicious wars of Yugoslavia in the 1990s; and while Americans have not experienced significant war on their own soil since 1865, they have been involved in major wars around the world on several continents since then, not excepting the present day. Somewhere in the world, wars have been fought in every decade and on virtually every continent.

Of course previous centuries have plenty of examples to compare with these melancholy cases from recent history; usually on a smaller scale and never global, but in Europe at least bringing misery to millions. The campaigns of Napoleon Bonaparte were pan-European in scale; the Thirty Years War (1618–48) spared few parts of central Europe and was the most destructive war ever waged until that time; of the larger countries only Britain and Russia avoided significant involvement in it. We can go back in time to the campaigns of the Mongol emperors, or to the Crusades and the spread of Islam; we can go back to the earliest written histories and study the wars of Greece and Rome, or before that of Egypt and Mesopotamia. Wars have always been the stuff of history, because geopolitics has depended on them and historians have found it necessary to write about them. The works of Thucydides or Julius Caesar would have little resonance for us if they had not dealt so comprehensively with the wars they chronicled.

One might be forgiven, then, for believing that wars are constantly being waged and that to do so is somehow a natural and innate feature of the human condition. But is this actually true? For archaeologists, and particularly for prehistoric archaeologists, it is important to know the answer to this question, as they need to know if they are to expect warlike behaviour to be universally reflected in the material culture that represents the raw materials with which they work. For them, the history of recent centuries cannot be regarded as truly comparable, since human societies differ in so many fundamental respects from those of antiquity. In scale and complexity, there is nothing like the political units of the modern, post-Renaissance, world in prehistoric Europe, and arguably not in any other part of the world either. The nation-state is a relatively modern concept, both in extent and in organisation; and in addition the technology of warfare in the modern world differs fundamentally from that available to earlier millennia.

Perhaps then we should turn to ethnography to see whether warfare is an inevitable concomitant of pre-industrial societies. Many authorities have done exactly that, without any undisputed picture emerging. Apart from anything else, such societies are themselves very diverse and it would be completely wrong to imagine that what occurs in one must necessarily occur in another. This is not to

say that there is not instructive information contained in ethnographic accounts, but as always it must be used by archaeologists with extreme caution.

This book looks at one particular segment of time in one continent, Europe between about 3500 and 700 BC. This period saw major changes in the Old World in social and economic organisation and in technology. These affected not only Europe but also the Near and Middle East; but I shall deal here only with Europe since its character was very different from that of Asia and north-east Africa. At the beginning of the period under review, most of Europe was still dependent almost entirely on arable and pastoral agriculture, and even though knowledge of metals was starting to spread, their availability was very restricted. By the end of the period, it is possible to discern what we may call states in the Mediterranean area, and political units that are usually considered to be based on relatively large-scale tribal groupings in central and northern Europe. In between, a variety of technological and socio-economic processes had been in train, of which the regular and widespread use of metals was only the most visible. The period is centred on what we call the Bronze Age, which was a development from the Copper Age that opens our period and leads into the Iron Age which closes it. I shall refer to material principally from Bronze Age contexts, but where appropriate I shall introduce material that is either earlier or later where it clarifies the Bronze Age situation.

Warfare and violence in the archaeological record have attracted much attention in recent years, which is interesting from two standpoints: first, it implies that war was an important element of ancient cultures; and second, it reflects a notion among scholars that war is a major aspect of the human condition. At the same time, many would say that the latter notion is part and parcel of an intrinsically political debate about whether war just “happens”, because it always does and so we cannot help it, or is something that is fostered through social reproduction and can therefore be avoided by diplomacy and education. From my present perspective, what is important is that it clearly did happen in ancient times, and for archaeologists there are particular ways in which to study it.

Among those who have written extensive and illuminating works on the subject in the 1980s and 1990s we may list Slavomil Vencl (1984a, 1984b), Robert Carneiro (1990, 1994), R. Brian Ferguson (1984, 1992, 1995, 2006), Jonathan Haas (Haas 1990, Haas – Creamer 1993), and Keith Otterbein (most recently 2004). In 1996, Lawrence Keeley’s influential book *War before Civilisation* appeared, and the stage was set for another quantum leap in publication, witness works by Steven A. LeBlanc (1999, 2006; LeBlanc – Register 2003),

Richard Osgood (1998, Osgood *et al.* 2000), John Carman (1997), and a number of other authors, including myself. At the same time, the research project “Archaeological and social anthropological perspectives on war and society” was inaugurated at Aarhus University, which has led to a number of conferences and at least one major publication (Otto *et al.* 2006). More articles and books continue to appear at a bewildering rate (e.g. Jockenhövel 2004/5; Arkush – Allen 2006; a journal specifically devoted to the archaeology of warfare, admittedly mostly “modern” warfare: the *Journal of Conflict Archaeology*, vol. 1, 2005), which suggests that this particular trend is not yet done with.

This means that much groundwork has been done in preparing the way for a considered discussion of warfare and violence in later prehistory down to *ca* 700 BC. This book will thus review the evidence and the interpretations applied, and discuss how it may be used to create a picture of the Bronze Age that dynamically reflects the character of the age, and leads to a more detailed and sophisticated analysis of how human societies took part in intra- and inter-group aggression to express their identities. It could not be said that the Bronze Age of Europe is necessarily better endowed with evidence for ancient warfare than the periods either side of it, but in some ways the study of war in that period is easier to undertake. There is one big disadvantage, the lack of written sources with which to enlighten our studies; but there are other advantages, notably the abundance of weaponry and the presence of large cemeteries in some areas. All in all, the evidence from the European Bronze Age has much to tell us about aggressive activities in the period; and, as we shall see, it can be used to provide often subtle indications of how society changed as interpersonal and inter-group conflict became the order of the day.

In this book, I shall focus to a large extent on the material evidence emanating from the European Bronze Age, with the intention of relating it to the practices of aggression and fighting that must have occurred in that period. I believe that study of this material provides many clear pointers to the form which fighting in the Bronze Age took; and that shedding light on these aggressive activities can also help us to understand other aspects of Bronze Age society, including aspects of the prevalent ideologies of the period and of the ways in which society itself was developing. The very common occurrence in the Bronze Age of items of war, in the form of weaponry, makes this a natural area for intensive investigation, while the progress of research in many parts of Europe means that a very substantial corpus of material is available for study. The wider implications of the material have hitherto been underplayed or even unrecognised; this book is a modest

attempt to redress the balance as far as one category of objects and activities is concerned.

What do we mean by war?

It should be obvious that our first task is to define what one means by the term war (or warfare). While it may be obvious, it is, however, far from easy, and different authorities have preferred different definitions. In general, most would agree that war consists of some kind of organised violence, carried out between groups of people (sometimes represented by individuals), with the intention of inflicting harm both on individual persons and on the group as a whole. The harm may be physical and it may be emotional and psychological, as well as economic in its effects. War is thus legitimised group violence. But there are several kinds of violence that should not be considered war: capital punishment, for instance, duelling between members of the same group, flogging, or torture. Keith Otterbein, for instance, prefers to define war as “armed combat between political communities”, focusing on the use of arms rather than merely violent intention, which he sees as an invitation to invoke psychological explanations for war (Otterbein 2004: 9).

It seems fruitless to try to pin down very precisely what constitutes war in prehistory since, as will become evident, there is plentiful evidence for weaponry and quite a lot for inter-personal violence, without our being able to specify the exact nature of what was going on. I will set out in the course of this book what I see as some of the answers to the question of what constitutes “war” in the Bronze Age; it includes person-to-person fighting and it includes group fighting in the form of raiding; probably also territorial disputes involving skirmishing on the borders of group territories; and perhaps feuding, involving aggression by stealth or the use of long-distance missiles to inflict damage and cause casualties. All of these can, I believe, be attested directly, or plausibly reconstructed.

Why do humans fight? Is warfare an innate characteristic?

“Maybe it is eternal hatred that had them locked together in a death grip” (comment on a website about skeletons, apparently embracing, found at a Neolithic site near Mantua; quoted *New Scientist* 2591, 17 February 2007, 9).

Even without a precise definition of war in prehistory, it is interesting to ask why fighting has occurred so frequently in the past, and continues at the present day in spite of political efforts to stop it. It has thus seemed tempting to some writers to imagine that the aggression that leads to warfare is something inborn in us, a feature that is common to the human condition. This is a debate that has been conducted over many years, and has involved scholars from many areas of scientific debate: psychologists, sociologists, philosophers, anthropologists, historians and others. The answer to the question will depend on the weight which individual observers place on particular classes of evidence. Nonetheless, there are valuable pointers in the literature which assist us in our attempts to understand warfare in the pre-literate and pre-industrial world.

In its simplest form, the question is one version of the nature-nurture debate. What weight is to be assigned to genetic factors in our make-up, the way we were born, the path we inevitably follow by being who we are; and what weight to the environment around us, the influences upon us, our family upbringing, and our social context? It may seem to be avoiding an answer to reply that both sets of factors are important, yet any other answer risks neglecting crucial factors in our complicated physical and mental being.

There are various ways in which one can approach these debates. Prehistoric archaeologists are in many ways at a disadvantage because they cannot discover people's motives either by questioning those they study (as ethnographers do) or by reading accounts of their conflicts and the causes for them (as historians do). Yet the facts of archaeology, which is to say the artefacts and ecofacts that make up the archaeological record, have one big advantage over living people and historical documents: they cannot lie. They may be difficult to interpret, but they are what they are; and while a modern New Guinean may intentionally or unintentionally provide an account that is markedly at variance with reality as perceived by the "objective" observer, and while Thucydides may give "causes" for the origin of the Peloponnesian war that modern scholars find superficial or misleading, a sword found in a grave in Bavaria is exactly that and (other things being equal) cannot be anything other than that sword in that place.

The idea of innate aggression as a subject of study has a long pedigree. Animal studies have usually been the starting point, as with the work of Konrad Lorenz. Chimpanzees, for instance, are normally aggressive when encountering rival groups, and scenes of serious violence, including cannibalism, occur, as the work of Jane Goodall showed (e.g. Goodall 1986). Of course not all higher primates are aggressive by nature: the classic case is that of the bonobo (pygmy

chimpanzee), found predominantly in the Democratic Republic of Congo. These animals, although closely related genetically to ordinary chimps, are famously non-violent, preferring to live peaceful and cooperative lives. The behaviour of other primates does also vary with environment, though these are controversial areas – especially when one asks how this animal behaviour might be related to that of humans (Kaplan 2006). Others have looked into the question of conflict resolution, which enables bonobos and many other species, including those often regarded as aggressive, to avoid damaging fights (Dugatkin 2005).

These studies of aggression go back to Konrad Lorenz, whose studies of fish and birds were immensely influential in the middle of the twentieth century in leading the scientific world to imagine that aggression – specifically intra-species aggression – is an inborn instinct in many animal species (summarised in e.g. Lorenz 1966). Lorenz was cautious in his application of these principles to human societies, since he realised that human culture, in the form of learned modes of behaviour, tempered many of the effects of aggression; but the general idea that aggression is an innate instinct took hold and is still frequently cited. His work leads in many ways directly into the notions of sociobiology, a debate which has engaged scholars in the fields of biology, sociology and anthropology over recent decades. Sociobiology is defined as “the systematic study of the biological basis of all forms of social behaviour, in all kinds of organisms, including man” (Wilson 1978: 16), and its “macroscopic view” is said to have advantages over “the traditional anthropocentrism of the social sciences”.¹

Among the features of human behaviour which have been studied by sociobiologists, and particularly by Wilson, was aggression. “Are human beings innately aggressive?” he asked (1978: 99); and his answer was an unequivocal “yes”. “Throughout history, warfare, representing only the most organized technique of aggression, has been endemic to every form of society, from hunter-gatherer bands to industrial states”. That, allegedly, is why societies create laws to stop violence within their ranks:

“Most significantly of all, the human forms of aggressive behaviour are species-specific: although basically primate in form, they contain features that distinguish them from aggression in all other species.

¹ Not surprisingly, many (if not most) anthropologists vehemently denied the applicability of systematic studies of animal populations to the complex organisms that are humans and, more particularly, human societies; something of the virulence of the debate of the 1970s can be judged from the articles in CAPLAN 1978, especially Allen *et al.*, the Sociobiology Study Group, and Wilson himself.

Only by redefining the words “innateness” and “aggression” to the point of uselessness might we correctly say that human aggressiveness is not innate.... Innateness refers to the measurable probability that a trait will develop in a specified set of environments, not to the certainty that the trait will develop in all environments. By this criterion human beings have a marked hereditary predisposition to aggressive behaviour” (Wilson 1978: 99–100).

These views find plenty of contemporary resonances: “The propensity to commit acts of destructive violence resides in all of us”, and are usually kept in check through the exercise of reason – though the same rationality may enable us to use force on others in a way that makes violence pay (Zillmann 2002). Recent reports have even suggested that there is a genetic basis to violent propensities in certain people (Phillips 2006).

Transferring animal studies to humans, however, is beset with difficulties. Human studies are unpredictable: while it is easy enough to find examples of frequent aggression among certain human groups, and to relate this to territory and resources, there are plenty of other examples which might prove the exact opposite. The usual explanation, which Wilson follows, is that human culture developed means to mitigate the undesirable effects of constant aggression, but also to institutionalise warfare, preventive or aggressive, so that security might more easily be assured; hence the rise of chiefdoms and states. The assumption that war and aggressiveness comes primarily from the genes has, of course, found little or no favour with anthropologists and sociologists, who see humans as highly complex organisms about whom it is dangerous to make cross-cultural assumptions.

In summary, it would be dangerous to view the warfare of later prehistoric times, with which this book is concerned, as proceeding from any innate behavioural tendencies. Aggressive activities may have a long ancestry, but they clearly varied in intensity and effects. This is not to say, however, that there are not general factors, such as land or food scarcity, that played a role in how humans reacted in given situations. One of the themes to be explored in this book is the extent to which such factors can be identified from the mute remains of archaeology.

For ethnographers matters are no less complex, and the range of approaches adopted is also wide. Until fairly recently, it was commonplace to talk of “primitive warfare”, as in the case of the famous book by H.H. Turney-High (1949). This refers to wars or battles fought without modern technology (usually not even with

guns) by societies that may be termed “traditional”, that is to say, small-scale, low-technology societies that survived into the twentieth century in a number of parts of the world, such as the Amazon rain-forests or Papua-New Guinea. Nowadays, the term “primitive” warfare is avoided because of its assumption of technological and intellectual superiority on the part of those who use it; the terms “traditional” or “low-technology” warfare are preferable. This is not to say, of course, that we understand thereby what warfare is about, what causes it, why it should be continued in the face of evidence that it is destructive and harmful, or why it is so common in world history. These are matters that have intrigued anthropologists for decades, and while there are aspects that are still not understood, much progress has been made in determining what should and should not be regarded as significant in the study of war in traditional small-scale societies.

For instance, it has been a commonplace that warfare must have served some purpose in the societies that conducted it if it was so commonly (and from a modern perspective so uselessly) entered upon. A variety of explanatory mechanisms were promoted, which may be loosely termed functionalist. These included the following: warfare served a purpose as a regulatory mechanism for social relations within society; it promoted group solidarity; it provided means by which societies could renew subsistence resources; it promoted the existence of elites; or it provided a mechanism by which more advanced political forms could emerge, to everyone’s benefit (society at large, as well as the more narrow interests of the elite who rose to power). In a more general sense, warfare is, on this interpretation, adaptive in some manner, in that it enables societies to respond to pressures from outside, whether environmental or human.

A critique by Hallpike (1973) provides a salutary reminder that while functional aspects should not be forgotten, they can hardly occupy prime position in the study of warfare. Actions such as warfare can always be interpreted as benefiting someone; it will depend on the size and nature of the social unit studied as to whether the benefit can be perceived as functionally valuable or not. Much warfare in small-scale societies is undertaken because of perceived need by those involved, such as the avenging of slights, thefts, or murders; or of course it may have been defensive, a matter of vital necessity for the continuing existence of the society, which does not thereby make it functional except in the crudest sense. Territorial disputes are ethnographically well-attested and must certainly have occurred in prehistory, whether through the degeneration of the environment (naturally or humanly caused) or some other cause, but that does not make

them adaptive, nor are their effects necessarily long-lasting. Ethnography can provide examples of groups for whom aggressive behaviour towards neighbours with a view to appropriating their land was normal; and it can equally provide examples of groups who took virgin forest into cultivation rather than attack their neighbours. In other words, warfare need not arise from territorial expansion, though it can do so; what we need to know is why it does in some instances and not in others.

Another argument along the same lines is that competition for resources led to conflict, and this does indeed seem one highly plausible motive for war which can certainly be attested ethnographically and historically (cf Robert Carneiro's "circumscription theory": Carneiro 1970; cf Webster 1975). In the case of European prehistory, one may question whether the availability of resources – such as metals or salt – was ever a critical variable. In my view foodstuffs were unlikely to act as such a variable since people would not settle, or continue to settle, in areas where a capacity for food production was not inherently possible – which is not to deny that food may have been moved over moderate distances, especially when it was not perishable or it had been preserved by drying or salting. Of course if the environment suffered a notable degradation things might have changed, and we can point to instances in the archaeological record where this seems to have occurred; and people are not always ready or able to up sticks and move their location of residence. But one answer to such a situation could have been that technologies changed to meet the challenge, as Boserup argued long ago in her consideration of agricultural growth in low-technology economies of the twentieth century (1965); one need not necessarily assume that because certain levels of technology were not available at particular times people could not find other ways of doing things. Technology was undoubtedly important in all sorts of ways to later prehistoric as to all other peoples, and the absence of some technologies meant that certain practices were impossible. If you don't have tractors you cannot deep-plough; if you don't have gunpowder you cannot kill people from more than a distance of 100 metres or so; but in neither of these cases would human activity necessarily be curtailed, since people already had, or they invented, other mechanisms with which to continue agriculture or aggression.

At the same time, Hallpike's statement that violence by humans is simply a matter of human nature (1973, 459), as a result of desire for power over others, love of prestige, sexual gratification or envy of those better placed than oneself, is open to many of the same charges that are levelled at functionalists: how do we know this is necessarily true, and if it is true, why is it true? For my purposes in

this book, however, the issue of innateness is less important than the demonstrable observation that fighting does occur, has occurred in the past, and surely occurred in the Bronze Age.

Why do wars happen?

For prehistoric archaeologists, warfare is in many ways an assumption rather than a fact, a *demonstrandum* rather than a *factum*. For historians and ethnographers, matters are different since they have ample evidence, either from written accounts or from living informants, that wars took or take place. While ancient accounts of warfare, for instance by Greek and Roman authors, may be relatively unsophisticated in their approach to the causes of war, modern historians adopt a panoply of explanatory devices to investigate both the immediate and the deeper reasons why peoples and states fight each other.

Wars happen, and historians feel a need to find out why. Actually, they usually investigate why one particular war happened, and it is a common mistake to think that because there were certain causes for one war it should be possible to discover causes for all wars. In fact, prehistoric archaeologists have to be wary of placing too much reliance on analyses by historians, since their methods and materials of study are so different.

The leading historian of war in the English-speaking world at the present day, Jeremy Black, has discussed these matters in several penetrating analyses (e.g. 1998). As he states:

“It is helpful to complement general accounts of human, and indeed animal, propensities to violence with understandings of the varied nature of war and of why individual conflicts or groups of wars broke out. A general propensity to violence cannot readily explain peace or the decision to engage in particular wars” (Black 1998: 13).

and

“General accounts of propensities to violence are of great value, because they clarify the question of human responses to disputes, and focus on the importance of arousing, channelling and legitimating violent urges, and of persuading people to fight, kill and run the risk of being killed, without which there is, and can be, no war.... This willingness to kill is a conflation of long-term anthropological and psychological characteristics and more specific societal and cultural situations” (ibid.: 14)

But matters are complex, because wars, though common, do not always break out; there are plenty of instances where the ingredients for conflict were present but the participants drew back from it:

“A standard way to explain a war is to discuss which amongst a number of disputes and attitudes, each of which was regarded by different contemporaries or scholars as the cause of the conflict, was in fact the crucial issue. There is an alternative: the consideration of why, at a given moment, the range of hostilities and issues that made war a constant possibility, and conflict often a continual reality, led to serious hostilities, and also, by extension, why, for the most part, there was no such result” (ibid.: 19)

Instead, one should look elsewhere for an explanation of why wars occur in some instances and not in others.

“In many cultures, and, in what could be referred to as ‘warfare societies’, rulers and governing elites sought war, enjoyed conflict and felt they could profit from it... War has to be understood in terms of ideologies, elite roles, government and social purposes, sports and games. These explain how war was waged, why elites fought, and why wars began, and the latter three cannot be readily separated” (ibid.: 32).

Black’s favoured solution revolves around the concept of “bellicism”, the propensity to bellicose actions and pronouncements.

“Bellicosity is crucial to the point that having a reason to fight does not necessarily entail action... The use of the concept of bellicosity, in part, overcomes the unhelpful distinction between rationality and irrationality in motivation and conduct. Bellicosity can be regarded as both, or either, a rational and an irrational response to circumstances. Such an argument, also, helps address the suggestion that while cultural factors act as an enabling force in allowing wars to happen, they do not cause them and that, instead, politicians have to want to go to war from some perceived benefit to the state” (ibid.: 35).

Now the concept of bellicism, or the propensity to bellicosity, may be helpful for any understanding of the nature and causes of war throughout history and prehistory, but it does reinforce the view that war is innate and therefore unavoidable. Of course some peoples or states have simply been the victims of aggression; they have been attacked without being bellicose in the least (most of

the states attacked by Nazi Germany in 1939–41, or Native American societies destroyed by colonial adventurers, would fall into this category). But in many other instances in history, warlike noises emanated from both parties prior to the conflict, even from the side which was patently the underdog and could not have hoped to win in any future conflict by virtue of its smaller size, less developed military technology, quality of leadership, or geographical situation. It is entirely possible for the periods which this book addresses that bellicosity was the order of the day, and that concepts of “rationality” in proposing war (for instance, in terms of fighting strength or equipment) were therefore irrelevant.

Another commentator on the causes and origins of war believes that “in a world of sovereign states a contest among them over the distribution of power is the normal condition and that such contests often lead to war”, and that “the reasons for seeking more power are often not merely the search for security or material advantage... [but also] greater prestige, respect, deference, in short, honor” as well as fear (Kagan 1995: 569). This author inclines to the view that wars always have happened and most likely always will: “Statistically, war has been more common than peace, and extended periods of peace have been rare in a world divided into multiple states” (*ibid.*: 570).

These remarks may have some applicability to the small-scale societies that are the subject of this book, but in general it seems to me that modern historians are not well placed to make judgements about the prehistoric past: they carry too much baggage from their own sphere of study. This is not to deny, however, that they can give prehistoric archaeologists many useful and important insights.

Ethnographers and cultural anthropologists have had much to say about the causes of war (e.g. Ferguson 1990, 2006; Kelly 2000; Otterbein 2004; and many others), and many studies of particular areas have drawn on these principles. Thus Kelly’s concern has been with the earliest phases of human history; he has been concerned to identify why many societies are essentially peaceful, engaging only in small-scale violence, and to examine what makes them different from those where war is a common and recurring feature. On the basis of the ethnographic sample considered, “the distinctive features of warless societies are organisational and linked to an absence of certain group concepts... The transition from capital punishment to feud or war... is thus contingent upon the development of the companion concepts of injury to the group and group liability that provides grounds for generalized, reciprocating collective violence that takes the form of raid and counterraid” (Kelly 2000: 43). Specifically, in organisational terms these are termed “unsegmented societies”, characterised

by the “minimal complement of social groups”, not combined into higher-order organisations. All depend for subsistence on hunting and gathering. By contrast, where food storage becomes the norm, the incidence of warfare is much higher; food becomes the target of raids, and the preservation of food in periods of scarcity an essential (*ibid.*: 68). Societies that store food are segmented, i.e. have some degree of internal social organisation that is above the basic minimum needed for a society to function. The start of war then occurs when societies move from unsegmented to segmented, and in economic terms from hunting to food-storing, whether based on foraging or on agriculture; in those cases where unsegmented societies engage in war, it is because of resource scarcity and higher population density (*ibid.*: 143–4). It follows from this that war, as opposed to small-scale internal violence, finds its origins in the Upper Palaeolithic, and proceeded to take its course towards being endemic during the periods that followed (after 10,000 BP).

Kelly’s work drew on the kinds of statistical analysis undertaken by anthropologists such as Carol and Melvin Ember, whose many studies have been concerned with cross-cultural analyses of societies that engage in war, to see what factors they might hold in common (e.g. Ember – Ember 1997). Their approach has been followed (and confirmed) by a number of other commentators, for instance Lekson (2002) for the American South-West. Valuable as these studies are, it remains uncertain how valid it might be to transfer their results into the archaeological record. It does emerge from their studies, however, that foraging societies are much less prone to engage in war than horticultural or agricultural; perhaps for the reasons advanced above. Hunting and gathering societies are more likely to find methods of conflict resolution, as Kelly points out; perhaps because the continuance of violence in such small-scale societies might threaten their very existence.

Another commentator has reviewed the various theories advanced by anthropologists and biologists, finding most of them wanting in one way or another (Dawson 1996) and preferring a kind of cultural Darwinism that is adaptive in some ways; in bringing access to resources, for instance, but also in bringing honour and glory: “nurture imitating nature” as Dawson puts it.

In general, observers from the sphere of cultural anthropology and ethnography have tended to the view that the more developed the internal structures of society, the more prevalent and deadly was warfare. This analysis has been developed at length by, for instance, Keith Otterbein (2004), and it is highly plausible. This is not to say that all early states were automatically warlike, but many certainly

were. Arguably, then, their predecessors – usually termed chiefdoms – saw war as well, in more attenuated but precursor form. In the societies considered in this book, the type of social organisation was one usually characterised as chiefdom-based, in the sense that there was a form of internal structuring through which certain individuals acquired wealth, prestige and power through a variety of mechanisms, and proceeded to control access to resources and to direct labour towards communal projects. Such control might have been exercised in various ways, but force was very likely one of them; while resource constraint may have led to friction between neighbouring groups. In these ways, war in the Bronze Age constitutes one of the building blocks of the early state societies that emerged in Europe during the Iron Age.

Violence and warfare in ethnography

Ethnographers have observed war in many societies round the world, and sought to explain it – either in local terms, or in terms of wider principles that might apply cross-culturally. Much of what is called warfare in small-scale societies is a type of violence which is better named feuding. Among others who have studied this phenomenon is Otterbein (e.g. Otterbein – Otterbein 1965), finding a strong relationship in “high-level societies” between war and the absence of feuding; in “low-level societies” war and feuding are positively correlated. “In primitive societies, feuding occurs when fraternal interest groups are present but ... is controlled by political authority and by a state of war” (*ibid.*: 1479). This work was based on a wide-ranging cross-cultural study, though one cannot of course determine in archaeological situations whether this type of aggressive activity was present.

The Yanomami (Yanomamö), much studied in recent times, typically engaged in feuding, and, mafia-like, in the absence of a powerful central authority were unable to stop the practice since one killing leads inevitably to another. Indeed, not to engage in revenge killings was a mark of shame. This phenomenon has been observed in many societies over the years; the travels of Edith Durham in Albania in the early years of the twentieth century provided her with abundant instances of blood feuds which refused to die out for precisely this reason – or so she believed (Durham 1909). The Yanomami have been the subject of fierce debate as well as much study. The classic modern study of them by Napoleon Chagnon (1968) retailed much evidence of warfare, which Chagnon found to be adaptive, in other words a mechanism for the regulation and ordering of

society. On the other hand, Chagnon himself stood accused of exaggeration in his treatment of the Yanomami, and of fostering some of the conflict himself. In other contexts too, it has been suggested that much of the warfare observed by modern ethnographers is far from typical of what would have happened prior to the arrival of Europeans and guns (e.g. Ferguson 1992; 1995). This is an important point, and should be remembered when issues of the “innateness” of war are debated.

The type of warfare engaged in by the Dani of New Guinea is, or was, apparently of a similar kind (Heider 1997: 94 ff.). The famous film *Dead Birds* (1962) depicted traditional inter-tribal warfare in the Highlands of West Irian; Karl Heider was a member of the Harvard-Peabody Expedition that visited the Grand Valley of central New Guinea in 1961, and the film, made by Robert Gardner, was one result of the expedition. Much of what is known about Dani warfare comes from Heider’s published writings, as well as from the film.

Dani social organisation was one of loose alliances, constantly shifting. Conflict was usually over pigs or women; this was rationalised as the need to placate ghosts who controlled death and disease (of both pigs and humans). Once it was decided to embark on war, support would be sought from allies and hostilities begun. These were of high frequency but low intensity; encounters were bloody but fatalities rare. Less than two hundred warriors on each side was the norm. To begin with, insults would be traded; then the line of warriors would move closer together, to be in arrow range, but usually arrows could be dodged. More occasionally the fighters came within spear range, but the fighting rarely lasted more than fifteen minutes, and any warrior who was hit was more likely to die from infection than direct damage to a vital organ. Such a death triggered the need for revenge; so the cycle of low-level violence would continue.

The type of warfare practiced by the Dani, sometimes called ritual warfare (a term that some commentators believe is incorrect: Otterbein 2004:34 ff.), is clearly different from that adopted by the Yanomami, whose preferred style was raiding, ambush, or surprise attacks. Archaeologically we might be able to attest both styles of fighting; or neither. There might be many alternative versions that remain invisible to us; yet these models are plausibly persuasive as examples of how war in the Bronze Age might have been conducted.

Transferring ethnographic data to the archaeological record is, therefore, fraught with difficulty. Many observers in the Americas have preferred to interpret their data through a mixture of ethnographic and archaeological observation and historical reconstruction. Much attention there has been devoted

to the interpretation of the evidence that suggests conflict and violence. Of the many works that have appeared, those by LeBlanc on the American South-West (1999), or Redmond (1994) on South America, are particularly detailed, as is that of Ferguson (1995) on the Yanomami. Other writers have considered war as part of a wider study of their area; Flannery – Marcus, for instance, have long studied the Oaxaca valley in Mexico, and have recently (2003) been able to suggest specific times at which inter-village raiding began, while Arkush – Stanish (2005) have examined the situation in the Andes. A range of other authors have recently presented case studies from other parts of the world (contributors to Arkush – Allen 2006). A huge literature has been generated, which it is not the concern of the present work to discuss; but the general lessons that emerge serve to inform thinking on the study of ancient warfare in any part of the world – including Bronze Age Europe, the subject of this book.

Chapter 2.

The nature and identification of prehistoric warfare

Since the purpose of this book is to define what form warfare took in the period under consideration, and what implications it had for the societies who practiced it, here I shall merely outline some possible forms of warfare that might have applied, without specifying which seem most appropriate to the European Bronze Age.

In a prehistoric context, by definition pre-literate and pre-industrial, it is highly unlikely that warfare took any form that is familiar from modern times in the developed world. For us this usually means army warfare, or at least war conducted by relatively large-scale political units involving significant numbers of combatants (typically thousands or tens of thousands as a minimum). Of course armies existed in the ancient world, most obviously in Rome but also (on a smaller scale) in Egypt, Assyria, and Greece, but these can hardly be compared to the armies of the modern (post-Renaissance) world. The Homeric poems and the biblical Old Testament describe an Iron Age situation even if they contain memories of earlier days; in the *Iliad* we have plenty of talk of massed troops but they are hardly armies in the sense that the Romans would have recognised, let alone those of the medieval or modern periods. It is hard to tell from Egyptian monuments how many men fought in major battles such as Kadesh since the scenes inscribed are not designed for historical accuracy, nor is it known how many men were kept under arms; but it is unlikely that even the largest battles involved more than a few thousand people in total. By comparison with these developed East Mediterranean societies, those in Bronze Age Europe (with the possible exception of Greece) seem most unlikely to have had the capability to muster armed bands numbering more than hundreds, conceivably in extreme cases the low thousands, depending on period.

Instead, we can envisage inter-personal and inter-communal violence in the Bronze Age as having taken a number of more restricted forms. The first of these might have been combat between individuals. Whether or not relevant to the Bronze Age, the *Iliad* gives us a good idea of what such individual combat might have been like. Although the Trojan War was a geopolitical event, and we are told that Greeks and Trojans faced each other as power to power, when it came to the actual fighting the real matter of interest to the poet and his listeners was the combat between pairs of named individuals. These were not decisive in the

overall scheme of things, with the possible exception of the killing of Hector by Achilles; but they were important, and the defeat or death of an important warrior was certainly demoralising for his fellow fighters. As we shall see, there are good grounds for believing that individual combat was an important element of Bronze Age “warfare”, whether or not it followed the Homeric pattern.

If individual warriors played a part in Bronze Age warfare, it is highly likely that groups of warriors also played an important role. The evidence for such warrior bands is not easy to detect, except in so far as hilltops were used for settlement and fortifications erected at various periods of the Copper and Bronze Ages. While this may in some instances have been a choice dictated by custom and practice rather than defensive need, it is hard to avoid the conclusion that in many cases the purpose really was defensive, and that raiding parties could be sent out by groups of people (presumably from the same socio-political grouping, i.e. “tribe”) for the purpose of stealing foodstuffs, animals or other commodities, and generally making life difficult for other groups. This then is a second type of violent interaction we might expect to distinguish.

Ethnography and history tell us too that not all raiding on enemies is conducted in the open. Aggression by stealth can occur; the well-documented instances of Yanomami feasts where enemies invited to partake are subsequently slaughtered are often quoted, even though some doubt has been attached to the veracity of such accounts. The Trojan horse is the classic instance of aggression by stealth or trickery, whether or not we believe in the literal truth of the story. We can predict that it will be hard, if not impossible, to detect such instances in the archaeological record, but that does not mean it did not occur.

Of course it is possible that more formalised fighting did occur, and that groups of fighters numbering in the hundreds (possibly even thousands) met for battle in open ground. Our chances of detecting this in a Bronze Age context are slight, though as we shall see there is plenty of evidence for the large-scale production of weaponry. I suggest that the best way of determining whether such a possibility existed is to examine the scale of human groupings, in particular settlement size and cemetery statistics. If the evidence indicates that groupings were always small in a given territory, it is impossible to imagine that inter-communal fighting took place other than on an extremely limited scale, and consisted of skirmishing by rather small groups of armed men.

Lastly, we should consider the possibility that combat, when it did occur, was typically in a highly ritualised form, and seldom conducted for the sole purpose of defeating an enemy by means of killing. We shall see in what follows that the rock

art of Scandinavia has an important role to play in this, since many scenes that purport to show armed men fighting can readily be interpreted as scenes of ritual rather than actual combat to the death. The effects of ritualised combat between warriors might have been little different from those of real fighting in earnest, in that “victory” or “defeat” might have had much the same significance in both. In both cases, for instance, “defeat” = “disgrace”, but while a dead warrior cannot fight again, a defeated but living one can fight another day.

What then was “war” and “warfare” in the Bronze Age world, and what was it not? The investigation in this book will attempt to answer the question more precisely, but it seems legitimate to assume a number of things. First, later prehistoric warfare would have been by our standards small in scale, involving scores or hundreds of people and not thousands. Second, prestige in fighting by individuals will have led to the emergence of warrior heroes, who might represent societies in individual combat. Third, ethnography suggests that wars were rarely “total” or decisive, usually taking the form of skirmishes or raids that might temporarily affect the balance of power in a region but usually did not have any longer-lasting consequence.

“War” in the Bronze Age, then, means something different to what we today normally understand by that term. In fact a better word for the types of aggressive behaviour that we can reconstruct is probably “violence”; but this is a rather neutral term, whereas “war” is a concept that is deeply engrained in our consciousness. Violence between individuals and groups surely occurred; we can call it “war” as long as we are clear what we mean by the term in the context we are examining, as discussed in Chapter 1 above.

The archaeological identification of warfare

For the prehistoric archaeologist, the identification of war and warfare is important, since we assume that it had significant effects on the societies who engaged in it. Where literary or epigraphic evidence is present, as is the case with Greek and Roman history, we often have an exhaustive list of battles and conflicts, since some of the most famous authors (Thucydides, Xenophon, Livy, Tacitus) were extensively preoccupied with military history. Identifying these archaeologically is more problematical. Though it may be possible to identify the battlefield, as with Sphacteria in the Bay of Navarino (425 BC) or Marathon (490 BC), it can be much harder to recover specific traces of specific battles. Even so well-known a slaughter as the loss of the Roman legions under Varus to Arminius

in the Teutoburger Wald (9 AD) is hard to spot; the monument that stands southwest of Detmold at the present day is more symbolic than realistic in its siting, since it is now recognised that a site at Kalkriese near Bramsche, on the northern slopes of the Wiehengebirge in Lower Saxony, north of Osnabrück, is most likely the spot where the decisive action took place (most recently Moosbauer – Wilbers-Rost 2007). The great mound at Marathon, it is true, contained at least some material contemporary with the famous battle (Stais 1890, 1893; Mersch 1995), but where can we see the actual remains of the Battle of Thermopylae? We cannot; not because it did not take place at Thermopylae, but because what was in antiquity a narrow defile between the cliffs and the sea is now on the edge of a large coastal plain, and any remains of the battle, if they exist at all, must be buried beneath alluvium. Add to this the fact that the testimony of ancient authors cannot necessarily be taken at face value (witness Caesar's accounts in *de Bello Gallico*) and we have a situation that is ambiguous at best, and fictitious at worst.

Archaeological evidence, as opposed to literary or epigraphic, has the merit that it does not lie, however difficult it may be to interpret. If archaeological facts are artefacts (and ecofacts), then there are plenty of them available to us in the arena of ancient warfare. What is problematical is to determine their value and meaning.

The topic of identifying warfare in the archaeological record has been addressed by many people in the past (e.g. Osgood 1998; Carman – Harding 1999; Driessen 1999; and many others). We can divide this evidence into five categories: weaponry (offensive and defensive); trauma on human skeletal material; site installations, typically fortifications; depictions, for instance on rock art, on painted pottery, or modelled figures; and social organisation as shown through settlement and cemetery material.

The history of weaponry, which I consider in more detail in what follows, is especially important, in spite of potential ambiguities in function. To kill or wound another human being, one usually needs an implement, either a heavy blunt object or a sharp narrow object. While blunt objects such as hand-axes may have been used to bludgeon adversaries in earlier periods, by the Neolithic it seems most likely that more subtle means of despatch were available, even though blunt force was also used. In later prehistory we can follow the development of weaponry from bow and arrow, through the dagger to the rapier and sword; and to counter their effects, protective measures in the form of armour were adopted. The problem with these objects is to determine whether they were really intended for use against other humans as opposed to animals. Especially with the bow and

arrow, a use in hunting was no doubt as old as the objects themselves, and an initial function in hunting might have been turned later on into a function as a weapon against humans. Perhaps both functions were intended from the start. Daggers too might have started life as part of the hunter's equipment, for administering the *coup de grâce* to a wounded animal and for carrying out jointing or butchering; but they must also have served a purpose in man-to-man combat if and when fighting at close quarters developed – or in aggression by stealth, for stabbing in a surprise attack. As the dagger grows longer to become the sword, however, so the likelihood of a use against animals decreases. In spite of iconographic evidence from Mycenaean Greece which appears to suggest that swords were used in hunting, in practice it is most likely that the sword was a specific development for the purpose of human combat, and that swords were intended to kill or severely wound an opponent; and it was against their use that armour was developed. The history of weaponry and armour in the Bronze Age is thus a crucial aspect of our understanding of later prehistoric warfare.

Trauma on human bones is usually regarded as indicative of aggressive behaviour by adversaries (Arnott 1999; Knüsel 2005), but here the problems are different. To begin with, human osteologists have not always recorded the evidence of trauma, or if they have they have not done so consistently; and if they have done that, they have not agreed on its interpretation. Nevertheless, there are sufficient instances of trauma (cut marks, blows from blunt instruments, fractures) for a reasonable supposition of aggressive action to be made in a good number of specific instances. Much more controversial is the interpretation of marks that might indicate the butchering of human bodies, or the extraction of marrow from human long bones; and in particular interpretations of cannibalism on human skeletal assemblages (below, p. 37). While this is an important and potentially relevant aspect of warfare, it is not a prime concern of this book.

The other substantial category of evidence that is frequently cited in discussions of later prehistoric warfare is that of site installations, usually meaning defensive features such as ditches, banks and ramparts enclosing smaller or larger areas that might have served as permanent settlements or temporary refuges. Until relatively recently it was thought beyond question that such fortifications were erected for the sole purpose of defending communities from attack by neighbouring groups, but in recent years scholars have come to the realisation that sites cannot always be interpreted in this way; and in particular that ostensibly defensible sites were not actually placed in the optimal position for defence, or that defences were much more elaborate than was strictly necessary. In any case, very large defensive

installations must have been hard to defend against superior numbers, so that the existence of fortifications might have been more a matter of defining a community than of realistically contributing to its defensive capability. This is not to deny, however, that some sites were defensible and defended; but the interpretation of the sites contributes to, and simultaneously depends on, our notions of how prehistoric warfare may have been carried out.

Depictions on pottery or gemstones, or on painted or engraved rock surfaces, occur in some contexts but they are notoriously hard to interpret. At the same time, they do provide something akin to direct visual evidence for the appearance of warriors in antiquity, and perhaps the ways in which weapons were wielded and thus how fighting was conducted.

Finally, there are the wider archaeological manifestations of warlike societies to consider, as they may be exhibited in other aspects of the archaeological record. This refers particularly to the evidence of buried individuals and what accompanied them in their graves. Such evidence is often hard to interpret, but it provides fruitful ground for an understanding of complex social processes in the ancient past. This is a matter of comparing and contrasting grave-good provision, especially in those cemeteries where weaponry is included among the goods, and seeking to draw conclusions from differential provision. Such endeavours can go beyond the speculative; objective measures of difference are available, which force us to accept that such provision was not a matter of mere chance. Graves containing bodies (usually male) accompanied by one or more weapons, and unusual numbers of other artefacts (including “rich” ones made in materials that were intrinsically attractive or hard to procure), are principally those we should be seeking to interpret. Where a cemetery or group of burials shows numbers of individuals bearing arms, and a single person furnished with especially large quantities of goods, more sophisticated interpretations involving warrior bands, or similar elite fighting groups, may be possible. Such interpretations have been attempted for, among others, the extraordinary depositions that occurred with the Hjortspring boat of the Early Iron Age in Denmark (Randsborg 1995) – a little later than the period considered here, but arguably relevant to the centuries preceding it as well (below, p. 165).

The question of cannibalism

The vexed question of cannibalism may be considered briefly, since it is a topic that has appeared frequently in the archaeological literature without much clear

and unambiguous evidence on the ground to support its existence. As has been pointed out in the ethnographic literature, human cannibalism has never, or rarely, been witnessed directly by ethnographer observers, only reported by informants at second or third hand. Indeed, W. Arens (1979) went so far as to claim that in the absence of secure reports institutionalised cannibalism probably never existed, and Paul Bahn has expressed similar reservations (1991). There do appear to be enough reliable reports available, however, to suggest that in rare instances the practice has occurred (e.g. most recently reports from ethnic conflict in Borneo: Lloyd Parry 2005a, 2005b), and recent biochemical evidence has lent support to the view that cannibalism has taken place in a variety of ancient and modern instances (Hollingham 2004). It is known, however, that cannibalism occurs in a number of other species, both mammals, insects, fish and birds, and is known from other primates including chimpanzees.

A review of the literature on the subject has been provided by White (1992) and Peter-Röcher (1994); several other authors have given shorter accounts (e.g. Fernández-Jalvo *et al.* 1999; Villa 1992; Keeley 1996: 103–6). These authors have discussed the matter of identifying cannibalism in archaeological contexts, as have Villa – Mahieu (1991). In the Americas, the work of the Turners over many years is fundamental (e.g. Turner – Turner 1999), while the contributors to Brown – Tuzin (1983) have provided a discussion from the ethnographic point of view. Turner – Turner (1999: 10 ff.) give a full review of the criteria for cannibalism from an inspection of bone damage, including “human damage to bone” (*ibid.*: 18 ff.), along with the detailed evidence for cannibalism in the American South-West (*ibid.*: 56 ff.) and in Mexico (*ibid.*: 415 ff.). They seek to explain the practice through a “hypothesis that combines social control, social pathology, and ritual purpose within the Chacoan sphere of influence” (*ibid.*: 484).

Four basic motives are usually suggested for the occurrence of cannibalism (cf Helmuth 1973): as a means of indicating contempt for and insult to the victim (aggressive cannibalism), or as an expression of affection (“We eat those whom we love”); as a ritual practice, sometimes in connection with the disposal of the dead, for instance as a means of acquiring power from the vital organs of the dead person; and as a survival strategy in extreme circumstances. It is usual too to divide cannibalism into endocannibalism (taking place *within* the social group of those doing the eating) and exocannibalism (*outside* the social group). Clearly in the study of violence and warfare it is only aggressive cannibalism

that is involved, and it is most likely to be exocannibalism, unless a remarkable breakdown within the social group occurred.

Cannibalism as a survival strategy is securely attested in a few well-chronicled instances, such as in the extraordinary story of the survivors of the whaling ship Essex in 1819–20 (Philbrick 2000), the “Donner Party” in the Sierra Nevada mountains in 1846–47 (Stewart 1936/1986), or the Andes plane crash of 1972 (Read 1974). Cannibalism in cases of famine is somewhat more difficult to determine, but it seems that it occurred regularly during the famines of Ukraine in the 1930s and the siege of Leningrad (1941–43), and there are dark references to it having occurred during the Irish potato famine of the 1840s.

Cannibalism might be considered an aspect of violence against the person, in the sense that the ultimate insult one might hurl at a foe was to eat his (or her) body, or at least certain parts of it (heart, brain etc). Reports of this practice seem designed, however, to scare people, to suggest that one’s enemies are violent, uncivilised and morally degraded, since one’s own society has a taboo on the practice (as indeed do the vast majority of societies world-wide, historically and at the present day). Ritual cannibalism, on the other hand, seems more likely to find some resonance with archaeologists, since it would join a host of other practices for which no “rational” explanation can be found. Indeed, the act of symbolically eating the divinity is one which is well-attested in human history, not least in Christianity. The consumption of bread and wine, specifically stated by the founder of the religion to represent his body and blood, provides spiritual comfort and help to believers. The belief by some Roman Catholics that the bread and wine really are transformed – “transubstantiated” – into those bodily substances suggests that the practice represents something more than psychological; as the corporeal substance of the divinity it actually gives physical nourishment as well.

All this might be far removed from the study of violence and warfare in prehistory, but enough instances have been stated to represent cannibalism that it becomes necessary to consider how and when it might have existed. The physical evidence for cannibalism on prehistoric sites is likely to revolve around the treatment of the body, and in particular the state in which human bone occurs. Thus butchering marks, particularly cut and scrape marks, the splitting of bones to extract marrow, and signs of burning or charring, seem the most likely of all to represent intentional dismembering and heating for the purposes of cooking and eating. Other practices, such as beheading and head or skull collection, are

certainly aspects of peri-mortem body treatment, but there is no reason to suppose that cannibalism is involved.

Among the later prehistoric sites where cannibalism has been claimed, on the basis of the treatment of bone, are the Late Mesolithic finds from Drigge on the island of Rügen (Terberger 1998), the Neolithic levels of the cave of Fontbrégoua (Villa *et al.* 1986a, 1986b), caves in the Kyffhäuser (hills) near Bad Frankenhausen in Thuringia (Behm-Blancke 1958; cited by Peter-Röcher 1994: 97), the Jungfern cave at Tiefenellern (Upper Franconia, Bavaria) (Kunkel 1955), various Bandkeramik sites (Peter-Röcher 1994, 104 ff.), and sites of the Knovíz, Lausitz and other Urnfield cultures in central Europe (*ibid.*: 85; Lehmann 1929; Malinowski 1968; Chudziakowa 1975; Pavelčík 2004). In 1988 a group of Czech and Slovak authors considered the possibility of cannibalism in a variety of Bronze Age contexts, though in almost all cases they were dealing with apparently unusual burial deposits rather than specific evidence for the butchering of human bodies (Dočkalová 1988). Other studies, from other parts of the world, which are important in any consideration of cannibalism include those by Tim D. White on the Mancos Canyon site 5MTUMR-2346 in Colorado, dated *ca* AD 1100 (White 1992); and Christy Turner on sites in the American South-West (Turner – Turner 1999, and many other works).

A detailed study carried out by Alan Outram and Christopher Knüsel on the human and animal bone from Velim, Czech Republic, in 2002–3, is particularly instructive in this respect (Knüsel – Outram 2007; below, p. 86). Previous reports on the human bone from this site (notably Dočkalová 1990) had explicitly stated that the trauma marks recorded emanated from cannibalistic practices. In order to test this hypothesis, a detailed comparison was made of the human and animal bone recovered from controlled excavations between 1992 and 1995, with a specific protocol devised for the recording and comparison of the two sets of bone. The result was clear-cut: the two were treated differently. Animal bone was subject to the usual run of practices connected with butchering and cooking, including chopping, splitting, twisting, and burning. Human bone showed marks of trauma, including cut marks and signs of attempts at beheading, but none of the signs of butchery associated with preparations for cooking. Violence against the person was indeed attested, but this was much more likely to be connected to the events surrounding the construction and use of the Velim site rather than with practices concerned with cannibalism.

Cannibalism is thus relevant to the present theme only insofar as it can be related directly to violence and where it can be reliably attested from archaeological

remains. This severely limits the likelihood that we will be able to identify the practice as an accompaniment of warfare in later prehistory; and even if we can, it does not tell us a great deal about how warfare was practiced or conceived.

Conclusion: warfare in prehistory

It will be clear from the foregoing that identifying warfare in the Bronze Age depends on a variety of factors. In Chapter 1, I looked at some forms of fighting that occur in ethnographic situations, including skirmishing, raiding, feuding, and aggression by stealth. Transferring these forms of fighting to the archaeological record is necessarily speculative. For archaeologists, the primacy of material data in developing our understanding of long-forgotten activities is crucial, but that too is open to interpretation. The identification and interpretation of cut-marks on human bone, for instance, remains controversial for many scholars, since practices such as cannibalism or violence to children are emotive issues. But other evidence, particularly that of weapons, is powerful and commonly found; and it is to a consideration of that evidence that I now turn, beginning with a consideration of the chronological background to Bronze Age warfare.

Chapter 3. Warfare before the Bronze Age

War in the earliest human societies has often been discussed and the relevant evidence presented, so that no extensive account is needed here (e.g. Escalon de Fonton 1964; Behrens 1978; Vencl 1984a, 1984b, 1999; Dolukhanov 1999; Guilaine – Zammit 2001/2005). In general, the earlier the period in question, the more scanty and ambiguous the evidence available. Thus although the issue of Palaeolithic war has often been discussed, in practice there are few leads available on which to base any kind of firm conclusion; these are mostly pathological features on skeletons, notably skulls. Whether, or to what extent, it is possible to interpret such trauma as the result of more than very localised aggression, or conflict between individuals or small groups, is doubtful. Skull injuries have been found on early hominins, for instance Australopithecines, but these lie beyond the scope of this volume (Roper 1969). Even the relatively frequent skull damage seen on Neanderthalers (Kunter 1981: 226) need not suggest anything more than highly localised group conflict, though it is with the Neanderthal period that the earliest injuries definitely caused by projectiles occur (e.g. hip injury on individual IX at Mugharet-es-Skhul: McCown – Keith 1939: 74–5, 373, Figs 37–38). Recent reports have also indicated that cut marks were found on Neanderthal bones from El Sidrón cave in the Asturias region of northern Spain (Hooper 2006). By contrast, relatively few injuries of this sort are reported on early examples of *Homo sapiens sapiens*.

With the Mesolithic we are on rather firmer ground (Vencl 1991). The famous case of the Grosse Ofnet cave near Nördlingen, Bavaria, is frequently cited (Orschiedt 1998, 2005; Baum 1991; Frayer 1997; Peter-Röcher 2002). Here the skulls of 33 individuals found in a couple of pits included those of twenty children, nine adult females and only four adult males, mixed with red ochre and ash; six of the individuals (all four males and two children) had been struck heavy blows with an axe-like implement, blows that must have been the cause of death (assuming no other wounds had been delivered first). Most observers of this site have assumed that the site represents the aftermath of a conflictual encounter, perhaps a massacre (Frayer 1997); and indeed the grounds for believing this seem at first sight compelling. Heidi Peter-Röcher, on the other hand, has argued that the assemblage is what one would expect for a buried population in such a site, and downplays the potential role of warfare in the Mesolithic; she calculates

that even at Talheim only a relatively small proportion of the individuals present had actually died as a direct result of violence directed towards them.

There are plenty of other instances of trauma on Mesolithic skeletons, which both she and Vencl (1991) have collected, including at least one individual at Vedbæk, Denmark (cf Cordier 1990; Thorpe 2003; Jackes 2004). There has also been discussion of conflict at the Mesolithic sites along the Iron Gates gorge in Serbia and Romania, notably at Schela Cladovei (Cook *et al.* 2002: 80 Fig. 2; Roksandic 2004). On the other hand, apart from projectile points there is little or no sign of weapons, so that the evidence of trauma has to be interpreted on its own, presumably as indicating violence between individuals; but we cannot tell on what scale.

In a Mesolithic context, then, the evidence for “war” is limited, ambiguous, and disputed. If conflict occurred, it must have been on a relatively small scale, involving individuals or groups of individuals who might have been linked by proximity either in residence or in kinship.

For the Neolithic too there is evidence of varying kinds, depending on time and place. Since the period lasted several thousand years, it would be unrealistic to expect a unified picture throughout it, or throughout the Old World. Much the most famous site is that of Talheim (Heilbronn, Baden-Württemberg), but especially in the Early Neolithic there are a number of other noteworthy examples. At Talheim, which was a Linearbandkeramik settlement, a pit contained the remains of at least 34 people of various ages and both sexes (Wahl – König 1987). Eighteen to twenty of the skulls bear the marks of fatal injuries: the back part of the skull had been struck by a number of blunt instruments, probably *Schuhleistenkeile* and other axes. In addition to this, three individuals seem to have been shot in the back by arrowheads as well. The find is invariably interpreted as the aftermath of a massacre, presumably of the inhabitants of the village, though this does presuppose that the village was completely sacked and it was the attackers who deposited the dead with such lack of reverence in a single mass grave.

Other Early Neolithic sites where there is evidence of violence include Schletz (Asparn an der Zaya, Austria), where a sizeable number of skeletons were haphazardly thrown into the enclosure ditch, most of them bearing traces of injury, for instance axe or macehead blows to the skull; Herxheim (Rheinland-Pfalz), with numerous skeletons in the enclosure ditch (Petrash 1999; Orschiedt *et al.* 2003); and Menneville (Aisne), with the skeletons of eleven children on the bottom of an LBK ditch (Farruggia *et al.* 1996). The Jungfernöhle cave at Tiefenellern near Bamberg contained a number of skeletons of Neolithic date,

many with evidence of traumatic injury (Kunkel 1955). Other instances are given by Vencl (1999), including the somewhat later cases of injuries sustained by Eneolithic groups. Other evidence has come from Mecklenburg, where the signs of “manipulation” on human skeletons from various grave types have been noted (Lidke – Piek 1999). Further east, there are examples in the Tripolye culture of skeletons with injuries, such as the mature man in a flat grave inside the settlement at Nevizko site 3 (Dolukhanov 1999: 82 Fig. 3).

The Neolithic sees the start of the construction of major earthworks and other monuments. Of interest here are the enclosures formed by banks and ditches, presumed to have a function that demarcated space, maybe also to keep animals or people in or out. While these are well known in the central and western European Neolithic, they also occur in Macedonia and other areas of eastern Europe (Lüning 1988; Höckmann 1990; Kokkinidou – Nikolaïdou 1999). From the western European Neolithic comes the remarkable evidence of causewayed enclosures, as known from Britain, Denmark and Germany. Interpretations of the Danish deposits have usually centred around settlements with ritual overtones, but in Britain there is intriguing evidence that at least some of the sites were attacked. This seems to have been the case at Hembury (Devon), Crickley Hill (Gloucestershire), Hambleton Hill (Dorset), and Carn Brea (Cornwall) – the latter somewhat different in form but of more or less the same date.

These sites have been the subject of particular study by Roger Mercer (1999 and elsewhere). All the sites produced abundant arrowheads in excavation, and all produced extensive evidence of destruction by burning. At Hambleton Hill (Mercer 1980), the enclosure proper was defended by a series of outworks cutting off the various spurs that led to the top of the hill, and in the case of one of these, the Stepleton spur, the defence work consisted of a timber-framed rampart, with two timber-lined entrances through it. At the end of its life this rampart was on fire for over 120 m of its length, with two male skeletons buried in the ditch fill in front of it, both with arrowheads in the chest or throat. Presumably the two events were connected; and given the frequency of arrowheads at Crickley and Carn Brea (over 800 at this latter site), one is almost certainly justified in reconstructing warlike attacks on these sites and probably the others as well. It is possible to imagine other scenarios, involving the ritual destruction of banks and houses, but realistically it is violent attack by enemy action that seems most plausible. Mercer is no doubt right to call this phenomenon “the origins of warfare in the British Isles” (Mercer 1999). Not all sites had such a history, however.

The spread of farming across Europe does of course raise the interesting and important question of whether it was primarily a matter of an introduction by new people, i.e. ‘colonisation’ by newly arrived farmers, or whether existing populations adopted new methods of subsistence production, i.e. ‘acculturation’, the shift towards a new mode of life by people who hitherto had relied almost entirely on hunting and gathering and who had a quite different world view from that of farmers. If the former, what can be said about interaction between indigenous hunter-gatherer communities, i.e. late Mesolithic people, and incoming farmers? Were there violent clashes between them, or was it largely a peaceful affair, with two sets of people living in essentially separate ecological niches until the transition was complete and everyone farmed? Some authorities have indeed detected what they interpret as conflict between the two groups. Keeley and Cahen have made a strong case for such conflict from the evidence of fortification and burning on Linearbandkeramik sites in Belgium, suggesting that the conflict was between incipient Neolithic groups and Final Mesolithic foragers, with perhaps a “no man’s land” or frontier zone between them (Keeley – Cahen 1989; Keeley 1996: 137–9; 1997). Ingenious though this is, it would carry more weight if the pattern could be seen to be replicated in other parts of the European continent.

There are plenty of other indications from various parts of Europe, at various stages of the Neolithic, that inter-personal and inter-group conflict occurred. Guilaine – Zammit (2005: 103 ff.) have considered the art of the Spanish Levant (cf. too Nash 2005). This art (Beltrán Martínez 1968), which appears on caves and rock shelters in the eastern part of Spain, is usually dated to the Mesolithic or Neolithic. It shows numerous scenes of multiple human figures carrying bows, sometimes engaged in hunting animals, but in other scenes confronting other groups of humans – interpreted as depictions of war in action. Some scenes, indeed, seem to depict the execution of individuals, though interpretations are speculative. In general, the art seems to provide convincing evidence that groups of archers (ten, twenty, or more on each side) engaged in hostile activity with each other; is this the visual equivalent of the archery battles that raged around causewayed enclosures? Are these the results of disputes over land as farming communities clashed with surviving hunters, or with each other as population increased and claims to land became more important?

During the Neolithic there is plenty of evidence for the use of the bow and arrow against the person. Maryvonne Naudet and Raymond Vidal (in Guilaine – Zammit 2005: 241 ff.) have provided a list of burials or skeletons with injuries emanating from arrow-shots, amounting to 51 cases with a further nine sites having

skeletal material with injuries caused by other types of weapon or implement; comparable sites are known from Spain. The sites cover the entire Neolithic, though the majority fall in the Middle and Late Neolithic. There are instances of such injuries in Britain and Scandinavia too (e.g. Gjerrild: Vandkilde 2003: 130 Plates 1–2), though they have not been tabulated so systematically. Schulting – Wysocki (2002) examined 350 crania from the British Early and Middle Neolithic and found that 26 of them had traumatic injuries resulting from blows from a blunt instrument, some unhealed, suggesting that they occurred at the time of death. This is true for a number of bones from Boles Barrow in south Wiltshire (Smith – Brickley 2007); for the two male skeletons in the ditch on the Stepleton Spur at Hambledon Hill, Dorset (Mercer 1999: 154–5 Fig. 4); for some of the bodies buried in the Wayland’s Smithy chambered tomb (news reports 12 March 2007), and for an adult male in the portal tomb at Poulnabrone, Co. Clare, who had the tip of an arrowhead embedded in his hip bone, while another adult from the same tomb had healed skull and rib fractures (Ulster Museum 2004: 6). Overall, the number of instances is impressive and suggests such personal violence was indeed a part of everyday life, though the context in which it occurred remains a matter for speculation.

The combined evidence for violence in the Neolithic of western Europe is impressive. The combination of skeletal trauma arising principally from arrowshot wounds, site fortification and destruction, in Britain accompanied by volleys of arrows, and the depiction of archers apparently in battle formation in the Spanish Levant, seems to bespeak a time and a social context in which developing population size and changing subsistence practices led to stress and conflict. The number of dead thus attested is not very large but it is significant; while the Spanish art would suggest that these skirmishes were conducted by groups of people, probably men, of some tens or scores. Such a picture fits in well with what we know of group size on the basis of settlement evidence in much of Europe (in central Europe groups must have been somewhat larger), and it seems not inappropriate to dub these practices the first ‘warfare’ in Europe (bearing in mind the definitions discussed in Chapter 2 above). It provides an intriguing backcloth to the consideration of subsequent developments in the Copper and Bronze Ages.

The rise of weaponry and the transformation of the hunter

Up until this point, I have been concerned with manifestations of warfare that are almost indistinguishable from activities such as hunting. While there is certainly evidence for inter-personal violence in the Neolithic, and indications in some parts of Europe (notably the north-west) that defensive measures were being taken on some sites, on the whole “war” was conducted with offensive weapons that were at the same time part of the hunter’s toolkit. With the advent of the Copper Age, things began to change.

The axe, tools, tool-weapons and weapon-tools

Among the objects whose meaning seems to have changed during the course of the Neolithic and Copper Age we may number the axe. The axe is a cutting or chopping tool, whose frequent appearance in ground or polished stone in the Neolithic is usually taken as an indication of its important function in forest clearance. While cutting down trees may well have been one of its functions, it was certainly not its only one. Large axes with stout hafts of wood or antler (as seen on some of the Swiss lake sites, e.g. Seeberg –Burgäschisee Süd (Müller-Beck 1965: 13 ff., Taf. 1–7) were probably used for tree-felling, but smaller implements, including the *Schuhleistenkeile* of the LBK area, would be better described as carpentry tools. Wood was the main building material of most areas of Europe in the Neolithic; only in a few places was stone the preferred material, either because it was readily available or because there was no suitable wood (e.g. Orkney; Cyprus). Wood was also used for many tools of everyday use, and for other items. All this would have required that the carpenter and joiner had available a range of tools for cutting, shaping, and jointing; and this means the axe, and variants on it such as the adze and the chisel. It has often been observed, however, that the axe is a widespread object in many periods of prehistory, both *in corpore* and in symbolic form (either as a depiction or as a non-utilitarian object, too slender or slight to be used for chopping, or made in prestige materials such as gold). This use of the axe, and especially the double-axe (Hawkes 1936–37), is extremely widespread in European prehistory, and finds further expression in more advanced periods of the metal ages, when massive axes, often with elaborate decoration, appear (below p. 79, 119).

If the standard Neolithic stone axe was pre-eminently a forestry and carpentry tool, at the other end of the spectrum the “battle-axe” was pre-eminently an

object destined for other purposes – a status object that probably originated from use as a weapon. John Chapman (1999) has charted the way in which this change occurred in the Balkan Neolithic. From beginnings as a functional object designed to accomplish specific purposes in daily life, tools such as axes could be transformed into something much more deadly. Chapman refers to their “symbolic richness”:

“The person using the Tool-Weapon for peaceful purposes will have been aware of its violent potential, and vice versa... The individual biography of a Tool-Weapon such as an axe may have included the killing of several enemies in a raid as well as the construction of a longhouse” (Chapman 1999: 108).

One can make a similar argument for other classes of artefact, e.g. daggers (below, p. 55).

The macehead and battle-axe are arguably logical developments of this pattern, representing the transformation of a tool, or a tool-weapon, into something whose primary purpose was not for everyday subsistence tasks, but for aggression. With the climax Copper Age societies (fifth-fourth millennia BC), objects that Chapman characterises as Weapon-Tools rather than Tool-Weapons become common – maceheads, battle-axes, arrowheads and (rarely) copper projectiles and daggers, as well as axes and axe-adzes (*ibid.*: 126 ff.). Chapman associates this development with social developments, as seen in cemeteries, and correlates it also with the rise of settlement defences, for instance in sites of the Cucuteni culture, on the rich black earths of Moldavia and Ukraine. Denser population networks are seen as bringing related people closer together, and unrelated people into more regular contact: hence the rise of more aggressive behaviour between groups.

Other weapons

Other implements in wood are also present on Neolithic sites. The rich assemblage at Seeberg-Burgäschisee Süd, for example, includes arrows, bows, points, and spears both held and thrown (cf Chapter 5) (Müller-Beck 1965: 74 ff Taf. 16–18 (arrows); 81 ff Taf. 20 (bows); 88 ff (points); 84 ff. Taf 20–21 Abb. 202–6 (spears – “Lanzen” and “Speere”)). It is far from sure that these terms actually describe the real function of the objects, or if they do, whether such artefacts were intended for anything other than the hunting of animals. They do, however, shed interesting light on the range of tools and weapons which were available

to Neolithic societies – and not only them – and which would otherwise not be apparent in the archaeological record.

Ötzi

This is not the place to enter into an extended discussion of the significance of Ötzi the Iceman, dated by AMS to 3350–3100 BC (Bonani *et al.* 1992; Prineth-Fornwanger – Niklaus 1995) and discovered in 1991 in a sheltered gully on the Hauslabjoch above the Ötztal in the South Tyrolean Alps (Spindler 1994). There are aspects of his location and his accoutrements, however, that are of interest to us in the context of prehistoric aggression. From the start it has been known that he carried a bow and a quiver of arrows, though the bow was unstrung and twelve of the fourteen arrows were unfinished and untipped. He also carried a flint knife-dagger with oak haft, kept in a knotted bast scabbard (Egg 1992). His death in such a location and his possessions have always suggested that he was the victim of violence, and that some form of group aggression had taken place in the neighbourhood (e.g. Spindler 1994: 250 ff.). He belongs in the Copper Age, at just the time when Weapon-Tools had become dominant, as discussed above.

It was discovered in 2001 that Ötzi had been shot in the back by an arrow, the head of which is lodged in his left shoulder (Gostner – Egarter Vigl 2002; Gostner – Egarter Vigl – Reinstadler 2004, 94 ff.). While this was no doubt excruciatingly painful, opinions differ as to whether the bleeding from the wound might have caused his death. It appears that he had managed to pull the arrowshaft out of his body, leaving the arrowhead behind, since other wooden objects survive in the permanently snow-bound conditions that pertain at this height and no arrowshaft was found in the body. He also had a deep wound on his right hand between thumb and forefinger, reaching down to the bone of the second phalange; forensic scientists see this as a typical defence wound. Since the edges of the wound are jagged, and there are traces of blood on it, it must have been inflicted not long before his death. The chemical changes in the blood, however, showed that this must have occurred not less than a day before death, presumably in hand-to-hand combat with an opponent. He had a compression fracture on his right maxillary cavity (temple and cheek), that would have caused intense pain. Some of the other bone defects that are evident may have been caused by the pressure of ice on the body after his death, while healed damage between the seventh and eighth left ribs might have resulted from a fall.

DNA analysis of microscopic material on one of his arrowheads and his dagger, and on the goatskin cloak, has apparently shown that the blood of no less than four individuals is represented on them (Discovery Channel, August-September 2003, and other news reports). This can only mean that the arrow had been used and extracted again twice from its target, and that the dagger can be used in fighting. It has been suggested that the blood on the cloak shows that Ötzi had helped to carry an injured companion, though of course it is equally possible that it came from a person with whom he was fighting hand to hand.

The bow and arrows, the arrowhead wound, and the DNA evidence show that Ötzi was equipped to shoot both animals and other humans, and to be shot at. Taking his possessions in the round, however, it is hard to see him primarily as a warrior. Most judgements have been that he was a shepherd and/or a farmer, though it seems unlikely that he was a typical one, to judge from the possessions he was carrying around with him. It has been suggested that he was the victim of ritual fighting, but there is no specific evidence for it, and one might expect a more efficient mode of despatch if the intention was to kill the man in a place where people could witness his death. Later bog bodies, for which the evidence of ritual killing is good, were typically garrotted or had their throats cut prior to being pushed into the bogs where they were found.

Ötzi's cultural context: warfare in Copper Age Europe

The date of the Hauslabjoch body, in the later centuries of the fourth millennium BC, makes it contemporary with a number of cultural groups around the Alps, including the Mondsee and Baden cultures in Austria, the Horgen in Switzerland, Cham and Altheim in Bavaria, Ljubljana Moor in Slovenia, and others (Prinoth-Fornwanger – Niklaus 1995: 83 ff.). In Italy, the early part of the Copper Age Remedello Culture should overlap this time period (de Marinis – Pedrotti 1997: 286 ff.), and it is significant that a number of items of material culture of this group parallel those found with Ötzi. Most of these cultures are known principally from settlement sites, though Remedello is an exception.

The Remedello culture is known mainly from graves, as at the type-site near Brescia (Müller-Karpe 1974: III/2, 902 no. 266; III/3, Taf. 439–440). Similarities between grave-goods there and the Iceman's equipment have been noted; material further north also shows parallels. What is of interest is the fact that the Remedello graves also contain flint daggers and arrowheads, as well (in some cases) as copper axes not dissimilar to that carried by the Iceman (id.: Taf.

439, 7; 440, A1–3). In the light of what we now know about the Iceman and his fate, it is easier to understand and interpret these finds. While the axes may have been genuinely intended as carpentry tools, the daggers and arrowheads were presumably intended for fighting. A new analysis of the Remedello cemetery makes clear that such equipment was a regular accompaniment in death for a number of the individuals buried (de Marinis – Pedrotti 1997). All the indications are that they were part of a “proto-warrior” equipage, where certain individuals acquired the ability to obtain and use objects for inter-personal conflict.

These Copper Age graves in north Italy and Austria (for instance the Mondsee culture: Müller-Karpe 1974: III/2, 922 no. 399; III/3, Taf. 474) provide an interesting backdrop to the cultural manifestation that was typical of about half of continental Europe during the third millennium, the Corded Ware. The earliest C14 dates for Corded Ware fall around 3000 cal BC, though the majority fall in the first half of the third millennium, with a continuation rather later in some areas (Becker *et al.* 1985; Włodarczak 2001; Dresely – Müller 2001). Corded Ware settlement sites are well known from the Swiss lakes, and less extensively elsewhere, but the really typical assemblage is the inhumation grave with its corded beaker-like pot and battle-axe. The discussion of the axe (above) stressed the symbolic aspect to this object; the battle-axes of the Corded Ware are so called because they are almost never sharpened for use, indeed they are completely blunt and could never have cut or cleaved wood. They are almost invariably in pristine condition and can only have been used to hit soft objects (including human skulls?) or as parade material, perhaps intended to indicate status or perhaps merely symbolic. Several observers have reflected that the battle-axe indicates a “personified, privileged social position and status in connection with strong symbolism but little practical use” (Heyd 2004: 197), or indeed a warrior elite.

The appearance of the battle-axe as a regular accompaniment to burial in this and related cultural groups marks a significant shift in the treatment of the axe, comparable with the shift from Tool-Weapon to Weapon-Tool. Yet it is not a simple shift from one form to another, as for example from Weapon-Tool to Weapon, for these objects never served as tools in the form in which they appear in Corded Ware graves. Instead, they are metaphors, they *represent* the status which might come from prowess with an axe in conflict. So the transformation is a double one: not merely to Weapon, but to symbolic weapon. This arguably represents a step change in the treatment both of the artefacts of war, and of the person who possessed, wielded, and was buried with them.

Statue-stelae

Nor are such artefacts the only form in which the treatment of the human body occurs at this time. It is not so long after the time of Ötzi that we come across unequivocal evidence of incipient warriorhood. This takes the form of large-scale, often full-size, depictions of people bearing arms and is found on the monumental stelae that were erected in a number of parts of Europe, but especially in a triangle between southern France, the Rhône valley in Switzerland, and north Italy, notably the Italian riviera around La Spezia or the Alto Adige near Bolzano (Arnal 1976; D'Anna 1977; Ambrosi 1988; Zidda 1997; cf Guilaine – Zammit 2005: 173 ff.). The stelae at the site of Le Petit Chasseur at Sion (Valais) are among the best-known images of the age (Bocksberger 1978, Pl. 18–20). Carved from sandstone slabs, some are entirely abstract in nature but others are highly stylised versions of humans. The body is covered with lozenge patterns that probably represent a patterned or dyed textile; a bow is slung across the chest; in some instances arrows are shown or a dagger is suspended at the waist. There are marked regional differences between the areas where the stelae appear; for instance, in north Italy bows do not appear but curious L-shaped objects (interpreted as hafted battle-axes) do.

The interpretation of these stelae, and their significance for an understanding of Copper Age aggression, is controversial. Do they represent specific individuals, as it were representations of them as heroes as they may have been in life? Or are they generic warrior figures, erected at or near the site of a specific burial or other significant spot, to indicate to the passing world how important it is to bear weapons and engage in activities that utilised them – whether applied against animals or against humans? Perhaps they represent all of these things; they commemorate the glorious dead and remind the living of their ancestors, perhaps specific named people who would be recalled by the statues; and they impose on the successors the need to emulate the ancestors through the glory of bearing arms and engaging in valiant acts. What surely seems to be represented is an individual person bearing arms, who can plausibly be called the warrior, in what one might call a triumphalist pose; and since the number of known examples is relatively restricted it suggests that very specific individuals are being depicted. The emphasis placed here on the individual recalls the similar emphasis to be found in burials of the Beaker cultures (cf below); this is widely seen as representing a move from the importance of the group to the importance of the individual, perhaps through prowess in battle.

The Beaker phenomenon

The Beaker phenomenon that was manifest in so many areas of western and central Europe was remarkable in many ways, but for an understanding of early warfare it is the presence of weaponry that concerns us most. Much has been written about the makers and users of Beakers, including discussion of where the Beaker pot itself originated, how the idea spread across so much of Europe, and whether “Beaker people” (if they ever existed in such a form) were the first metallurgists in the areas they inhabited. Less attention has been paid to the fact that people buried with Beakers were often accompanied by weapons, and arguably therefore the first group of people in Europe who can be unequivocally identified as warriors; and that they lent their distinctive practices to much of what was to follow in the Early Bronze Age.

Many Beaker graves contained no more than a Beaker pot, and in all likelihood there are many other graves containing nothing at all, or nothing diagnostic, in tumuli, cists, and flat graves that do in fact belong to the Beaker period. This is certainly the case in Britain, where catalogues of barrows in southern England (e.g. Grinsell 1957, 1959) show that quite large numbers of graves contained no grave-goods or nothing beyond a few flint or bone objects, yet can with all plausibility be assigned to the makers and users of Beaker pots. This makes it difficult to know how unusual or otherwise Beaker graves with daggers are. On the other hand, arrowheads (in Britain typically barbed and tanged) are commonly found in Beaker graves, and although the bows that have been found in Britain are earlier (Clark 1963; Mercer 1999) it must have been the case that bows were standard equipment for large numbers of people.

Understanding the use of the bow in the Beaker period is an important issue. Just as in the preceding centuries, one might suppose that bows and arrows were primarily hunting implements, and this was no doubt one of their principal functions. There is, however, important evidence which shows us that it was not the only function. Among these are the young man in the middle ditch fill at Stonehenge with an arrowhead lodged in his rib, and other arrowheads close by; he was buried with a rather simple perforated “wrist-guard” which indicates his Beaker date (Evans *et al* 1983). This is probably one of a number of cases where the presence of arrowheads with a body is not an indication of grave-goods (a quiverful of arrows buried with the deceased) but the cause of death; another is the instance of a Beaker burial in the central grave in Ring Ditch 201 at Barrow Hills, Radley, where a male individual had an arrowhead in the area of the ribcage

(Barclay – Halpin 1999: 136 ff, Fig. 4.77). Only where the arrowhead is lodged in the bone, as opposed to the soft tissue, is there sufficient support for an indication of death. In the case of the Stonehenge individual, it would appear that he had been shot in the trunk, one or more times, then tumbled into the half-filled ditch, after which his body became incorporated in further infill. It is impossible to know if this was an isolated act or what he was doing prior to his death, but in view of the special nature of the site it seems most likely that his death and (non-)burial on the perimeter of Stonehenge was no accident; he was a kind of Copper Age St Sebastian.

More recently, the case of the “Amesbury Archer” has shed new light on the matter (Fitzpatrick 2003). This individual, at present the richest Beaker-user known in Britain (and possibly in Europe), possessed fifteen fine barbed and tanged arrowheads in addition to his other rich range of material, including three copper knife-daggers and two bracers or wristguards. The individual had an injury to his knee which means he would have limped; it is impossible to tell whether this was a war wound. It is further of interest that this man was an immigrant to Britain from the Continent, perhaps Central Europe, and the copper of his knife-daggers may also indicate a continental origin; but this too may have no bearing on his warlike accoutrements. The Amesbury Archer was merely one end of a grave-good spectrum that went from little or nothing to the full range seen in his grave.

How did the users of Beaker pottery use their weapons? Clearly as archers in the first instance, since arrowheads are such a common accompaniment to their burials; but it seems unlikely that archery alone would have assigned to an individual the prestige that would mark him out from the rest of the pack. The evidence from monumental constructions (e.g. Stonehenge) could also mean that the size of groups undertaking aggressive actions against neighbours were also much larger than they had been previously. What seems most likely is that when skirmishes occurred, they began (and maybe often ended) with a volley of arrows, at least some of which hit their targets. A massed volley of this sort, delivered by the sort of long bow that appears in Beaker contexts (Clark 1963; Sheridan 1992), might well have been difficult to avoid, especially if the recipients were standing shoulder to shoulder in some numbers.

Some Beaker owners had daggers, so there was an expectation that the exchange of arrows might be followed by a move in close, and hand-to-hand fighting. But the number of functional daggers seems very small compared with the number of arrowheads, and probably many people did not possess a dagger,

particularly a copper one, which would have been hard to come by at this early stage of metal-using. An object such as a dagger might in fact have been primarily created to be a knife, since its sharp edge or edges could have cut materials other than human flesh. It is no coincidence that the term “knife-dagger” is often used to indicate this dichotomy (e.g. Gerloff 1975: 159 ff.).

The presence of daggers in some graves is usually taken to indicate a reinforcement of the concept of the warrior elite, even though cemetery material on its own cannot be regarded as a true reflection of social organisation in the Beaker period (Heyd 2004: 203 ff.). In much of Europe social groups were still small, yet individuals were thinking big; and, given the extent of interest in huge monuments, able to coalesce for higher purposes when custom or ritual dictated.

Conclusions: from hunter to warrior

Hunting animals and hunting people seem to us very different activities, but in origin they may not have been as different as it might appear. Hunting can be regarded as a prestige activity, especially when the quarry is particularly fierce or fast, or especially large or well-endowed (with antlers, horns, or tusks). Indeed, there are plenty of examples in world literature of high status people reinforcing that status through skill, cunning and strength in tracking and killing particularly stubborn or dangerous prey.

As tools turned into weapons, population increased, settlements became more numerous and more complex, and the social order changed. It is not possible to specify the exact time and place where the “hunting” of people became standard practice, as opposed to something done when need or custom dictated; but the emergence of individual warriors equipped with objects, or depicted on statues, that glorify their individuality and warriorhood seems to lie in the centuries around and following 3000 cal BC, and to have developed throughout the third millennium cal BC. Yet though the society from which the warriors came was capable of coming together to create monumental constructions that made enormous demands on personpower, there is still no indication that when it came to fighting such warriors fought in more than very small groups. It is in the following millennium that matters changed out of all recognition; and it is to that millennium that we now turn.

Chapter 4. Early warriors

Daggers and dagger graves

When we leave the Beaker phenomenon, and move onwards to the early parts of the Bronze Age proper, we reach the point at which I shall argue that warfare became truly endemic in European societies. The full Early Bronze Age in Europe had a number of characteristics which the Beaker period did not. Among these may be numbered the developments in metallurgy which led to the almost ubiquitous use of tin-bronze; the increasingly common practice of differentiating buried persons through the provision of a growing range of grave-goods; and a far greater range of manufactured goods, usually found in hoards or graves, than was the case in the preceding period.

In many parts of Europe, the form of burials was gender-dependent. These so-called ‘sex-differentiated burials’ are found especially in parts of central Europe (southern Germany, Bohemia, Austria), but less rigid versions are probably present in many other areas too (in some of them the available information about age and sex is poor, so that no judgement can be made about the relationship between these factors and grave rite). Where the information on age and sex is good, and systematic publication of cemeteries has taken place, it becomes possible to investigate the ways in which goods were differentially provided. The hope is that by this means it may be possible to identify particular classes or roles within the societies that buried the people in the cemeteries.

In an Early Bronze Age context, however, this is more a hope than a reality, for the range of grave goods, while larger than in the Beaker period, is still small in most cases – and certainly it is small in those cemeteries where a substantial level of analysis has taken place. Such work, as I have discussed elsewhere (Harding 2000: 395 ff.), has inexplicably been neglected, even by those scholars who seek to understand how social division developed. I have previously drawn attention to the cemeteries of the Mierzanowice culture in south-east Poland, which are large and well-studied, and show how a very small number of individuals acquired a large amount of wealth as expressed in ‘points’ or in raw material categories. In the case of Iwanowice (Babia Góra cemetery: Kadrow – Machnikowie 1992), some 60% of all graves had no grave-goods at all, and only 2% were ‘rich’. A comparable story can be told for most of the other inhumation cemeteries of central Europe.

Comparable cemeteries in Slovakia belong to the Nitra culture, where a series of large sites have been excavated in recent years. In the cemetery of Nižna Myšľa, for instance, over 450 graves had been excavated by 1992 (Olexa 1992), while that at Mýtna Nová Ves contained 550 graves, five of which were distinguished by what the excavator considered to be exceptional wealth (Bátora 1990; Jakab 1999). According to Július Jakab, the biological anthropologist who studied the human bones from the cemetery, these five graves contained young men (age *Adultus I*, i.e. approx. 18–25 years old) of robust build with strong or medium-strong musculature (Jakab 1999). The graves were undisturbed, with no sign of secondary movement of the bones; but on four of the skeletons there were unhealed fractures and on the fifth an area of bone decomposition which may result from infection. These injuries are attributed to war wounds, which, if it is the case, sheds interesting light on how those killed in fighting were treated. By contrast, in the large cemetery of the Aunjetitz culture at Grossbrembach, Kr. Sömmerda (Thuringia), very few injuries were noted (Ullrich 1972: 29 ff.).

Härde has also studied this material, and provided a lengthy list of Early Bronze Age burials in central Europe with evidence for trauma that might indicate wounding during fighting, or of abnormal deposition of the dead (2005, 2006). This applies not only to graves of the Nitra culture in south-west Slovakia, but also to graves from a variety of cultural groups (Härde 2006: 374–6, Fig. 21).

In a barrow at Memleben in Sachsen-Anhalt, within sight of the supposed find-spot of the Nebra sky-disc, a burial chamber lined with sandstone slabs contained a male skeleton, his upper body and legs missing. According to the preliminary reports on the find, he was accompanied by a bronze knife and pin, and a series of other bodies, including three children, lay in a circle around him; the skulls were “deformed” and violent death was assumed since the trauma indicated blows with a blunt instrument.²

This type of pathological damage seen on skeletal material is quite different from the specific treatment of the dead that is seen in some Bronze Age contexts, for instance the creation of “packages” of bone and secondary burial, seen in the Catacomb Grave area; also the “modelling” (application of clay and ochre) of the skull, as is most usually known from Preceramic Jericho (Kaiser 2003).

² According to news agencies reports, quoting Olaf Schroeder, Landesamt für Archäologie, Halle. The date is given as “4200 years old”, which would suggest that the site belonged to the beginning of the Early Bronze Age; but clearly more information is needed before any conclusions can be drawn.

A discussion of warfare, however, needs to be able to identify people, or groups of people, who might have taken part in fighting, and this is usually taken to mean people buried with weapons. Here we are at a disadvantage, at least as far as central Europe is concerned, since weapons are rarely deposited in the larger inhumation cemeteries. For instance, there are only eight daggers from the 258 graves at Gemeinlebarn F, excavated in 1973–81 (Neugebauer 1991: 16 ff.); of them, Grave 7 seems especially rich (id.: 136–7 Taf. 1). The cemetery at Branč in south-western Slovakia (Vladár 1973) produced only four copper daggers in the 237 graves of the Nitra culture excavated (part was destroyed or not investigated) (*Fig. 1*); this is in very marked contrast to the evident signs that certain people were able to accumulate significant amounts of ‘wealth’ in the form of artefacts, whether of copper, shell or faience (by contrast, 115 willow-leaf-shaped copper earrings occurred in the graves). Eleven small copper daggers (or knife-daggers) occurred in the 161 graves of the Koštiány culture at the Nižné Kapustníky site south of Košice in eastern Slovakia, compared with 31 willow-leaf ornaments (Pástor 1969). By contrast, no daggers at all were found in the contemporary cemeteries of the Mierzanowice culture at Iwanowice-Babia Góra and Szarbia site 9 (Kielce), even though other items of the Nitra-Mierzanowice assemblage were present, such as faience beads and willow-leaf ornaments (Kadrow – Machnikowie 1992; Baczyńska 1994).

Härde’s study of these Nitra culture cemeteries, considering both their weaponry (and other grave-goods), the incidence of skeletal trauma, and the evidence for social and economic status, concludes that warfare was “a key element in the maintenance of control over the flow of prestige goods as well as in expansion – the acquisition of new resources” (2005: 88; 2006³). He suggests that the Nitra culture might provide evidence for the emergence of a “warring elite”, and that the graves indicate the existence of “hunter-warriors”, marked out by their rich grave-goods consisting of weapons, tools and ornaments; archery equipment (arrowheads) are the most common, with daggers, axes and knives also being present; their control of the flow of prestige goods allowed them “to distinguish themselves by adopting new rites and customs” (Härde 2005: 95), and specifically that there was a trend towards the adoption of daggers by a warring elite, where previously hunting equipment (bows and arrows, boars tusks) were the signs of distinction. In addition, the signs of skeletal trauma on a number of Nitra culture individuals speaks for a period of aggression – though interestingly,

³ The later article is an expanded version of the earlier.

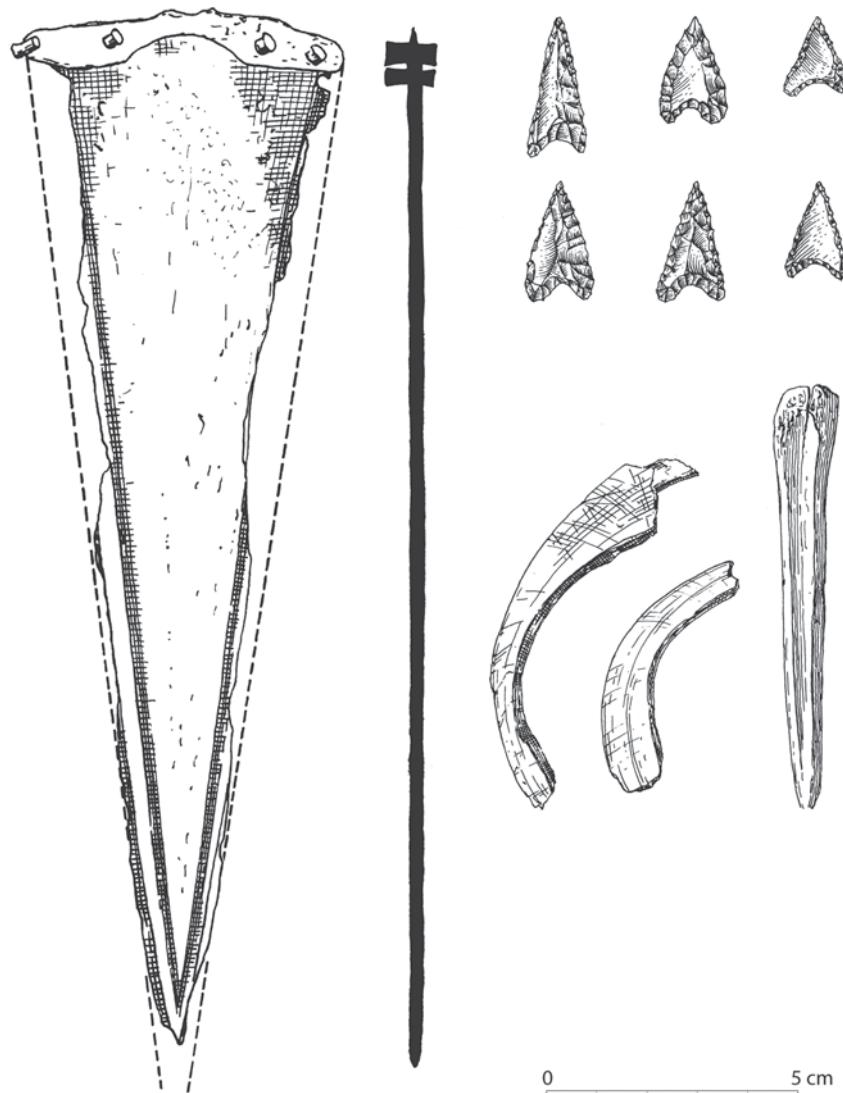


Fig. 1. A dagger grave of the Nitra culture: Branč (Slovakia) grave 182.

Source: VLADÁR 1973.

the age of those who suffered in this way varied from site to site. Hárde in fact is able to distinguish two types of site: those where there are numerous weapons, and a larger number of individuals who suffered fatal violence; and those with fewer weapons and a high number of individuals with trauma that did not kill them. He suggests then that Mýtna Nová Ves is an example of the former and

Branč of the latter. What is more, arrowheads are the commonest type of weapon, so aggressive activities were probably conducted mainly at a distance; those unfortunates who suffered blunt force trauma were those who actually came into close contact with an enemy and came off worst. Härde's views fit in well with the pattern of development I suggested above for the Copper Age, with the hunting of animals as a prestige activity giving way to the hunting of people – in other words, inter-personal violence or aggression in a much more formalised way than was previously the case.

These large cemeteries (and there are many more comparable examples) suggest that ownership of, or access to, a dagger was something restricted to a minority of people. Given the size of the daggers in question, this does not automatically mean that they were warriors, however, since the objects seem too small for effective use in hand-to-hand fighting and could perhaps have served better as knives.

An exception is the cemetery at Singen (Konstanz), partially recovered in excavations mainly in the 1950s (Krause 1988). Ninety-five graves were excavated here, exhibiting clustering in four main groups. Six of the eight graves identified biologically as male possessed daggers; two female graves also possessed daggers. This may be compared with the results from a typical cemetery of the Únětice culture at Těšetice-Vinohrady (Lorencová *et al.* 1987), where daggers occurred in three out of twelve male burials, one out of fifteen female burials, and – strikingly – five out of eighteen child burials (Fig. 2). Whatever was happening in these cemeteries, it was not a simple matter of providing males with daggers, females with ornaments, and children with toys. This raises interesting questions about whether or not we are dealing with the graves of 'warriors'.

In Britain and France, where there are good published catalogues (Gerloff 1975; Gallay 1981; cf Needham 2000b), it is clear that in many cases daggers accompanied high-status burials, and though these are best known from Brittany this is by no means the only area where they occur. While 'Breton' daggers (i.e. tanged or riveted, with organic hilt) are mainly restricted to Brittany (Gallay 1981: Taf. 45A for distribution), the solid-hilted varieties (*Vollgriffdolche*) occur much more widely, notably along the Rhône (Gallay 1981: Taf. 44B; Schwenzer 2004: 69 ff. Abb. 46).

The rich graves of the Early Bronze Age in southern England – the "Wessex culture" (Piggott 1938, 1973; Gerloff 1975) – and Brittany (Cogné – Giot 1951; Briard 1984; Needham 2000b) may serve as a counterbalance to these instances. Unfortunately there is no modern complete and systematic catalogue of

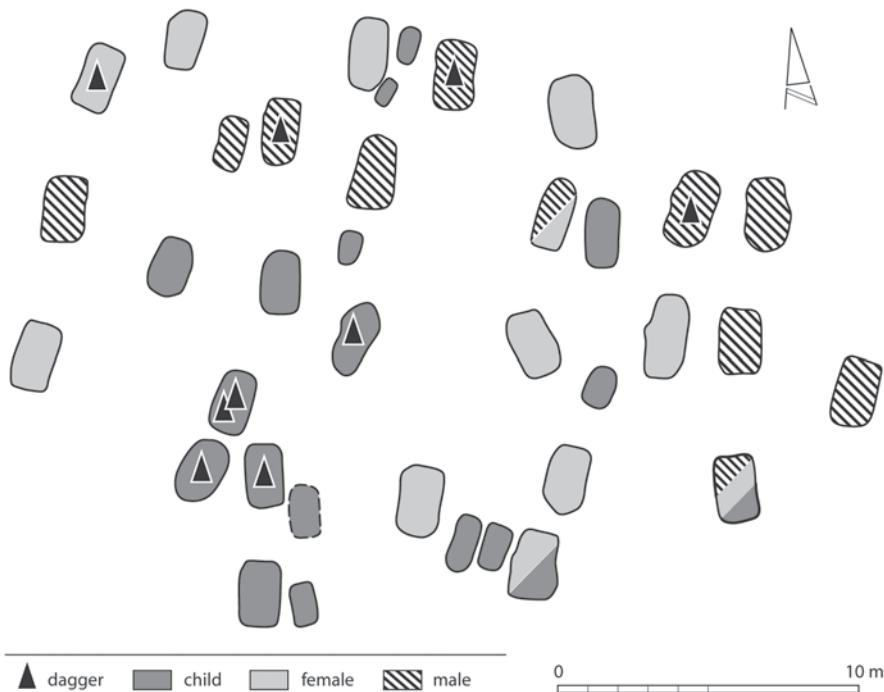


Fig. 2. Plan of the *Únětice* culture cemetery at Těšetice-Kyjovice (Moravia), showing male, female and children's graves, and those containing daggers.

Source: LORENCOVÁ et al. 1987.

these graves, nor any general agreement about which graves should be considered to fall into the sphere of the Wessex culture. Piggott's view that certain classes of artefact were indicative of a type of burial accoutrement that belongs to this grouping, thus distinguishing 97 graves in the central southern counties of England (mainly Hampshire, Wiltshire and Dorset, with a few in Sussex and Somerset), is tenable only if one ignores the extent to which dagger burial is actually far more widespread than this, while objects of amber can occur as far north as the Orkney Islands and faience widely across Britain. He realised that many graves that potentially belonged to the same period could not be specifically attributed to the group because there were either no goods or the goods were unspecific. In a consideration of the Oakley Down cemetery (Dorset), it has been pointed out that typical "Wessex culture" material occurred in only nine of thirty barrows (Harding 2000: 91), although it would be perfectly plausible to suppose that the entire cemetery, which includes typical Wessex barrow forms such as disc barrows, belonged to the same period. Those nine barrows contained, among

other things, four daggers; four daggers out of several dozen burials is not a large proportion.

It is unfortunately impossible to gauge the extent of dagger burial in Britain by merely considering the catalogue which Gerloff produced (1975), for the simple reason that we have no idea how many graves of the period there were. Even for a seemingly well-studied area such as Wessex, the task is rendered unviable by virtue of the fact that Early Bronze Age burial was usually under a barrow; many barrows have been opened without adequate (or any) record; and many graves in barrows that have been recorded contained no grave-goods. Consequently one cannot compare the total number of graves with the total number of daggers. It would appear that relatively few people were so provided; Gerloff's catalogue contains in total around 350 metal daggers, but only about 130 are sizeable pieces, the rest being flat and wide tanged copper blades, usually associated with Beaker pottery; small triangular pieces under 8 cm long ('knife-daggers'); or small triangular daggers under 15 cm long (e.g. Gerloff's types Butterwick and Masterton). Even allowing for the discovery of new finds in recent years (for instance at Lockington: Needham 2000a) the total number of daggers worthy of the name is really small, especially when compared with the potential number of graves (probably several thousand).

In spite of this, some people, and not only those in Wessex, were furnished with daggers in their graves. Dagger burial is by no means restricted to the Wessex area, or to 'rich' burials, though it is true that many of the richer burials contained daggers. It is noteworthy, for instance, that there are significant numbers of dagger graves in Scotland, where they may be made especially exotic by the provision of gold pommel mounts, as at Skateraw, Dunbar (East Lothian) and Collessie (Fife) (Gerloff 1975: 60 nos. 83–84). Even a burial is so (relatively) remote a place as Blackwaterfoot on the island of Arran produced a splendid bronze dagger with ribbed gold pommel mount, the finds coming from a very large cairn that contained stone cists (Gerloff 1975: 134 no. 227; Clarke *et al.* 1985: 113 Fig. 4.40, 284–5).

The recently excavated and extensively published hoard of metalwork from Lockington, Leicestershire, is a remarkable find, for several reasons: the dagger was associated with two ribbed gold armlets; the metalwork came from a pit on the edge of a barrow, not from a grave within it; and the dagger is of a long variety identified as a Breton import ('Quimperlé type') that is argued to predate the Wessex 1 phase (Bush Barrow) (Needham 2000a). This is further argued to be part of a wider series of connections between Brittany and southern England that may relate

to the socially constructed personae of the high-status individuals whose graves are marked by rich artefacts in the Early Bronze Age (Needham 2000b).

Solid-hilted daggers (*Vollgriffdolche*)

Most Bronze Age daggers were joined to the handle by means of rivets at the butt end; the hilt-plates extended down over the butt and were held in place at that point. A specialised dagger form was developed during the Early Bronze Age, however: that with a cast metal handle, which was fastened to the blade by 'overcasting' (German *Überfangguss*), in the same way as later solid-hilted swords were treated. These daggers are remarkable for their fine finish and technical perfection. They have long been the subject of special attention, but a new study has illuminated their form and distribution with unparalleled clarity (Uenze 1938; Schwenzer 2004). Around 320 daggers belong to this class, distributed from south Scandinavia to central Italy, and from the Rhône valley to central Poland, with outliers in all directions beyond those limits. There are particular concentrations in parts of Germany (especially eastern Germany), Poland, and north and central Italy. Sixty-five are single finds, 79 come from 18 pure dagger hoards and a further 59 from mixed hoards; 33 are from graves, and a few come from settlements. The remainder (about 80) are from unknown contexts.

Scholars have long known that a number of distinct types can be distinguished in this material; these tend to cluster round particular production areas. So the Malchin type is found almost exclusively in north-east Germany, the Oder-Elbe type in north-central Germany (with an outlying group represented by a recent find from Ingolstadt in Bavaria), the Rhône type in southern France and northern Italy, and the Italian type in central Italy, notably the hoard from Ripatransone (Ascoli Piceno, Marche) with its nineteen solid-hilted daggers and six socketed grip daggers (*Fig. 3*). Other types are more widely scattered: the Alpine type, for example, has outliers extending from Hungary in the East to Poland in the North, while the Baltic-Po type is distributed right across Europe from the Po valley to Mecklenburg (Schwenzer 2004).

The significance of this special form deserves particular consideration. That they were not 'normal' grave finds is evident from the fact that a distinct minority occurred in graves, with many more coming from hoards (distributing the daggers with unknown find circumstances in the same proportions to hoards and graves would add only another eleven grave finds, as opposed to 46 hoard finds); furthermore, most of the graves come from two areas: the western Alps

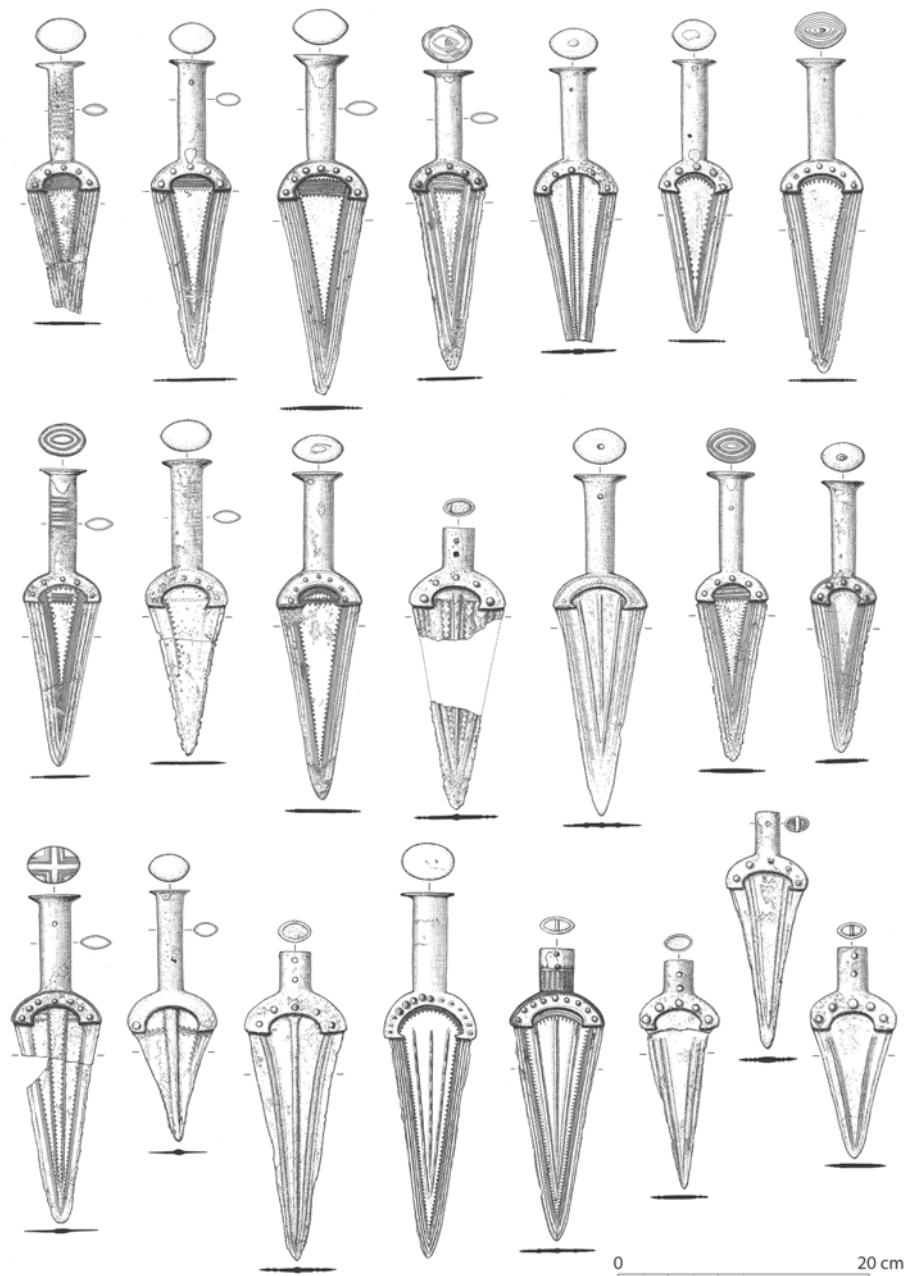


Fig. 3. The Ripatransone hoard of Vollgriffdolche. Source: SCHWENZER 2004.

in Switzerland, and western Poland, with only a thin scatter elsewhere (Fig. 4). In Switzerland a strong case has been argued that they occur in rich male graves and indicate status more than functionality (Hafner 1995). Depictions of what appear to be such daggers on the rock art of Monte Bego, and on the statuette-stelae of northern Italy, suggest a strong association with important people. On the other hand, the frequent occurrence in hoards suggests that there was a special symbolism associated with the form; one that did not depend on personal ownership, at least at the end of the dagger's life. The Ripatransone hoard is a remarkable case in point, especially as central Italy was not an area where hoards normally occurred this early in the Bronze Age. It, and other such finds, provide a strong indication that the solid-hilted dagger was an object of particular importance, as distinct from the commoner and more mundane tanged or riveted dagger as long daggers were distinct from short daggers.

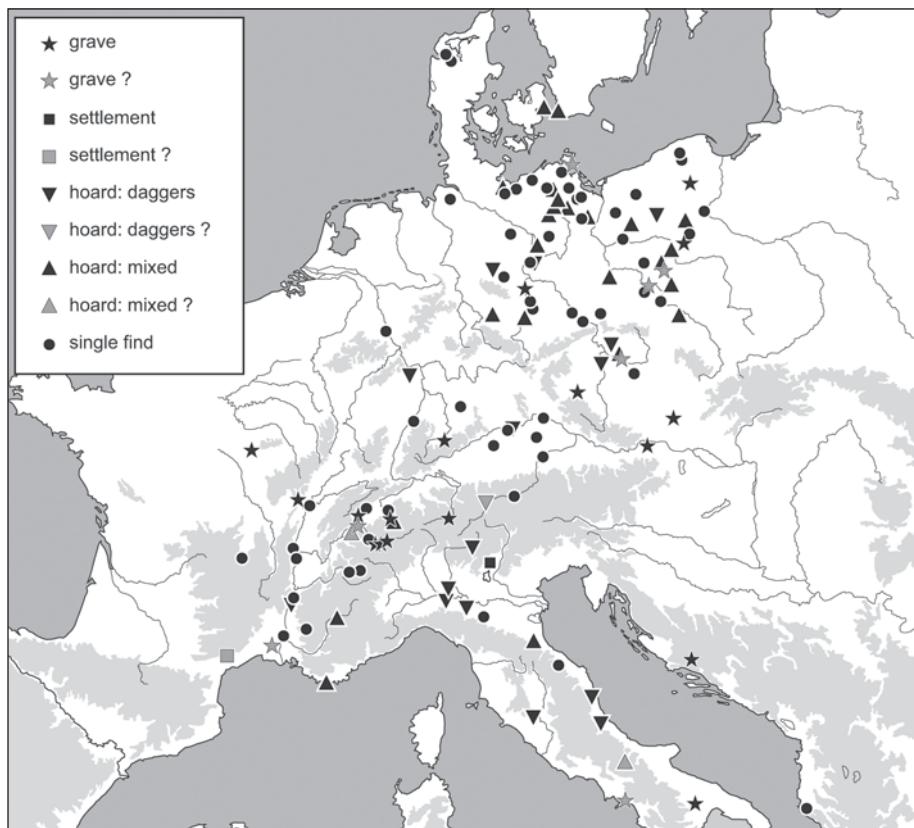


Fig. 4. The distribution of Vollgriffdolche by context. Source: SCHWENZER 2004.

This importance is underlined by the technical qualities that went into a solid-hilted dagger. They represent a specific and new method of casting, in one or two pieces over a clay core, and with the use of tin-alloyed bronze present in some groups (Schwenzer 2004). The form probably originated in the South (western Switzerland and/or Italy), at the junction between the early and developed Early Bronze Age around 2000 BC, and continued until late in the Early Bronze Age. The technology can be seen on the earliest swords, of Apa-Hajdúsámos type, which must overlap with them in date.

Why were *Vollgriffdolche* not adopted throughout central and western Europe? Perhaps this was for the same reasons that later on *Vollgriffschwerter* were also somewhat restricted in distribution – though this is hardly a satisfactory explanation, since the technical knowledge was clearly present in the British Isles to produce such objects had the desire been there. The answer to such questions must presumably lie in the cultural sphere; some groups found it important and relevant to produce such weapons, while others did not.

Halberds

The practice of mounting a blade at right-angles to its handle, known – perhaps misleadingly – as the halberd, began life around at the beginning of the Early Bronze Age and lasted for a considerable time, perhaps 400 years. Much attention has been devoted in recent years to the precise chronological position of these objects (Needham 1996: 130; 2004: 231–4; Schwenzer 2002; Schuhmacher 2002; Brandherm 2004); rather less to their unusual form and their function. Both Schuhmacher and Needham have argued for an origin of the form in the western Beaker metalwork complex, with Schuhmacher suggesting that Britain and Ireland saw the earliest examples (as indeed did Ó Ríordáin in 1937); the date being some time in the 24th century BC. From there the form spread to many parts of western and central Europe, with the latest examples lying after 2000 BC. By 1900/1850 BC the type seems to have gone out of use, except perhaps for a few regional hybrid forms, notably in Iberia, where they were a feature of Argaric Culture graves down to this point, and then appeared in variant forms for several centuries more.

The function and efficacy of these implements, and their potential role in Early Bronze Age fighting, has aroused frequent controversy (in most depth: Lenerz-de Wilde 1991; the basic questions posed by Harbison 1969: 35). On the one hand they are solid and often quite large, a blow from which would

certainly be felt. On the other, it has seemed to many that they would be clumsy at delivering any kind of killer blow on an adversary, and it is easy to understand the objection: the warrior would be using his weapon like an axe, bringing the point down on to its target in a chopping blow. The unprotected head receiving a direct hit delivered with force might receive severe bruising, and conceivably bone damage such as a depressed fracture. An opponent wearing head protection, however, might get away with no more than bruising; and in any case it might have been difficult to deliver a fatal blow in this manner against an opponent determined to avoid it.

Experiments by Ronan O'Flaherty (2007), using a replica halberd against a static object (animal heads placed on the ground) have shown that hefty blows could be struck in this manner, though the situation might be quite different if the recipient was engaged either in evasive action or in attempted retaliation. The weapon was able to deliver precise blows that penetrated the skull either at the first blow or sometimes the second or third, with little or no damage to the blade or hafting; the rounded end was considered to have been a benefit since a sharp point might have caused bending or snapping when struck against a hard surface; it is suggested it might have been more use against soft tissues or muscle.

But in general the form has seemed to most people so curious, so unwieldy, that alternative functions have been proposed. "Was it a weapon, an implement or a ceremonial object?" (Harbison 1969: 35). Why did dead warriors always take a dagger and not a halberd to the grave with them? (Of course there are exceptions to this rule, though it is true for Britain and Ireland.) Why are halberd blades rarely worn or damaged? (and to this – especially in Ireland.) Why are halberds shown so clearly on the rock carvings of north Italy – because they represented part of ritual fighting?

It has been emphasised by Lenerz-de Wilde (1991: 44 ff.) that the deposition context of halberds differed in the different regions (and periods) in which they appear, and that therefore one can suppose they had a different role in each region. Thus in Ireland and Britain few halberds are contextualised at all – Harbison quotes twelve out of 150 as having certain associations; most are single finds or have no known find context at all. In France nineteen of the 45 halberds are single finds, while a dozen more come from rivers, river banks, or moors (Gallay 1981: 128–9). In Scandinavia the 26 halberds are all single finds, with a concentration of these on boggy land (Lenerz-de Wilde 1991: 36). In Germany, by contrast, most of the best-known pieces come from hoards, such as those from Dieskau, Neunheiligen, Melz, Bresinchen and Groß Schwechten (von Brunn 1959; Wüstemann 1995:

70–91), or in Poland from Granowo (Sarnowska 1969: 171–75). A handful of the central European pieces come from graves, notably those from Leubingen and from Łęki Małe Kurhan I grave A (Kowiańska-Piaszykowa – Kurnatowski 1953/54, 57–8 Fig. 12,12; Sarnowska 1969: 181–8; Gedl 1980: 33–37); and it is striking that these are very high profile graves, in very large barrows with very rich grave assemblages (Fig. 5). Those from Hungary and adjacent areas are all stray finds – though their appearance so far east is in itself remarkable (Kovács 1992, 1995, 1996).

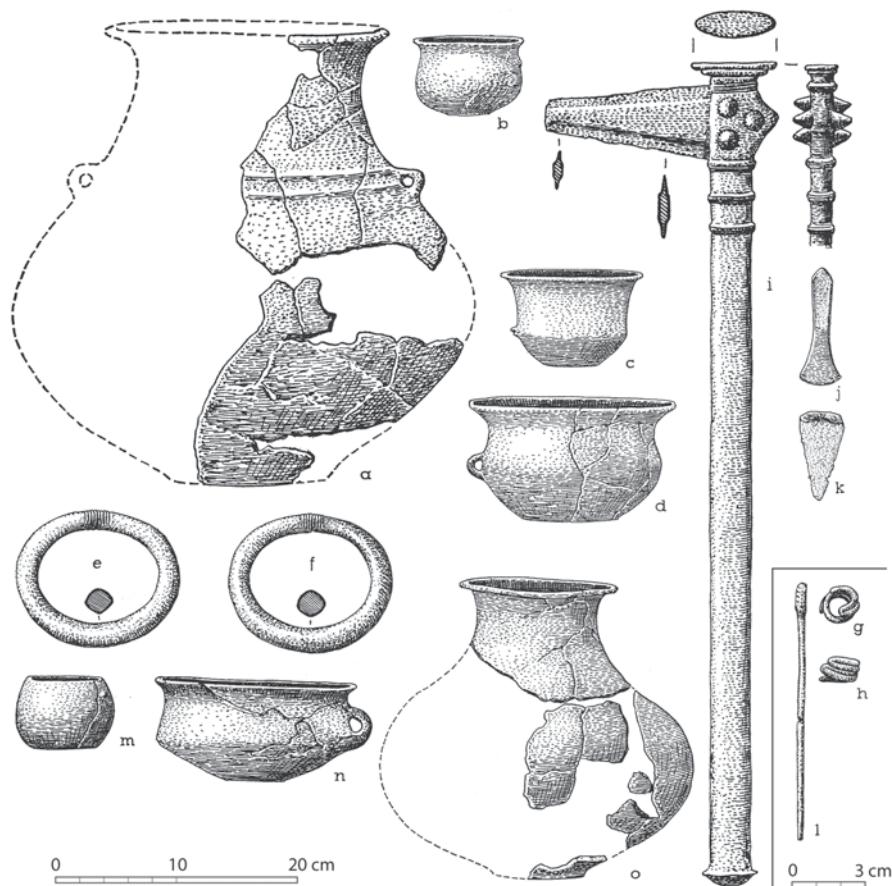


Fig. 5. The grave goods from Łęki Małe Kurhan I grave A, including a metal-hafted halberd. Source: KOWIAŃSKA-PIASZYKOWA – KURNATOWSKI 1953/54.

The rock carvings of Italy and France (Val Camonica and Monte Bego), perhaps too of Sweden, show a number of cases of what appear to be halberds, in some cases held in the upraised hands of a warrior. As with other occurrences of weapons on rock art, it is hard to be sure whether the objects depicted are indeed halberds, are really associated with their bearers, and are being used for fighting as opposed to some kind of ritual display.

Halberd blades were mounted on a long shaft, which was usually of wood; a surviving wooden shaft is that from Carn, Co. Mayo, said to have been 3' 6" (1.07 m) long (Raftery 1942; Harbison 1969: 39 ff. Fig. 4B). A special variant, however, was hafted in metal, formed round a wooden interior or core (as seen notably at Melz in Mecklenburg: Schoknecht 1971/72). These metal-hafted examples show us that the pieces with organic hilts, such as that from Carn, and the metal-hafted pieces would have looked very similar. Wüstemann (1995) argues that the wooden-hafted pieces were real weapons, not least because they have signs of sharpening and reworking in the form of extra rivet-holes, added to strengthen or repair a weakened or broken joint in antiquity. This is in contrast to the metal-hafted pieces which are usually perfect and unused, and thus interpreted as having a ritual function, or possibly were intended more for display than practical use. In this, they would join a group of other items that arguably can have been of no real service to those fighting in earnest (cf below p. 118). They may have been heavier, too, and less easy to manipulate.

It seems clear that some halberds, particularly metal-hafted ones, were regarded as having particular worth or status. The blade of a piece from Årup in Scania is partly gilded (Lenerz-de Wilde 1991: 36–7 Abb. 13); while some blades are exceptionally large, recalling the five massive display dirks of Plougescant-Ommerschans type (Greenwell 1902; Butler – Bakker 1961; Briard 1965: 91–4, 103 Fig. 28; Butler – Sarfatij 1971; Clarke *et al.* 1985: 97 Fig. 4.22; 318–9 Fig. 7.35; Needham 1990; Fontijn 2001). The halberd from the hoard at Ried in the Tyrol is 41.5 cm long (Lenerz-de Wilde 1991: 35–6 Abb. 10), for example; the daggers from Ommerschans, Plougescant, Oxborough and Jutphaas are respectively 68.3, 66.5, 70.9 and 42.3 cm long (the latter apparently a reduced version of the Ommerschans piece). Oversized weapons are also found in other repertoires, notably rapiers, axes and spearheads (below, p. 120).

The miniature halberds (halberd pendants) with gold bands round a haft of amber in three Wessex graves clearly copy the north European metal-hafted pieces, as Piggott pointed out long ago (1938: 85), and suggest that they were regarded as important enough in real life to be worth imitating as toys or trinkets

(Gerloff 1975: 201, 222–3), perhaps as a means of appropriating status.⁴ Their position in the graves at Hengistbury Head, Wilsford G.8 and Preshute G.1a (Manton) is a very curious phenomenon, and forms part of the set of artefacts that links Wessex to the Continent in the Early Bronze Age (like the complex-bored amber spacer-plates, perforated spherical-head pins, and daggers). The question of why such halberds should have been imitated in miniature form in Wessex and nowhere else (as far as we know) is a difficult one. Is it merely a matter of chance that such objects survive only here, or does it indicate a special relationship of some kind – imitation being a form of flattery and therefore emulation? If the occupants of these rich Wessex graves were as upwardly mobile as has sometimes been suggested, then this kind of imitation of the material goods of the supremely wealthy in distant lands to the East may have been the sincerest form of flattery – a means of encapsulating the warriorhood of local chiefs by copying those in far-off places known through travellers' tales to be at the top of the European tree.

Metal-hafted halberds may have been unusual at the time, as they are in the archaeological record today; their presence in apparently high-status graves such as Łęki Małe or Leubingen may indicate a particular role in marking out important individuals. Most commentators have in fact seen a distinction between the two different halberd forms and the three (or more) deposition types, suggesting that these differences reflect different intentions and thus different functions. In the absence of further experimental work or analysis of wear patterns it is not currently possible to take this further.

Whatever the situation may turn out to be, the halberd had a lifetime of several centuries, appearing early in the Early Bronze Age and lasting until the time of the emergence of the Armorico-British dagger series around 2000 BC (Needham 2000a: 43). Indeed, Needham attributes the appearance of the stout midrib on later Early Bronze Age daggers to adaptation from the halberd. Maybe as one such implement started to go out of use, another took its place – albeit one used in a very different way. While it is no longer true that its appearance was a flash in the pan, it is also true that it did not outlast the Early Bronze Age. It is now impossible to say whether or not it represented a serious weapon that was discontinued because of its lack of effectiveness, or was never more than an experimental affair. While the latter explanation seems unlikely, given the number and extensive distribution of the objects, implying that smiths and wielders alike

⁴ I thank Richard O'Neill for this suggestion.

thought them a good idea, it seems hard to envisage them as a primary mark of the Early Bronze Age warrior.

Conclusion: the early warrior

With the move to incorporate daggers as a regular accompaniment of certain members of society in the Early Bronze Age, the transformation of the hunter that began in the Copper Age was complete. So complete, in fact, that it seems legitimate to speak now of a manifestly different phenomenon: the rise of the warrior. The near-ubiquitous presence of dagger-graves across Europe indicates how important such a mode of behaviour had become, whether or not the practice of engaging in close combat was actually as frequent as the daggers might suggest. The elaboration of various dagger forms, such as the solid-hilted types, or those with elaborately ornamented hilts, provide further indications that the possession of such objects was a mark of distinction, related to more than mere functionality.

The extent to which one can trace this warrior identity back into the Beaker period is not easy to assess. Beaker graves could certainly contain daggers, though arrows were commoner; and the daggers were typically of relatively thin copper, which might not have survived prolonged or heavy use. In the centuries that followed, two trends became apparent: on the one hand, the production of much stouter blades, both by virtue of the provision of a midrib and through the use of tin-bronze; on the other, a desire in some cases to adorn the weapon with special hilt or with blade decoration. Both speak for a trend to warrior status on the part of the user. This was a time of profound change in European societies, and the move to warriorhood is one of the most visible and important such changes.

Chapter 5.

The development of arms and armour after the Early Bronze Age

The largest category of evidence by which we can judge the incidence and type of warfare or conflict in Bronze Age Europe is that of weapons, offensive and defensive. The role of the bow and arrow, and of daggers in the Early Bronze Age, have been considered above. With the passage of time, and the development of bronze technology in the Middle Bronze Age – and more especially in the Late Bronze Age – a specialised set of weapons was created. Chief among these were the spear and the sword; the continuing incidence of arrowheads shows that the bow and arrow continued to be important; while armour, in the form of shields, helmets, corslets and greaves, is first known from an early part of the Urnfield period in continental Europe (wooden shields were somewhat earlier in Ireland). Of these, the most frequently occurring forms are the sword and the spearhead, and it is therefore from these that most information might be expected to be gathered. Other, rarer, forms of offensive weapon may have included the battle-axe (a Leitmotif of the Copper Age, of course, but still important in the Bronze Age; cf above, p. 50); the dagger (less common once the sword had come into use); and perhaps archaeologically invisible objects such as clubs of wood.⁵ All this reflects the fact that if the object of the exercise is to kill or wound someone, it is necessary to use sharp or pointed objects to sever or damage vital organs, including the circulation system; or to exert blunt force to fracture bone in places which will cause maximum discomfort or disorientation (including death, if the skull is fractured or the thoracic vertebrae severed), so that an opponent is neutralised and made vulnerable.

The development of the sword

If for present purposes we take length as the overriding criterion for distinguishing a multi-purpose fighting weapon (“sword”) from a short (< 30 cm) two-edged blade suitable mainly for stabbing an enemy or an animal at close quarters (“dagger”), then the transition can be placed in central Europe around 1700 BC;

⁵ There are rare examples of wooden swords: STEVENSON 1957–58 on a piece from Orkney, made of yew wood.

in Britain and the Nordic area a little later. A recent article on the same theme covers much of the same ground, tracing the origin of the sword back to its Near Eastern roots (Schulz 2004–5).

To judge from appearances, the transition from dagger to sword proceeded rapidly but differentially in different areas.⁶ The first swords appear in central Europe in the later stages of the Early Bronze Age, in the shape of the solid-hilted swords of Apa type (KEMENCZEI 1991: 8 ff.; BADER 1991: 37 ff.). The place of origin both of the weapons and of the ornament on them has been much discussed (HACHMANN 1957: 90 ff.; LOMBORG 1960: 69 ff.; Kovács 1994), mainly because of the elaborate ornament that appears on them, and the analogies which it suggests. The famous pieces from Apa, Hajdúsámon and Zajta (Fig. 6) have elaborately decorated blades, typically with spiral-related designs that have attracted much attention because of their apparent similarity to Aegean decorative syntax. The topic has a strong bearing on dating issues. The Apa-Hajdúsámon horizon has usually been seen as contemporary with the Shaft Graves of Mycenae by virtue of these designs, and since it is normally placed parallel to Bz A2 in southern Germany, a significant cross-dating fixed point is derived. More recently Wolfgang David has argued that the horizon is actually parallel to Bz B1 (DAVID 2002). The stylistic analysis undertaken by David has shown that the Carpathian Basin designs on bone and antler objects are truly close to those of the Shaft Graves, and a synchronisation can hardly be doubted.⁷ Absolute dates are still hard to come by in the absence of a systematic programme of radiocarbon dating on key sites in central and east-central Europe, while the controversy over the date of the eruption of Thera also renders dates derived from cross-dating uncertain. If the eruption took place near 1625 BC, as several indicators suggest, the late Middle Bronze Age of Crete (MM IIIB) could hardly be placed later than

⁶ A number of authors have charted the development of the bladed weapon for cutting and stabbing from the dagger to the sword; and for swords a large and well-published corpus of data exists, highly suitable for comparative study. The *Prähistorische Bronzefunde* series has published 15 volumes on swords, all except one on Europe. There are also major publications for areas not covered by the series, notably the Nordic area (SPROCKHOFF 1931, 1934; admittedly out of date, but easily supplemented by series such as ANER – KERSTEN 1973–2003) and Ireland (EOGAN 1965). The volume for Iberia is forthcoming, but for France it is still necessary to use a variety of older sources.

⁷ David has rightly criticised my own earlier scepticism on these points: DAVID 1997: esp. p. 273; cf HARDING 1984: 198 ff.

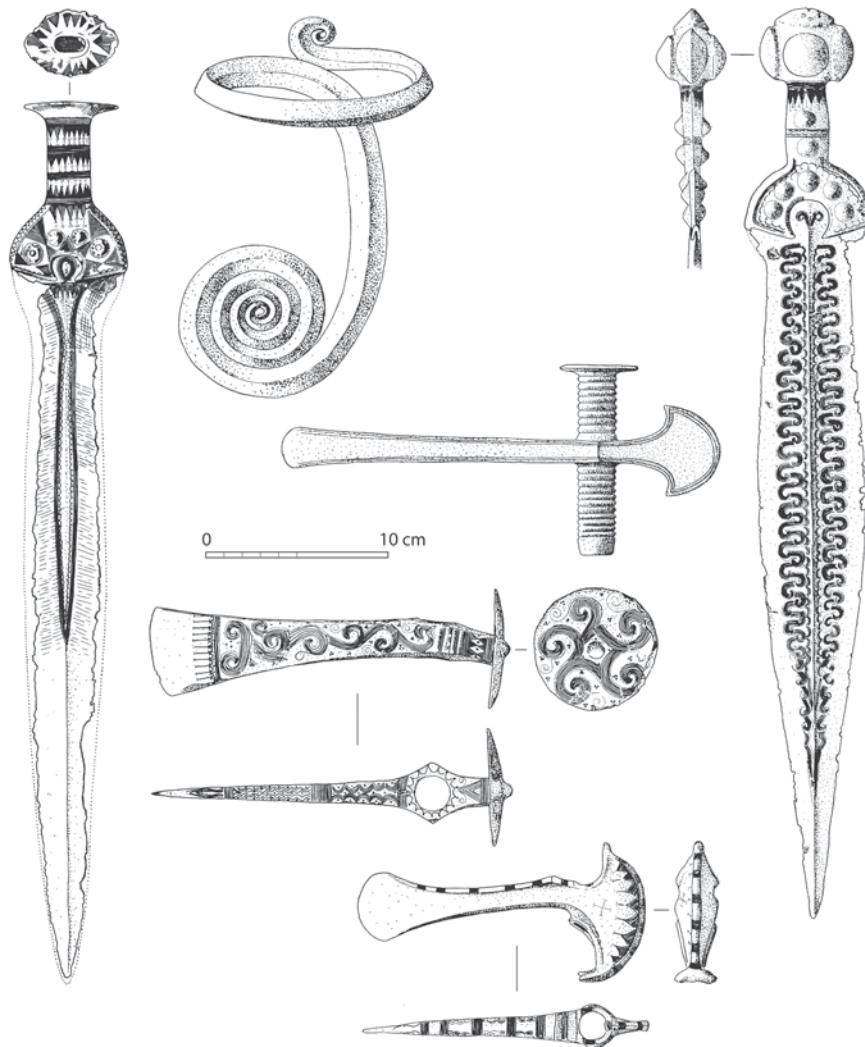


Fig. 6. The Apa hoard, Romania. Source: HACHMANN 1957.

1700 BC; which is close to the date at present likely for the transition from Bz A2 to B1 (including A2/B1).

However, all this tells us is that such swords came into existence in the centuries between around 1800 and 1600 BC, since it seems that Bz A2 was a long period, the divisions of which cannot so far be more precisely dated. This means that these early swords came into existence at a time very similar to that of the first Aegean swords – not just the long rapier-like weapons of Karo's type A, which

on Crete go back into the Middle Bronze Age and are most prominent in the Shaft Graves of Mycenae, but also the first horned and cruciform swords of Sandars' types C and D (Sandars 1961, 1963; Kilian-Dirlmeier 1993: 26 ff). Of course consideration of similarities between Aegean and European weapons should not be restricted to form and date, but also to function, even though the information on this is often contradictory and hard to interpret (Kilian-Dirlmeier 1993: 130 ff.; Peatfield 1999).

At more or less the same time, remarkable weapons appear in graves in southern Spain, for instance at El Argar and comparable sites, where blade lengths are usually in excess of 50 cm and sometimes over 60 cm (in one case even 70 cm) (Brandherm 2003: 361–3, Taf. 89–92; his types AE 14 and 15). The nearest analogies to these elsewhere appear to be the blades of Rumédon type found in Series 1 graves in Brittany (Gallay 1981: 93–5). This was something of a flash in the pan, however, as standardised swords did not make a regular appearance for several centuries after that.

During the course of the Middle Bronze Age, it is possible to observe longer weapons becoming more common, with long weapons that may be called true swords being present by Bz C1. Typical Tumulus Culture burials contained short blades with rhomboidal heel that may be called dirks or (if a little longer) rapiers or short swords. Realistically it is not important what one calls them (there is no consensus over what is appropriate); what matters is how they were hafted and how they were used. In theory each of these words has a specific meaning; in practice they overlap, in terms of size (length) and method of use (stabbing, slashing, cutting). The size threshold between daggers and swords is usually placed somewhere around 30 cm, but in fact matters are rather more complicated than this: what is important is the length of the whole weapon, hilt included, and most daggers and short swords only survive as blades, with a rivet arrangement in the heel for attaching a hilt. A weapon whose overall length is as long as 40 cm would not normally be called a dagger but a short sword; and it could have been used to deliver cutting as well as stabbing blows (which is not to say that it *was* so used).

The standard catalogues (e.g. Schauer 1971a; Burgess – Gerloff 1981) give a good idea of how the weapons developed, and though details can still be discussed it is quite clear that generally weapons increased in length through the course of the Middle Bronze Age. With the start of the period in central Europe, longer weapons, relatively narrow in proportion to their length, become common. In the Lochham phase (Bz B/B1) blades are normally no longer than 30 cm; in

the Göggenhofen phase (Bz C1) the range 30–50 cm is common; while in the Asenkofen phase (Bz C2) full-length rapiers and swords reaching 60, 70 or even 80 cm in length occur. Some of these pieces look like elongated daggers, which is probably how they arose (for instance Schauer's (1971a: 38 ff.) Gamprin and related types, the length typically 40–50 cm). Others are long and narrow, without shoulders or widening heel, and in English would usually be called rapiers (e.g. Schauer's Mägerkingen, Grossengstingen and related types, typically 55–70 cm long).

In the British Isles, short weapons with rounded or straight-ended butt were characteristic of the first part of the Acton Park stage, with trapezoidal butted pieces coming in later in that stage and continuing through into the Taunton phase (Burgess – Gerloff (1981) Groups I and II); though it is notable that some of the Group I pieces are actually rather long. Group III pieces, which are characteristic of the Taunton phase, are invariably over 30 cm long, which is not the case with Groups I and II; while Group IV rapiers, occurring in Taunton and Penard contexts, vary in length but are also mostly over 30 cm long – sometimes much longer.

Length was not the only criterion; the method of attaching the hilt was equally important, and thus the shape of the blade butt provides a relatively sensitive indicator of change over time. Thus the change from a rounded or straight end to a trapezoidal one characterised the early stages of the Middle Bronze Age, with two or four rivet-holes being pierced in the butt; at the beginning of the Urnfield period (Bz D) several new forms occurred, including the curious Rixheim and similar types with narrow rounded butt, and the even stranger *Griffangelschwerter* with tang-like projection that was pushed into an organic handle, usually without the addition of any rivets at all. But these developments were as nothing compared to the creation of the swords with integral hilt, whether made entirely of metal (*Vollgriffschwert*) or having a tongue-like hilt with side flanges that was cast in one with the blade and shoulders, the hilt plates being of organic materials (*Griffzungenschwert*).

The further technological development of interest and importance is that the method of fastening the grip (hilt) to the blade had to change. Daggers in the Early Bronze Age were usually fastened to their hilts by rivets, and the grips were made of organic material such as wood or bone (though an important category had metal grips – *Vollgriftdolche*). For a short weapon used exclusively for stabbing, or for short sharp cuts at close quarters, such an arrangement was probably satisfactory for most of the time. As the blade lengthened, however, the lateral

pressure exerted on the hilt fastening by a slashing blow increased significantly. Not surprisingly, many longer weapons with rivet attachment have broken rivet holes or heel snapped off, as the force of use in combat caused unsustainable pressure on the attachment. A warrior could not be left with a broken and unusable weapon if he was to survive; so a new attachment method had to be devised. The answer was to cast the hilt as one with the blade, or to “cast over” a bronze hilt over the top of the blade (in the *Überfangguss* technique, which provided a rugged attachment that would not readily sever). Interestingly, schematic rivet-heads were usually shown on the base of the solid hilt, even though there were no real rivets; presumably the smith or the warrior wanted the finished product to continue to look as though it was fastened in the traditional manner, retaining a “retro” look perhaps.

The sword with integral blade and hilt, as opposed to that with riveted heel for grip attachment, is thus first seen in the late Early Bronze Age in central Europe, at a period which lies at the transition to, or even within, the earliest part of the Middle Bronze Age, around 1700 BC. These earliest weapons were hilted in solid bronze; but during the ensuing centuries an alternative was developed, where weapons were provided with flanges along the side of the hilt to hold in place grip plates of organic material (wood or bone, in some prestige Aegean examples ivory). These two categories of weapon may have had different functions (below, p. 109); but by around 1500 BC the fully fledged sword with effectively functioning grip was in circulation. Its subsequent history has been considered by many authorities and need not be described here, beyond saying that the blade tended to expand both in width (becoming “leaf-shaped”) and in length, while the hilt remained much the same. For this reason, to most modern hands these grips tend to feel unduly short, and the balance of the sword uneven. Many authorities have noticed this effect, which Bridgford has been able to describe mathematically (1997). An exception is Kristiansen (2002: 320 ff.), who claims that he finds Late Bronze Age swords ideally balanced and is fond of demonstrating the effect with a small cardboard sword pattern. I have also handled many Bronze Age swords, and although I do not have large hands I find the grip too short for comfort, and as a consequence the balance of the sword difficult to manage as the centre of gravity is too far down the weapon for easy handling. Presumably Bronze Age swordsmen did not feel the same, or they would have modified the design – unless, of course, they were concerned with matters other than effectiveness in fighting an enemy. Alternatively, they simply got used to the short grip.

The only decisive answers to these questions will come from trying them out, and here we can be grateful to Barry Molloy (forthcoming), who has experimented with a series of different swords (below, p. 108).

Spearheads

The Bronze Age warrior also possessed another important weapon, the spear, but the relationship between spears and swords is uncertain. Not every sword grave contains a spear; many graves with spears contain no sword; some contain both, and depictions on rock art appear to show instances of one or the other, or both.

Spearheads, taken as a whole, are very common in Bronze Age Europe; their numbers run into many thousands (the Isleham hoard alone contained around 430 (Britton 1960; Burgess – Colquhoun 1988: 42). The study of them has daunted many; as a result, few *Prähistorische Bronzefunde* volumes are available. The study by Jacob-Friesen (1967) provided a basic typology and catalogue for northern Europe. A catalogue for Switzerland and adjoining areas, numbering around 1000 entries, has been produced by Tarot (2000). Richard Davis (2006) has studied some 470 basal-looped spearheads from the Middle Bronze Age of Britain and Ireland, even leaving aside the other types of the same date (e.g. end-looped); 239 javelin and spearheads are listed by Říhovský (1996) for Moravia. Shorter contributions have covered the Tréboul type (as known from a piece from the Rhine at Mainz: Hansen 1990), and those from the Thames (Ehrenberg 1977); they are discussed in many other general works dealing with Bronze Age metalwork.

Like swords, spearheads can show very variable amounts of damage, though in this case it is less clear what might have caused it. Broken tips would normally be the obvious type of damage resulting from a spear hitting a hard object; it is perhaps unlikely that a spear would break merely by being thrust into a human body, though if it became embedded in bone this is conceivable. It is more likely that tip damage would occur if the spear hit a wooden shield or stones on the ground, having missed its target. Edge damage to a spear is harder to explain. Perhaps parrying blows with spear shaft or sword could be responsible, but considerable force is needed even in ideal conditions to break pieces off a bronze object.

The form and development of the spearhead is intimately connected with the way in which it was used, and this has long been a controversial matter. In essence, spears were either thrown like a javelin (lance), or held firm and thrust

when an opponent was at close quarters; and it is hard to distinguish between the two usages merely from the form of archaeological finds. In general it is supposed that smaller spearheads belonged to thrown javelins and larger ones to long held spears. A spear held firm in this manner might be supposed to be more use in combating a charging enemy, either running or on horseback; but evidence for riding horses (as opposed to using them for traction, i.e. pulling vehicles) is not found until the first millennium BC and then usually in the Near East. The notion of cavalry charges is completely foreign to the European Bronze Age, if the absence of evidence (e.g. depictions) is taken to be a fair judge; and horse equipment only becomes common well into the first millennium BC.

A thrown Bronze Age spear might be expected to travel no more than a few tens of metres, perhaps as little as 20–30 m (experimental reconstructions are needed to verify this). Even a relatively short flight time might have given an opponent the opportunity to get out of the way, though it would always be possible that someone would get hit if a band of fighters were close together; and if many spears were launched at one time the chances of hitting would be increased. At all events, spears did sometimes find their targets, as damage on shields and, on occasion, trauma on human skeletons, show (e.g. the finds from Over Vindinge (Svaerdborg, Denmark), Tormarton (Gloucestershire), Hernadkák grave 122, Klings (Thuringia) and other sites: Osgood 2000b: 21–2 Fig. 2.7; 73–6 Figs 4.2–4.3, with references). Maybe the spearhead was intended to separate from its shaft on impact, harpoon-like; this would mean that even if the shaft was pulled out the head would remain in the body and cause serious wounding, as well as encumbering the recipient (cf Bartlett – Hawkes 1965).

In Ireland, basal-looped spearheads show considerable wear, though many others show no damage at all (Bourke 2001: 114). Furthermore, their carefully executed cast decoration suggests that they may have had a purpose as display weapons as well as for combat, and the same is true for many weapons of the Nordic area (Jacob-Friesen 1967: *passim*).

Axes

The axe as used for fighting (“battle-axe”) was, by the time of the full Bronze Age, not a particularly important weapon – in contrast to the situation in the Neolithic and Copper Age (above, p. 50). It is certainly true that the symbolic importance of the axe, particularly the double-axe, continued unabated in some contexts, notably in Crete and perhaps elsewhere; hence the finding of clearly

non-functional stone battle-axes in various Early Bronze Age graves, for instance the Wessex culture grave at Hove, Sussex (Clarke *et al.* 1985: 117 Fig. 4.45; 277). Roe (1966) has provided a full discussion of these objects.

In the Carpathian Basin, *Nackenscheibenäxte* (disc-butted axes), while not normally very large, are usually highly decorated with swirling spiraliform designs (*Fig. 6*) (Mozsolics 1967; David 2002) and are plausibly seen as status objects not intended for the mundane tasks of chopping and carpentry. It is indeed this function that may be reconstructed for many, perhaps most, appearances of the axe in military contexts in the Bronze Age. Butler has discussed prestige axes that are either especially large or were imported from other areas and have no obvious utilitarian function (Butler 1998); massive axes occur on Scandinavian rock art and *in corpore* in Nordic lands (Kaul 2001) (cf p. 119).

Armour

Defensive weaponry is, in comparison to offensive, scarce. Thanks to a series of studies (originally by v. Merhart and others, more recently by P. Schauer, C. Clausing and S. Hansen), good recent statistics are available about most of these categories of evidence (v. Merhart 1940; 1954; 1956–7; Schauer 1978; 1980; 1982a; 1982b; 1988 etc; Clausing 2001; 2002; Born – Hansen 2001). Clausing's recent study (2002) of the cord-attached greaves ("geschnürte Beinschienen"), for instance, lists 76 greaves from 51 findspots in Europe, 22 of them not surprisingly being pairs found together; it is perhaps more surprising that some finds, including those where the find circumstances are well known and the standard of excavation satisfactory or high, occurred singly. His studies of the one-piece helmets list some 68 pieces (a few of them Iron Age in date) (Clausing 2001; cf v. Merhart 1940; Hencken 1971; Egg 1986; Egg – Tomedi 2002). Shields, which occur in leather and wood as well as bronze, number around 90 from Europe (Coles 1962; Patay 1968; Bukowski 1971; Needham 1979; Schauer 1980; Hansen 2001: 80 ff.; the most recent reviews: Uckelmann 2004–5; 2005 on the 22 shields of Herzsprung type).

Cuirasses or body armour occur in only a few instances, and not all of them are properly contextualised. The very earliest appears to be those from graves in Slovakia dating to a time equivalent to Bz D (Paulík 1968; Snodgrass 1971); but the best preserved and most famous examples come from much later in the Bronze Age (v. Merhart 1954). The numbers of all these items are tiny compared with those for swords or spearheads. In fact it is not the numbers of pieces of armour

that is important; it is their very existence and what they tell us about how fighting was conducted.

There has been much debate about the functionality of this armour, a matter to which I return below (p. 121). The shields in particular have been the subject of experimental studies. Uckelmann (2005: 178–9) confirms that the metal of at least the Herzsprung shields is too thin to have been properly functional at warding off blows, nor are there any signs of leather backing which might have provided additional protection. There are no signs of damage from fighting (as there are on some other shield types), though repairs are known and there are signs of wear – which suggests they were used in some manner, and not made simply to be put in the ground. Whether this consisted of being paraded about, and perhaps engaging in the odd mock fight, remains to be clarified. On the other hand, certain shields of Nipperwiese type do show the signs of damage from pointed implements, probably spears (Long Wittenham, Oxfordshire: Needham 1979: 113–4 Fig. 2; Uckelmann 2004–5: 244 ff. Abb. 1).

There are few depictions of warriors wearing armour or carrying shields, but among them the figurines of Sardinia are notable (Lilliu 1966; Badisches Landesmuseum 1980; full study: Stary 1991). Horned helmets on the head, round shields on the back, greaves, tunic-like corslet on the torso, sometimes a kilt made of scale segments, and with swords slung across the chest and spearheads or bows carried over the shoulder: the pieces offer an intriguing view of how in Sardinia at least the warrior appeared (*Fig. 7*). There can be no guarantee that this was how warriors elsewhere in Europe wore their armour or carried their weaponry, but this was one way in which it was done. The figurines are hard to date but belong to the later Nuragic period, and given the appearance of the swords and spearheads probably fall within the earlier first millennium BC, that is, the local Late Bronze Age. Unfortunately we do not know the context of these depictions and therefore how frequently a warrior might have expected to don his armour, or what he then did; the figurines may well have been intended as part of elaborate rituals or commemorations, rather than as depictions of real people and events; but they provide a lively visual commentary on warrior life in one part of Europe in the Late Bronze Age.

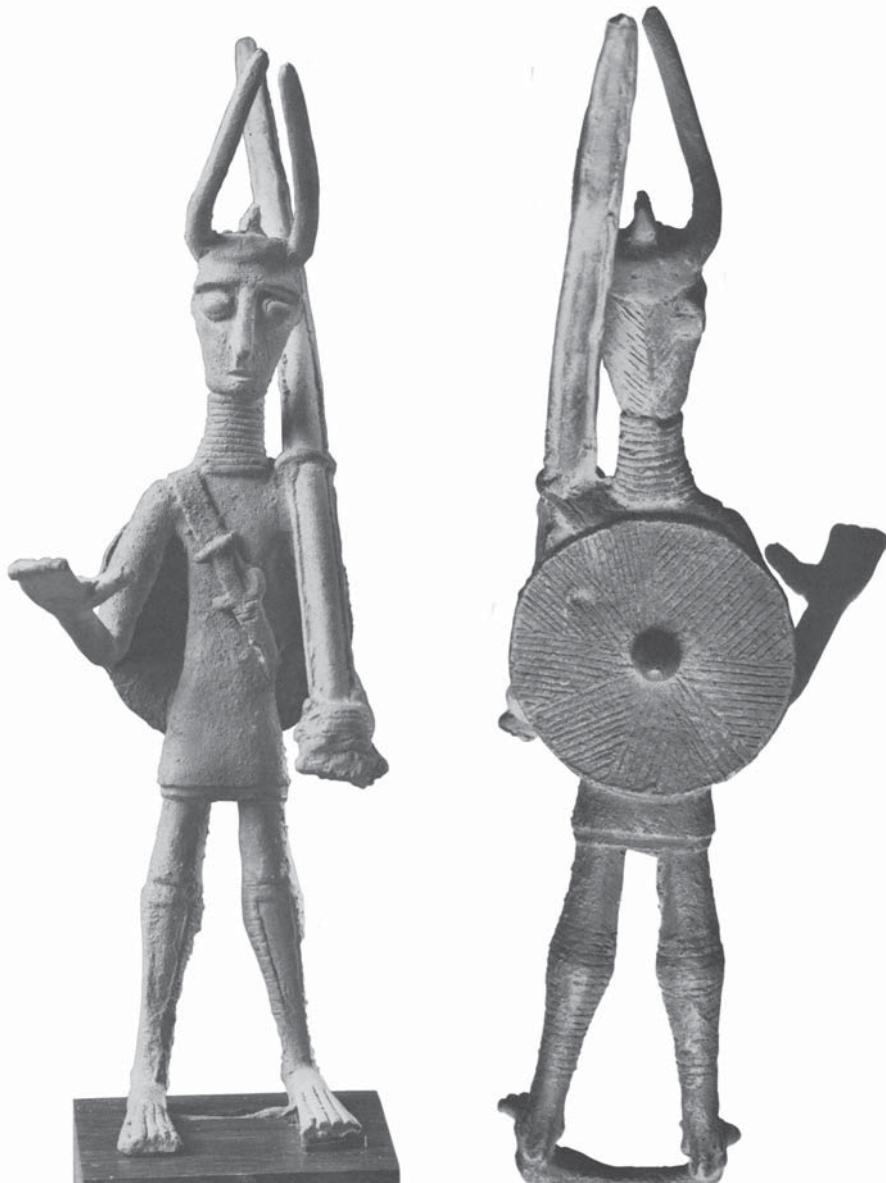


Fig. 7. A Sardinian warrior figurine (front and rear views).
Source: *BADISCHES LANDESMUSEUM KARLSRUHE* 1980.

Chapter 6.

The Middle Bronze Age: the rise of large-scale violence and the transformation of the warrior

The character of the period

Most evidence for warfare and aggression in the Middle Bronze Age continues to come from cemeteries. In much of central Europe the Middle Bronze Age (Bz B-C, ca 1600–1400/1350) is characterised by inhumation burial under tumuli, and the same is true for the Nordic area during Period II. In the Hungarian plain, the rite was often by cremation, depending on area. Southern Europe continued to go its own way; in the Aegean the most significant factors were the decline of Crete and the rise of Mycenae, with its evidence for highly provisioned warriors in the very rich graves of the Early Mycenaean period; warlike intent appears to continue in subsequent centuries, as the building of fortress towns and the making of large quantities of weaponry attest. The discussion of warfare in Greece is not the intention of this contribution, however, as it has been the subject of a recent volume that covers all the main aspects (Laffineur 1999).

It is above all the graves of the Tumulus Bronze Age of central and west-central Europe that indicate the developing status of the warrior, particularly those containing the more obvious signs of warriorhood: swords and spearheads. It would be hard, if not impossible, to give a clear indication of the proportion of Tumulus graves that contain such equipment but a scan through the pages of one of the main publications of such graves suggests that perhaps one quarter of them contain one or more of these types – usually a dagger or dirk, sometimes a spearhead, less often a rapier and most seldom a sword (Čujanová-Jílková 1970).

This suggests that warrior status was one of the roles which may be identified in this series of graves – though not the only one. There is also plentiful evidence for female accoutrements, which appear to be regionally specific; so much so that it has been possible to identify women wearing ornaments that were foreign to the place where they were deposited, leading to the suggestion that these were

people who had married outside their home area and moved to a new domicile (Wels-Weyrauch 1989; Jockenhövel 1991). If such subtle distinctions can be detected in ornament graves (assumed to be female), can we say the same for those with weapons (male or female)?

Certainly it is apparent that in central Europe weapons are provided in a range of different grave assemblages, from the provision of a single dagger (as at Chocenice Barrow 10: ČUJANOVÁ-JÍLKOVÁ 1970: 33 Pl. 1B, with a bowl and an arming), to much more elaborate provision (as at Štáhlavy Barrow 48, with a rapier 61.8 cm long with the remains of a wooden sheath, a dagger, a flanged axe with wooden haft and wound wire fastening, a long pin, a flint knife, and a bowl that contained the remains of a meat-based meal; ČUJANOVÁ-JÍLKOVÁ 1970: 96 Pl. 111C) (*Fig. 8*). In between there are several grades of provision. This material is in urgent need of a modern analysis to tease out more of the significance of the variation.

The contemporary (Period II) barrows of the Nordic area also contain a huge amount of information relating to the role or status of the buried individual. In this, the material collected in the great volumes edited by E. ANER – K. KERSTEN (1973–2003) is invaluable. A full analysis will take many years, but there are plentiful indications of richness of warrior equipment, and of variability. A glance at any of these volumes gives some idea of the great wealth in bronzes of all kinds in these graves, but if one takes the length of index entry for each type as an indication of frequency (a fair test, since each object in each grave is indexed), a rough order of frequency would be as follows: sword – dagger – knife – spearhead. There are also plentiful axes of various kinds, and an assortment of ornaments (rings, bracelets, fibulae, armbands, discs, buttons/knobs, belt-hooks, neckrings, beads etc).⁸

There are hundreds of such graves that one could take as exemplifying the pattern. *Fig. 9* illustrates one such, from Kellinghusen, Kreis Steinburg (Schleswig-Holstein). Grave 2 in this tumulus contained, as well as a sword, a pin, knife, razor, arming, fibula and a pair of tweezers (NORTMANN 1979). These finds must be considered part of a wider set of items that came into common usage as part of the paraphernalia a warrior might expect to possess (cf below, p. 141).

⁸ I have not attempted a proper evaluation given the potential size of the task, but any glance at the plates in the Aner – Kersten volumes confirms the frequency of swords and daggers. Variation by area, which has been considered by STEFFGEN (1997–98), is obviously a matter of great interest.

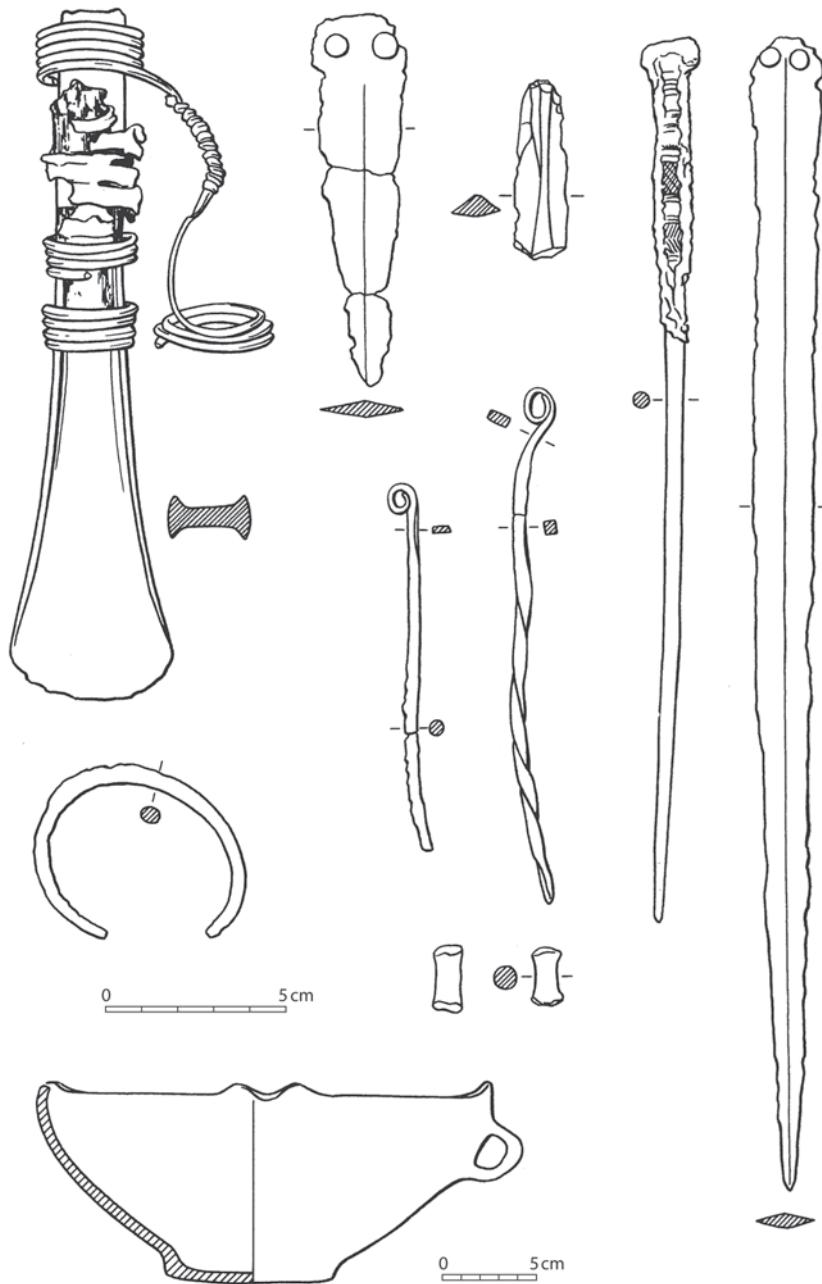


Fig. 8. The grave-goods of a typical Tumulus culture barrow:
Štáhlavy Barrow 48, west Bohemia. Source: ČUJANOVÁ-JÍLKOVÁ 1970.

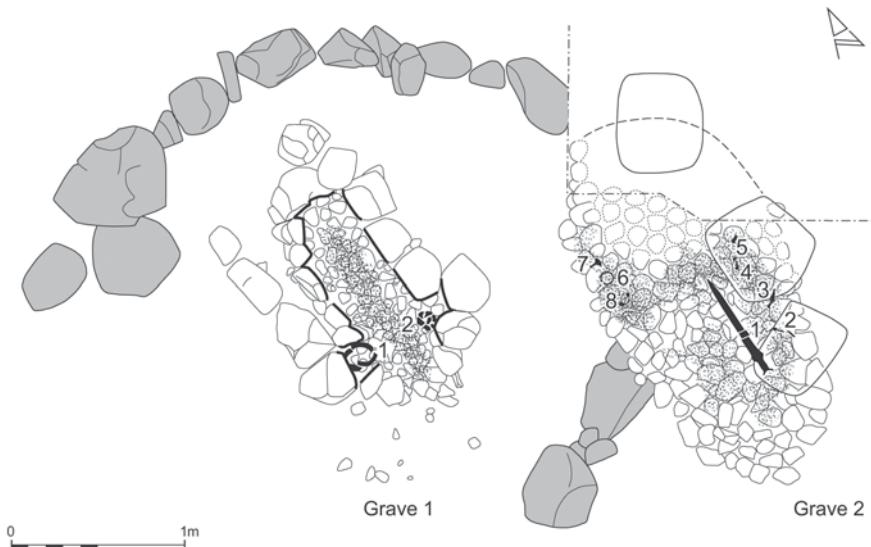


Fig. 9. Plan of a Nordic barrow burial of Period II: Kellinghusen, Kreis Steinburg (Schleswig-Holstein). Source: Nortmann 1979.

The picture presented by these graves is complex, and viewed as isolated assemblages, a static one. In actual fact they represent a dynamic past based on the use of weaponry in the lives of real people. It is impossible to relate them directly to Bronze Age life in terms of what the owners of these weapons did, and how they were viewed by their contemporaries, but there are indications from other sites which come to our aid. While instances of buried individuals with trauma of some kind afflicting their bones do occur, it is rare that we can correlate such trauma with events that affected larger numbers of people and may have actually been caused by hostile activities, by those who lived at the time of (or a little later than) the grave depositions in question.

Mass violence: Velim and Blučina

It is during the late part of the Middle Bronze Age and the beginning of the Late Bronze Age (Urnfield period) that one of the most remarkable manifestations of prehistoric violence occurs. The two Czech sites of Velim and Blučina (HRALA *et al.* 2000; HARDING *et al.* 2007; TIHELKA 1969) are the best known examples of this, perhaps the only true examples (though more sites may turn up, and there are some indications that what is present here on a large scale may be present

elsewhere on a smaller scale). On both sites large numbers of skeletons, or skeletal parts, were found in ditches and pits, usually in considerable disorder. The two sites are not exactly comparable; there are notable differences between the two, but a number of things connect them. They are close in date, lying at the very end of the Middle Bronze Age and transition to the Urnfields (Bz C2-D); the bodies appear to have been buried with little sign of respect for the dead; there are many instances of trauma on the bones; and the ‘burials’ bear little resemblance to what is known of conventional burial in either the Middle or the Late Bronze Age. Some authors in the past, indeed, have gone so far as to suggest ritual slaughter and cannibalism on these sites (JELÍNEK 1957; DOČKALOVÁ 1990), or a more generalised form of ritual in which bodies or body parts were deposited in pits and ditches (HRALA 2000); while others have suggested that the dead resulted from violent and hostile attacks (VÁVRA – Šťastný 2004).

The Velim site has been the subject of detailed treatment in recent years both from archaeologists and from palaeopathologists, and since detailed reports on recent excavations are in the public domain (Hrala *et al.* 2000; Harding *et al.* 2007), no extensive account will be provided here. The site consists of a series of ditches and pits, roughly concentric in outline, enclosing an inner area whose nature is almost entirely unknown because of modern disturbance. Almost all the pits and ditches contain human skeletal material, which may be articulated or disarticulated. In the final phase of the site, a very broad and shallow ditch surrounded the site, with a rampart on its inner side; in a later phase it was enlarged, and a timber-framed rampart built over the infilled first-phase ditch. It was destroyed in a massive conflagration at around 1400 cal BC.

In spite of some suggestions to the contrary (e.g. by Peter-Röcher (2005), who has argued on the basis of the preliminary information in interim reports that the depositions were merely the result of a normative burial rite), the skeletal material at Velim results neither from a cannibalistic treatment of the dead, nor from a standard burial practice – as a number of distinctive features in the bone assemblages reveal. Treatment of human bone was quite different from that of animal bone, which was extensively butchered and often very fragmented, which is a strong indication that cannibalism – at least any kind that could be recognised archaeologically – was not practiced (Knüsel – Outram 2007). The complete absence of grave-goods speaks strongly against any kind of intentional and respectful burial; while the strange positions in which bodies lay, as if tumbled into pits or ditches and hastily covered up (Fig. 10), also militates against an interpretation as anything other than summary disposal of the dead after sudden



Fig. 10. An infant burial in a ditch terminal at Velim, central Bohemia. Photo: author.

death. At the same time, certain other practices are evident: crania (not skulls) were collected and placed in pits, and many skeletons were disturbed and moved about after they were wholly or partly decomposed. Indeed, there are plentiful instances of individual bones being present in redeposited contexts, without any indication of where they were originally placed or with which other elements they belong.

Then there are numbers of bronze socketed arrowheads present at various points in the ditch and pit infills, clearly resulting from volleys of fired arrows – arguably by attackers against those occupying the interior (Hrala *et al.* 2000: 254–5 Fig. VII.20). The overall impression is that the occupants of Velim in the late Middle Bronze Age were the subject of a violent attack or attacks which left many people dead.

There remain a number of curious and problematic features to be taken into account. It is clear, for instance, that these events did not all occur at one single time. Many of the pits were large and deep, with human skeletal material present at several different levels. The massive Feature 27 in particular could not possibly have been dug and filled up in one single episode of burial; there is so much earth to be shifted that with Bronze Age technology a period of weeks, months, or years has to be imagined (HRALA *et al.* 2000, 16 ff., not showing the great complexity

of this feature). In some cases there was a stratigraphic succession in which one body was covered over and the pit reused for the deposition of another; it is not possible to assess the time that might have elapsed between the two depositions, but it is unlikely to have been on the same day, week or even month. On the other hand, in some cases (notably Feature 30) it does appear that a large burial pit was excavated and several bodies deposited in one go (*Fig. 11*) (*ibid.*: 22 ff. Figs III.16, III.17). It thus seems that two quite separate practices were occurring: one involved the deposition of many bodies at one time; the other deposition of individuals over a rather longer period. Neither can be called normative in the sense of Tumulus or Urnfield burial as known from central Bohemia (or any other part of the contemporary world), but the latter practice is more akin to an intentional burial mode than the former.

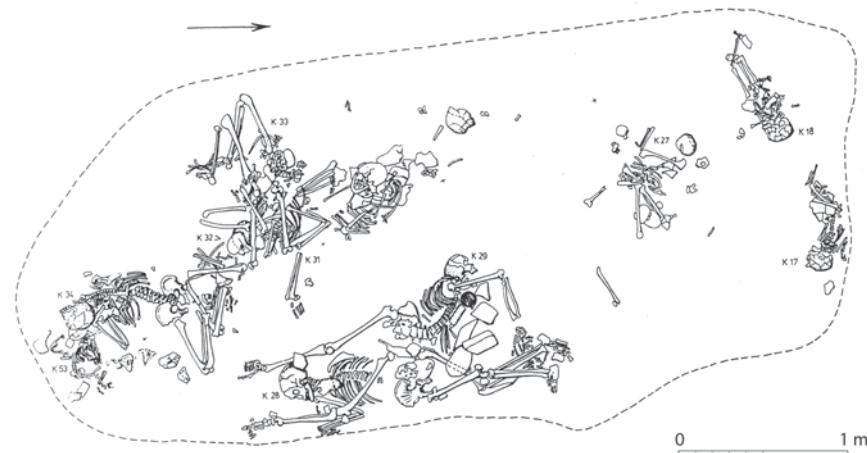


Fig. 11. Velim, central Bohemia: plan of Feature 30. Source: VÁVRA 2000.

In addition to this, the area known to have been used for burials was only part of a much larger entity. Unfortunately it is quite unclear how large, or of what character, this was, as most of the site has now been destroyed or otherwise become unavailable for archaeological investigation; but geophysical prospection has suggested that the site adjoined, or formed part of, a massive enclosure some 1.0 x 0.5 km in extent (Majer 2000).

The implications of this evidence from Velim are extraordinary. While Hrala (2000) argued that the site was largely cultic in nature, and Peter-Röcher (2005) has suggested that the site is basically a cemetery, most commentators, myself included, adhere to the view that one or more hostile attacks occurred at

Velim. The last of these attacks was presumably responsible for the destruction of the rampart, but stratigraphically this was later than most of the pit burials, so aggressive actions must have occurred at the site on previous occasions. It remains to be decided whether such actions were the result of a wider set of aggressive movements – for instance part of a “migration of peoples” such as has sometimes been suggested for the start of the Urnfields (e.g. Kimmig 1964; Bouzek 1969: 84–7) – or the result of internecine strife that was somehow endemic in Velim society. Of course it is impossible to make a definitive judgement about these two alternatives; invoking invasions by new peoples is nowadays out of fashion, but the comprehensive cultural change that occurred with the Urnfield cultures requires explanation, and the arrival of new people certainly cannot be dismissed out of hand.

A number of other points may be made about the depositions at Velim. Bodies were deposited throughout the use-life of pits. This is very evident from Feature 27, the enormously large and deep feature containing several distinct pits, one with the body of a woman, with gold spiral ornaments lying *under* (and not *with*) her body, and at least ten other individuals. This burial was not at the bottom of Feature 27, which continued on down some distance below (not shown in Vávra 2000). In some cases it appears that a number of individuals were laid out at one time; in other cases, there is a scatter of individual elements and sometimes a single articulated skeleton. But in virtually every case (Feature 64 North pit is an exception) there were multiple bone layers, with articulated skeletons being exceptional.

By far the largest quantity of human bone comes from individual elements, or sometimes element groups, and not from complete skeletons. A few burials were laid on their sides, the legs drawn up, as was the “normal” practice for inhumations in the Early and Middle Bronze Age. But a much larger number were laid haphazardly, as if thrown into a pit without any care being taken. In one excavated instance a skeleton consisted of the torso, pelvic girdle and lower limbs of a single individual, the two bone groups displaced laterally from one another. This suggests that bodies, or parts of them, were placed in the ditches, and were subsequently shifted when disintegration of the tissue was sufficiently far advanced that parts of the corpse would detach from one another.

Pit-digging at Velim was thus a major and continuing undertaking. It is unclear how many pits, or how much of complex pits like Feature 27, were open at one time. It seems likely that the process of deposition was a continuous one, going on in many pits simultaneously, or almost so, rather than a successive one. Where

a number of skeletons lay at the same level in a pit, then presumably enough space was opened up for all of them to be deposited together. Where a single skeleton lay on its own, a relatively small space may have been cleared. Where depositions took place continuously over a period of time, that period may have been days, months, or years.

Does this mean that we are dealing with formal burial? To the extent that some bodies were deposited in pits and covered over, the answer might be yes; this would also be the case with those few burials where grave-goods were provided, though as mentioned above, in at least some cases the goods are not obviously placed with the body, but appear to have been hidden away. But several other facts indicate that these formal burials were far from “normal”, whatever that may mean in the context of the Kolín region in the Middle Bronze Age. The lack of proper positioning, or laying out of the dead; the removal of skulls; the evidence of peri-mortem trauma on a number of individuals; the lack of grave-goods; the post-mortem treatment of skeletons; all bespeak a highly unusual attitude to the dead, which is so different from everything that is known of the Tumulus period in Bohemia that it is necessary to invoke special practices to account for it. And death in a slaughter following a hostile attack remains the most plausible event or events that could account for the disposition of skeletal remains that is visible at Velim.

At Blučina, the situation is a little different. The Cezavy hill (*Fig. 12*) contains a complex set of ditches extending over much of the top and upper sides of the hill (Tihelka 1969); those that belong to the later Early Bronze Age do not concern us here, but the extensive deposits of the Middle-Late Bronze Age transition are highly significant. Tihelka’s work uncovered some 132 burials, containing 205 skeletons buried in a ditch running along the side of the hill. There were apparently many similarities to the situation at Velim, with “accumulations of both complete and fragmentary human skeletons”, multiple burials, and burials containing a mixture of human and animal bone, which is described as being most frequently that of cattle. There were burials “placed unritually or deposited casually”, and some were positioned in strange attitudes, as if struggling. There are also isolated skulls or crania, many of them of children.

Tihelka believed that the Blučina burials could not be interpreted as the result of mass slaughter following an attack on the site, not least because there were no signs that they all emanated from the same event. He preferred a ritual explanation, including the possibility of cannibalism, and drew analogies with the burials in the ditch at Hradisko near Kroměříž (Spurný 1954, 1961), and in



Fig. 12. Blučina, Moravia: view showing the slopes of the hill occupied from Early to Late Bronze Age. Photo: author.

pits at Přítluky in Moravia (Trnáčková 1954). In this he was influenced by the physical anthropologist Jan Jelínek who argued strongly that the pathological traits visible resulted from intentional killing and ritual cannibalism; many examples of cut marks on both human and animal bones were found, including the splitting of bone, allegedly to extract the marrow (Jelínek 1957).

Blučina thus offers many parallels to Velim but also instructive differences, principally in that the burials appear to show a much more normative burial rite than at Velim, including the provision of grave goods. The arguments in favour of cannibalism are today regarded with considerable scepticism by biological anthropologists (e.g. Knüsel – Outram 2007), though they cannot be excluded entirely (cf above, p. 37). And the rite cannot be regarded as entirely what one would expect from a normal burial site; the tumuli both of the preceding phases of the Middle Bronze Age, and of the succeeding Velatice culture of Moravia, show what one might normally expect. There are other reasons why violence can be inferred at Blučina too: according to Tihelka there are “indications that fighting took place near the ditch... eight bronze, stone or bone arrowheads, most

of them damaged [were found]”. The tip of one arrowhead was bent, and there are good grounds for believing that one of the male skeletons had been killed by an arrowshot. The totality of the Blučina evidence, while not conclusive, does provide strong hints that some kind of violent encounter, or maybe several, took place in the vicinity and that many of the burials result from the deaths caused by the encounter. Unfortunately it has not yet been possible through detailed examination of stratigraphical profiles or superpositions to determine whether bodies were placed successively or simultaneously.⁹

A third site, Zauschwitz in Saxony, appears to offer rather different evidence (Vogt 1989). A row of elongated pits, measuring some 1.60 m across, ran in a line across the hill. They contained in their upper levels stone and bone tools (hammers, awls), bronze rings, pits and a knife with antenna handle, and much pottery. Twenty-five of the 51 excavated pits contained disarticulated human skeletons, in which skulls and limb extremities were predominant, as well as complete inhumations and, more seldom, cremations. Some of the bones show signs of violence, and cannibalism has been suggested (Grimm 1997); the site is far from being identical to Velim, though it does suggest some similarities in the treatment of the dead. There are depositions of many periods on the site, from Linearbandkeramik to Roman Imperial, and comparable treatment of the dead appears to have taken place at different times.

If these two sites, and possibly a third, are evidence of mass violence against a population, we are left with some explaining to do. It is of course not uncommon in the ancient world to find historical sources informing us that whole populations were slaughtered, for instance in revenge for earlier attacks, because they would not surrender, or for other political or quasi-political reasons. There should thus be no *a priori* reason why the Velim and Blučina evidence could not be the result of such a massacre. There is no doubt, however, that the case would be greatly strengthened if these two sites were not so unusual when seen in the wider context of Bronze Age Europe.

⁹ I am not familiar with the soil conditions at Blučina (though I have visited the site and talked with the current excavator, Milan Salaš) and do not know whether such observations might be possible – though in certain soil conditions they certainly should be.

The Middle Bronze Age – summary

While it would not be appropriate to use the evidence from Velim and Blučina to recreate a picture of the Middle Bronze Age as characterised by mass slaughter on a large scale, the evidence from graves and weaponry, as well as from these two sites, suggests strongly that the social development of the period was moving towards a more formalised type of inter-group aggression, allied to the increasing effectiveness and visibility of the warrior. We may ask how widespread this warrior ideology had become by this stage. Certainly it is found in many areas of Europe, and by the 15th century BC the warrior was fully embedded in the society of Mycenaean Greece, as many prestige weapons in graves attest. In continental Europe, enclosed or defended sites were still unusual, suggesting that the mode of carrying on aggressive acts was based not on large-scale raiding in war bands, but more on small groups perhaps under the leadership of a dominant warrior. The emergence of the sword is perhaps the strongest argument in favour of the rise of individual fights between elite leaders, since this weapon above all is suitable for close-quarters combat between equal fighters in a way that the daggers and halberds of the preceding period were not. This marked a very particular change in the conduct of warfare in the Bronze Age.

The famous barrow graves of Period II in the Nordic area of south Scandinavia show very clearly how this warrior visibility manifested itself. The “phenotype” of warriorhood that we see here is repeated so often in this area, and with variations in many parts of central Europe too, that the “genotype” (i.e. the underlying roots from which the manifestations of the warrior emerged) becomes discernible.

How this situation might relate to the extraordinary findings from Velim and Blučina is not altogether clear, but a provisional model may be suggested.

In terms of the distribution of cultural material, Velim lay in a border area, between two cultural blocks: the Tumulus culture group to the south and west, and the incipient Lausitz groups to the north and north-east. Standard Tumulus burials are unusual in the vicinity and barrows are virtually absent in this part of Bohemia. As discussed above, it can be argued that the slaughter at Velim might be connected with the transition to the Urnfield rite and cultural practice, which has often been assumed to represent the arrival of new people along with the new culture. That point is controversial, but the change to the new rite is not in doubt, and such a basic shift must have marked a significant moment in the history of central Europe. A group of people who belonged culturally to neither southern nor northern worlds, such as was the case at Velim, might have found

themselves at particular risk of violence from competition between these worlds. The improved technology of warfare that the new weapon types represent gave aggressive war bands the means with which to exert the pressure they needed; and the people who finished up in the ditches and pits at Velim and Blučina were on the receiving end.

In this area warriors are not archaeologically visible, unlike in west Bohemia or south-west Slovakia. Yet their aggressive actions could hardly be plainer. In the ensuing period, that of the full Urnfield rite, there are continuing shifts of geographical focus, but the overriding impression is one of a much more uniform culture across large areas of central Europe (and beyond); and the mode of warfare became something different.

In south Scandinavia, where Period II is contemporary with the sites and cultures discussed above, swords remains a common grave-good right through the period and into Period III, which, although contemporary with the full Urnfield period in central Europe, only gradually sees the transition to the cremation rite. Warrior status for the occupants of these barrow graves seems clear, though there are differences between different parts of the area as to how much bronze was in circulation at particular periods (Kristiansen 1977, 1978). Apparently the sequence was rather different in the North to that in the centre of Europe, where the dramatic change takes place rather earlier (in the fourteenth and earlier thirteenth centuries BC). In Period III in Denmark, swords continue to be placed with the dead, though spearheads are much less common than previously (Broholm 1944: II, 146 ff). The implications for the dynamics of warriorhood remain to be elucidated.

Not all areas were so rich in weaponry. One can surmise that (survival factors apart) extra stress on social systems might have arisen in border zones and in areas where for whatever reason there was limited access to prestige weaponry. In Apennine Italy and the central Balkans, for instance, archaeological cultures are not marked by any prevalence of warrior societies in the Middle Bronze Age, while in north Italy most evidence relates to the extensive settlements of the Po plain and sub-Alpine valleys; the same is true for the Alpine valleys of Switzerland, where sites such as the Padnal at Savognin show a continuous development through the Middle Bronze Age (Rageth 1986). In Iberia the Argaric Bronze Age continued until perhaps 1400 BC, with long swords being found in some graves that can be designated warrior graves. In Britain the Middle Bronze Age is rather poorly known in terms of settlement and burial, though stock enclosures on the Wessex downlands were probably widespread, and land division in the form

of field systems was common. Fort building did not begin till later, even if there was a move towards hill settlements before 1200 BC.

I have concentrated here on central Europe, and to a lesser extent south Scandinavia, since the bulk of the evidence comes in its most informative form from this area. The extent to which this model would apply to other areas is debatable. What seems indisputable is that the 300 or so years between 1650 and 1350 BC marked a major shift in the way in which European societies developed, and that a crucial aspect of that shift was the way in which the warrior's identity and status was transformed.

Chapter 7.

The sword and its users

The invention and development of the sword in the Early and Middle Bronze Age led to a whole new set of principles in terms of how fighting was conducted and how warriors manifested their status. In turning to consider these matters, it is necessary to move away from traditional typological studies towards an analysis of where swords appear – geographically and contextually – and how they might have been used. Studies of swords that concentrate solely on typological detail run the risk of missing information that bears on how the different types relate to the intentions of their makers, both in how the objects were used in combat, and how they were to be deposited – that is, their biographies, their life and their death.

Variable distribution of swords

Swords were distributed variably across Europe. By using the various volumes of the *Prähistorische Bronzefunde* series, one may gain some insight into these matters. A version of *Table 1* has already been published (Harding 2000, 280) but further details are added here.¹⁰

This table illustrates two points. First, the density of swords varies enormously between different areas of Europe. Second, the ratio of solid to organic-hilted pieces is also very variable. To take the first point first: some areas, notably Jugoslavia and Italy, were quite poorly provided with swords, while others, notably south Scandinavia and Ireland, were relatively flush with them. Ireland especially seems to have specialised in sword production, and in this is in marked contrast even to Britain. The crude figures hide more subtle variation. Thus the picture for Britain is itself varied, with large parts of upland Britain, notably central and north-western Scotland, central Wales, north-midland and south-west England, almost devoid of finds, contrasting with large concentrations in the south-east and East Anglia, the Thames and Trent valleys, and in eastern Scotland (*Fig. 13*).

¹⁰ It must be stressed that this table is illustrative only; no attempt has been made to bring the published numbers up to date through new finds, on the assumption that the proportions of sword types will remain roughly the same.

Table 1. Sword numbers in various countries of Europe.

	Organic hilt (O)	Metal hilt (M)	Total (T)	Ratio (O/M)	Area (A) (1000 km ²)	Swords/1000 km ² (T/A)	Km ² /sword
Switzerland, Austria & South Germany ¹	614	473	1087	1.30	275	3.95	253
Italy ²	167	65	232	2.57	301	0.77	1297
Romania ³	273	80	353	3.41	238	1.48	674
Hungary ⁴	226	202	428	1.12	93	4.60	217
Former Jugoslavia ⁵	183	51	234	3.59	256	0.91	1094
Denmark & North Germany ⁶	604	641	1245	0.94	181	6.88	145
Total above	2067	1512	3579	1.37	1344	2.66	376
Britain ⁷	641	19	660	33.74	230	2.87	348
Ireland ⁸	624	0	624	∞	82	7.61	131
Total Britain & Ireland	1265	19	1284	66.58	312	4.12	243

¹ SCHAUER 1971a, KRÄMER 1985, v. QUILLFELDT 1995² BIANCO PERONI 1970³ BADER 1991⁴ KEMENCZEI 1988: 199⁵ HARDING 1995⁶ SPROCKHOFF 1931; SPROCKHOFF 1934; OTTENJANN 1969. These figures need to be taken in conjunction with the more up-to-date figures provided by THRANE 2004a (cf below).⁷ BURGESS – COLQUHOUN 1988⁸ EOGAN 1965

At the local level, too, sword frequency varied considerably. In Schleswig-Holstein and Denmark in Period I most graves belonged to the Sögel type, best known from Lower Saxony. The distribution of 72 sword graves shows a marked concentration in Schleswig, a small number in central Jutland, and only a couple of examples from north Jutland and Zealand (Steffgen 1997–98: 128 ff.; cf Sprockhoff 1931, 1934; Ottenjann 1969). In Period II, there are many more grave finds (a total of 639 closed groups in this analysis, male and female), and they are much more evenly distributed across the area, with marked concentrations in north-east Zealand, north-west Jutland and southern Holstein, with a significant further distribution down the east Jutish area and the east coast of Fyn and the west coast islands. The distribution of the 422 sword graves broadly follows this pattern. This is particularly true of the most common grave inventories, those with only a sword, which follows the grave distribution closely (Steffgen 1997–98: 170 ff.).



Fig. 13. Distribution of Bronze Age swords in Britain.
Source: BURGESS – COLQUHOUN 1988.

Detailed statistics are also available in this area on the distribution of the main sword types (ibid.: 170 ff.). Solid-hilted swords are absent on the west side of Jutland, though the numbers involved are small; where barrows are more numerous they are present. By contrast, flange-hilted swords are relatively under-represented on the Danish islands. The raw numbers indicate considerable variation too: of 207 graves that contain only a sword (Steffgen's "Weapon Group 1A"), half (104) have a rivet-heel sword, less than a quarter (46) a solid-hilted sword, and less than a fifth (38) an organic-hilted sword. In addition, the associations with other items, or with none, vary between sword types: between 40% and 50% of the octagonal hilted swords, *Vollgriffschwerter* and *Griffzungenschwerter* have no other grave goods; 38% of the riveted swords are associated with fibulae; and *Vollgriffschwerter* and *Griffzungenschwerter* are significantly more likely to appear with gold objects than are other sword types (Fig. 14).



Fig. 14. Percentage representation of Early Bronze Age graves of "Weapon Group 1A" (swords the only weapon present) in north Germany and Denmark with indicated grave-goods. Source: STEFFGEN 1997–98.

These matters have been pursued also by Henrik Thrane, who has compared the numbers of swords in different parts of the Nordic zone, showing that in terms of sword prevalence in graves of Periods I-III, Denmark was the undisputed champion of Europe, and that the mode in which swords were produced and used was rather different in Denmark from that in central Europe (Thrane 2004a; 2004b). Within the overall figures, some areas were better provided with swords than others: curiously, the island of Bornholm has the highest density of all, at

7.6 swords per 100 km², with Slesvig (north and south) not far behind on 6.96 and 6.32 respectively; at the other end of the scale, Scania only has 1.9 swords per 100 km², Lolland and Falster 2.67 and Jutland 3.9.¹¹ I assume that part of the reason for these differences relates to the size of the areas studied; Scania and Jutland are much larger in area than the islands, and contain proportionately much more territory that was relatively little used in prehistory. Nevertheless, it seems undeniable that some parts of Denmark and adjacent areas saw more people with swords than did others. As Thrane remarks:

“The baffling number of swords from the Nordic Bronze Age indicates an emphasis on what we must call the martial aspects of life and society. The challenge is to understand these aspects in the context of a society otherwise dominated by peaceful activities linked to agriculture and a possessive attitude to land expressed by the thousands of tumuli and by the very sword graves so dominant in our image of these monumental mounds” (2004a: 172).

In eastern Germany, Wüstemann (2004: 1–2) has shown that the great majority of swords are in the north of the area (Mecklenburg-Vorpommern), where most pieces are of Nordic forms. Generally the swords follow the river valleys; some are beside lakes or on the west Baltic coast, especially the north coast of Rügen. This distribution broadly follows that of settlement in the area, but there is another factor at work: the loci of deposition, especially in wet places – to which I shall return later. Other authors have described comparable differentiation. v. Quillfeldt (1995), for instance, shows that the distribution of solid-hilted swords in southern Germany is concentrated in Bavaria south of the Danube, and are sparsely distributed in north Bavaria, Baden-Württemberg, Hesse and Rheinland-Pfalz; in the west of the area the common sword form was the organic-hilted sword, which makes the absence of solid-hilted pieces more understandable, but there is no obvious reason why north Bavaria should be relatively underrepresented. This sort of pattern can be found in many other parts of Europe, and demands explanation. In the former Yugoslavia, the great majority of finds come from the north of the country, along the valleys of the Sava and Danube, or on parts of the Dalmatian coast, with the mountainous interior largely empty. I believe this to be connected at least in part with production and deposition practices, though in this instance the absence of finds in the interior mirrors the absence of many other bronze items. Much of this land is mountainous and

¹¹ The figure for km² per sword for Scania should be 52.27.

relatively inaccessible; while some inland meadow areas and plateaux were home to substantial amounts of settlement, this was rather localised and usually shows little evidence of contact with the wider Bronze Age world. Even so, the Morava valley was fertile and accessible, yet has few sword finds, so the conditions of creation, use or deposition were different from those further to the north-west.

The frequency of swords also varied considerably by period, and though in the example just quoted this may be almost entirely related to the number of graves in each period, when one takes a wider view of some areas, it is evident that the gross figures could differ widely. In Britain the obvious example is the quantity of Ewart Park swords, which exceeds the number of all other types together (*Table 2*). Some of this phenomenon is surely due to the nature of the period and the possibility that bronze was being dumped in response to the arrival of iron, as some authors have suggested (e.g. Burgess 1979), but surely not all.

Table 2. British swords by phase (Source: Burgess – Colquhoun 1988).

Phase	Total in phase
pre-Wilburton	146
Wilburton	115
Ewart Park	421
Carp's Tongue	27
Hallstatt	55
Total	764

v. Quillfeldt's statistics for the Vollgriffschwerter of southern Germany and adjacent areas show some differences between periods. Ignoring a relatively small number which cannot be assigned to a single period rather than a spread of time, and taking Ha B2 and B3 together, the figures are as follows:

Table 3. Vollgriffschwerter by phase in southern Germany, Austria and Switzerland (Source: v. Quillfeldt 1995).

Phase	Total in phase
Br B/C1	14
Br C	59
Br D	54
Ha A1/2	68
Ha B1	13
Ha B2/3	83

The most striking feature of this table is the marked decline in Ha B1 followed by a very large rise in Ha B3. Ha A1 and 2 are not clearly separable, but even if one were to assume that the 68 swords were divided equally between the two phases, the 34 that would accrue to each does not suggest any big difference in sword deposition in each phase to that in the preceding and following phases. If one were to assume that each phase was of equal length, then about 45 swords might be expected in each, on the hypothesis that there were no other factors influencing deposition. In practice some phases were somewhat longer than others, though we are not able to define these limits precisely.¹²

Another example is that of the former Jugoslavia, Hungary and Romania, where by far the largest number of swords belongs to the second phase of metal deposition in the Late Bronze Age, equivalent to Ha A1 in central Europe (Harding 1995; Kemenczei 1988, 1991; Bader 1991; cf Vinski-Gasparini 1973 for the overall chronological distribution of Croatian hoards; Mozsolics 1973 and 1985 for Hungary; Petrescu-Dîmbovița 1978 for Romania; tabulation of hoard numbers in Harding 2000, 356, Table 10.1). In Jugoslavia, many of these pieces are in the hoards which are distributed along the great river valleys of the northern Balkans (mainly the Danube and Sava); in Romania the bulk of the pieces are in the huge hoards found in Transylvania. Since almost all of these finds are in hoards, it is highly likely that this is a phenomenon that is unrelated specifically to swords, but rather to practices relating to the cycling and deposition of metal. I have considered this matter elsewhere (Harding 2000, 352 ff.). How the swords, or rather fragments of them, came to be in the hoards in the first place is an intriguing matter; but there are strong grounds for believing that deliberate selection of material for inclusion in hoards was a standard practice in much of Europe in the Bronze Age.

¹² The standard deviation including all seven periods is 23.06; excluding Br B/C1 and Ha B1 it is 17.18. This relatively large figure confirms there is considerable variation in the statistics. A χ^2 test on the 277 swords that can be assigned to the six periods from Br C2 to Ha B3, and assuming certain period lengths (Br C2: 100 years; Br D: 150; Ha A1: 100; Ha A2: 100; Ha B1: 100; Ha B2/3: 250) was highly significant, strongly rejecting the null hypothesis that the figures could have arisen by chance. Most of the variability lies in the higher than expected figure for Br C2 and the lower than expected for Ha B1. Because the B2 or B2/3 period is longer than the rest the higher figure of swords found is in accord with expectation.

Hilt material

A curious aspect of sword distribution is the way in which different areas differentially adopted the different types of grip. One might be tempted to dismiss this as irrelevant, since in practice all finished and complete swords must have looked rather similar – the organic hilt-plates providing a smooth rounded grip for the hand in just the same way as the bronze hilts did. Yet the differences in adoption of the solid-hilted form are so marked that they cannot be explained merely by the quirks of smithing technique or production. At opposite ends of Europe, in the British Isles and in the southern half of the Balkan peninsula, solid-hilted swords were rare if not unknown. The same is true for certain smaller zones in the continental mass lying between these two extremes. On the other hand, some parts of Europe – Hungary, for instance – were provided with large numbers of these pieces. This cannot be a matter of mere chance.

Experimental work needs to be carried out to compare the time required and difficulty in producing the two distinct hilt types. Certainly two different sets of skills were required: solid hilts were the work of the smith, organic that of the bone or wood carver. The two crafts may have been carried out by one and the same person, but the skills are different. On the face of it, creating organic hilt-plates was the easier, since only the rivets required the metalworker to be involved; casting on metal hilts was very skilled work, requiring heat, moulds, molten metal, as well as decorating and polishing. Even though wood or bone hilts and pommels might have been elaborately decorated, such decoration involved knives and chisels, with the rivets being hammered cold from either side to secure the plates firmly in position. These two sets of procedures seem, to modern eyes at least, of different orders of complexity. If we assume that more complex, lengthy and difficult tasks lent greater value to the finished object, then solid-hilted swords – especially those with elaborate decoration – were the more valuable objects of the two. And this in turn leads us to question the role of the objects, for instance as objects used in combat.

Examples are known of hilts that were mended or replaced altogether (e.g. the Mycenaean rapiers from Iglarevo, Metohija: Harding 1995: 21 Taf. 4, 24–25; or the gold sword from Perşinari: Vulpe 1995). This was obviously in its most basic terms a means of extending the life of a sword, but perhaps it was also a means of ensuring the continuing efficacy of a particularly successful weapon. In use, sword and hilt often parted at the shoulder, making the hilt a particular danger area. Although statistics are not readily available, it appears that solid-

hilted swords are much less likely to have suffered this damage than organic-hilted. This raises the interesting question of why swordsmiths did not haft all, or nearly all, swords with metal rather than organic hilt-plates. A plausible answer is that it was easier to go for the latter, leaving the hafting work to a wood or bone worker, even though the sword was much more likely to break in use. An alternative would be that solid-hilted swords had special functions that were only rarely related to real combat.

Some sword types had a very general distribution, for instance the Reutlingen type of *Griffzungenschwert* (Schauer 1971a: 132 ff.), while others were rather specific in where they occurred. Ottenjann (1969, 75 ff., Taf. 87, Karte 28) distinguished *Vollgriffschwert* “workshops” in the Nordic area on the basis of the particular treatment of hilt and pommel, and other general characteristics, and a recent analysis has taken this idea further (Stockhammer 2004: 99 ff.). Stockhammer works from the premise that there existed a number of “circles”, i.e. regional zones where particular customs were prevalent (*Sittenkreise*); these included “workshop circles”, which would have been responsible for the production of particular products, in this case bronze swords. In the case of *Vollgriffschwerter*, the early, Riegsee, type was widely distributed, but as time went on the various stylistic types became more widely separated and had more regional distributions; Stockhammer sees a progressive “loss of meaning” in the significance of the decorative motifs as time went on, and a decline in the importance of possessing a foreign sword. By the Ha B period it was more the form of the sword and not its decoration that was important (ibid.: 138).

Sheaths

The sword was, where we have information on the matter, held in a sheath – usually of wood or leather, but occasionally of wound wire or sheet bronze. In later parts of the period, leather sheaths were capped at top and bottom with bronze fittings (so-called “mouth-pieces” at the top and chapes at the bottom). Where swords are found in graves, as occurs most frequently in the Nordic area, they lie beside the body in the coffin, though in life they must have been fastened to a strap or belt; sword-bearers on Scandinavian rock-art appear to have the sword suspended at waist height. Excellent examples of scabbards in wood, leather, or a combination of the two are to be seen in many graves in the Nordic area, for instance at Store Kongehøj, Guldhøj, or Trindhøj (all in Vamdrup parish); the latter has a fine bone and horn chape (cf below) (Aner-Kersten vol. VIII, Ribe Amt (1986), 38 ff. no.

3832A, Taf. 22; 29 ff. no. 3820A Taf. 18; 24 ff. no. 3817A, Taf. 12) (*Fig. 15* left and centre).

These sheaths of organic material are preserved in the anoxic conditions of Nordic barrows, but were probably common throughout the Bronze Age world, even where this cannot be demonstrated from surviving finds. Metal scabbards are also known, though they are not common. Sheet metal versions occur in some areas, as in the western Balkans, for example (Harding 1995: Taf. 44–45); a rarer version consists of stout wound wire, presumably surrounding leather, as at Trilj in Croatia (Harding 1995: Taf. 44, A4) or a scabbard found with an antenna sword from a Period V hoard at Münchenroda, Kr. Jena, where bronze bands of varying thickness were used to form a complete scabbard body; at the bottom is a conical chape with terminal knob (Srockhoff 1934: 100 Nr. 48 Taf. 21, 21; 1956: I, 46; Hansen 2001: 132 ff. Abb. 102; cf Wüstemann 2004: 164–6 no. 468: sword illustrated and scabbard described but not illustrated). The wound wire scabbard body terminates in a “mouthpiece” at the upper end, and a chape at the lower end (*Fig. 15* right).

Chapes are best known from early Hallstatt period swords in their “winged” form, but were present already in the Late Bronze Age. In Britain they begin in the Wilburton period, when short and long variants are known, as at the type-site itself; similar forms are present in the Ewart Park period (Burgess – Colquhoun 1988: Plates 164E, 172B, 173B, 175A).

The practice of adding a metal bottom to the base of a wooden scabbard was presumably determined by considerations of preserving the part of the object that was most likely to receive damage by bangs or blows from casual wear in use. That this did not occur everywhere must reflect different practices in the creation and maintenance of such objects; it is hard to think of specific cultural, rather than functional, reasons for the presence or absence of such items. On the other hand, the winged chapes that became common in the early Hallstatt period, and which seem to be shown on the Scandinavian rock art, look more than merely functional; protruding as they do from the line of the scabbard they would appear to have represented something of a hazard to the mobility of the swordsman. This would depend, however, on exactly how swords were wielded in combat.

The use of swords in combat

In order to gain some understanding of the role of the sword in the Bronze Age, we must examine the evidence for its use. Much has been written about this

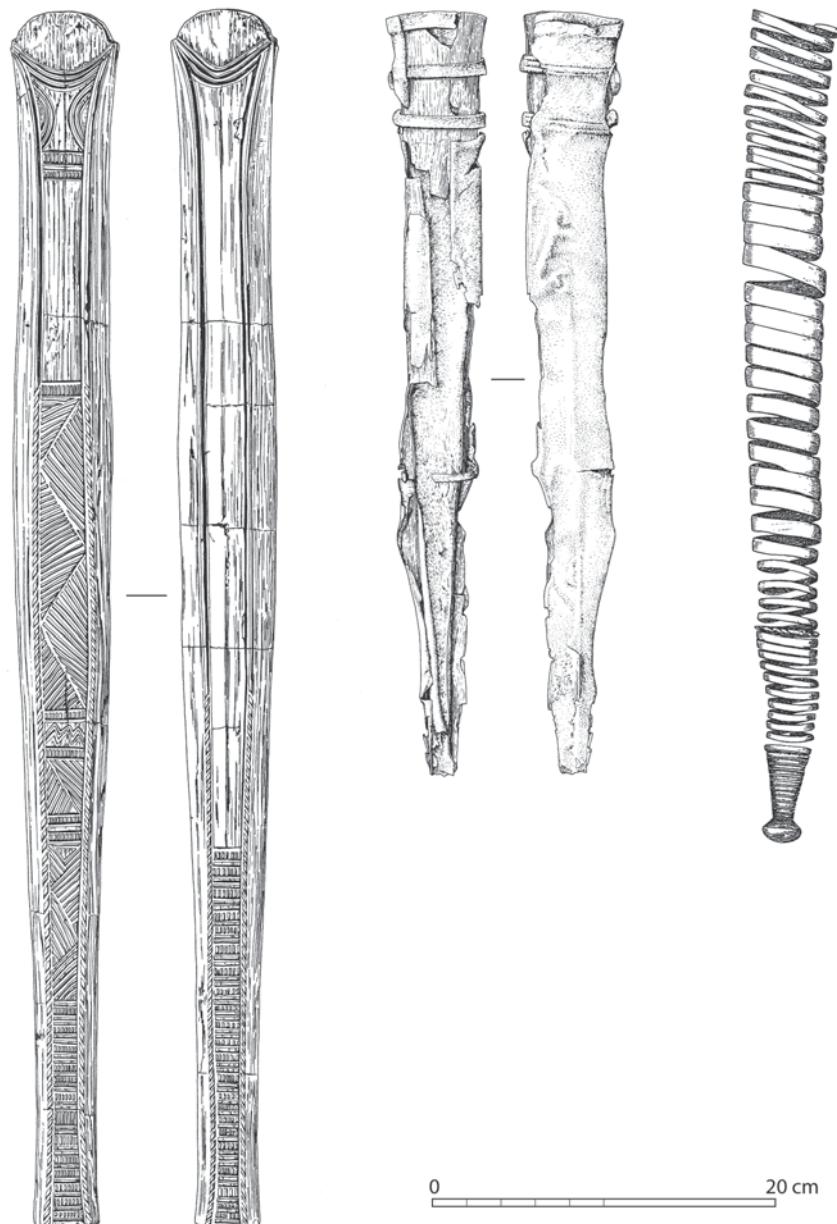


Fig. 15. Sheaths in Nordic barrow graves (left and centre) and hoard (right).
Left: Store Kongehøj, Vamdrup, Jutland (wood); centre: Kampen, Sylt (leather);
right: Münchenroda, Kr. Jena (copper alloy).

Source: ANER – KERSTEN vols V (1979); VIII (1986); HANSEN 2001.

topic, though (perhaps understandably) few people have engaged in experimental combat to try out how the weapons worked in practice; notable exceptions are John Coles (1962; 1973) and Barry Molloy (2004; forthcoming). The basis for our understanding relies first of all on assumptions about how swords could have been used, and from handling the weapons, or reconstructions thereof. In this, the experience of fencers is important, but modern fencing foils are quite different from traditional broad-bladed swords and the techniques of fighting must also differ very considerably. Most people have experienced sword-fighting only vicariously, on stage or screen, and there are lessons to be learnt from those who enact such reconstructions – bearing in mind that the aim of such activities is to present only a similitude of real combat, rather than a genuine fight with intent to cause harm.

A second source of evidence is that for use wear in the form of edge damage or wear on hilt decoration; and related to this are the indications of resharpening following damage.

It has long been supposed that relatively long thin-bladed weapons must have been used for thrusting blows, and that broader-bladed ones were more versatile, being capable of use for cutting or slashing as well as thrusting. This view has been propounded by many authorities, for instance Gordon (1953), and more recently Bridgford (1997); the discussion in Britain goes back to Brewis (1923: 255 ff.), who was the first to use the terms “cut-and-thrust” and “slashing” when applied to Bronze Age swords, terms that have since become commonplace. It has been common practice to take Aegean swords as indicating how the weapons were used in actual fighting, because of the depictions on high-status art of palace-period Crete and Shaft Grave Mycenae. In fact, the indications from these depictions are ambiguous in the extreme, showing rapier-like weapons being used in fencing duels as if to deliver cutting blows; and experimental combat by staff from the Royal Armouries has also suggested that rapiers were in fact ideal weapons for hand-to-hand combat (Davis 2006: 95–7). In practice, the Bronze Age swordsman probably used his weapon in whatever way brought most tangible rewards in terms of wounds to the opponent.

Barry Molloy’s extensive series of experiments have shed much light on how swords were wielded. Testing them on straw targets, replica body-armour, and the body of a recently slaughtered pig, he has assembled a large amount of information on the effectiveness and probable method of use of various types of Bronze Age sword (Molloy forthcoming; cf too Peatfield 1999). The reader is referred to the publication of his highly detailed results; the main conclusions

may be quoted here. From the Middle Bronze Age on, the weapons were capable of cutting through straw mats, and the sinew and muscle of the pig, though not through armour. Thrusting blows, on the other hand, were very effective. Molloy concluded that particular types of blow, delivered from elbow and shoulder, were most effective, particularly for slicing blows. The advent of stouter, leaf-shaped blades in the Late Bronze Age, with curved edges, allowed the blade to bite deeper, and provided better “structural integrity at the centre of percussion than a straight edged blade of similar length, by reducing flexibility while retaining a thin blade cross-section”.

Damage and resharpening

At this point we must enter another long-standing debate, the nature of damage to swords and the extent to which they were resharpened. It is not difficult to find examples of both solid-hilted and grip-tongue swords with substantial edge damage (Fig. 16). Sometimes this takes the form of mild battering and may be hard to discern if the condition of the weapon is poor; but in some instances deep nicks or notches are present that can only have been caused by the blade being struck against another sharp object, almost certainly another sword. British examples may be seen on several pieces from the Blackmoor hoard, on swords from southern rivers, that from Marston St Lawrence, and a number of others (Burgess – Colquhoun 1988: Plates 41 nos 261–2, 42 no. 268, 43 no. 276, 44 no. 278, 51 no. 317, 59 no. 393 etc.). Irish examples have been noted by Bridgford (1997: 110 ff.),¹³ while good continental cases are also discernible – if not frequently, to judge from the published illustrations (Schauer 1971a: Taf. 55 no. 377 (Töging a. Inn); Taf. 61 no. 414 (Lindau); Taf. 68 no. 464); Wüstemann 2004: Taf. 31 nos 212, 214, Taf. 32 no. 217, Taf. 63 no. 440, Taf. 66 no. 461 etc.). Many of the swords illustrated by Schauer have some kind of edge damage but few are shown as having notching. A full analysis, which might necessitate revisiting the weapons *in corpore*, is needed to answer these questions definitively.

Not all swords, or sword types, are equally worn or damaged. It has been stated, for instance, that solid-hilted swords (*Vollgriffschwerter*) tend to be less heavily used than flange-hilted swords (*Griffzungenschwerter*); indeed they were quite often not used at all, to judge from the lack of edge damage. Kristiansen,

¹³ Unfortunately the illustrations in EOGAN 1965 are not of sufficient quality to enable one to be sure that the damage shown is real edge-notching as opposed to some other kind of damage.



Fig. 16. British Bronze Age swords showing edge damage.

Source: BURGESS – COLQUHOUN 1988

in an admittedly small sample, has provided figures which appear to show that in Periods II and III of the Nordic Bronze Age 65–70% of *Vollgriffschwerter* had not been resharpened at all and only 10% or less heavily resharpened; sharpening being taken as an indication of heavy use (Kristiansen 1984). Inspection of

published drawings of a wider sample of European swords than those studied by Kristiansen shows that plenty of *Vollgriffschwerter* suffered edge damage or breakage at the tip, which can only have come from similar use to that of *Griffzungenschwerter*, presumably use in combat.

The state of swords upon deposition is surely an important matter, though hard to assess from publications alone (whatever the quality of the illustrations), and not easy even with the weapon in one's hands. It is striking how many swords were heavily damaged, if not actually broken into pieces. The blade tips are not infrequently broken off; on Hungarian *Griffzungenschwerter* and *Griffplattenschwerter* eighteen examples are evident (Kemenczei 1988); on Hungarian *Vollgriffschwerter* around 50 out of 271 swords have the tip missing (Kemenczei 1991); while of 470 swords in Romania, 21 have missing tips (Bader 1991). Sometimes only blade fragments or very incomplete weapons occur, even when the find circumstances indicate no particular post-depositional factors that could have caused such damage. These factors certainly suggest that the deposition of swords occurred at defined moments in the lifetime of the weapons and was rarely a matter of chance.

There are several ways in which damage might have occurred on swords prior to deposition. These might include: blows delivered or received during actual fighting; intentional breakage or bending of a weapon at the moment considered to represent the end of its life; and resharpening or other manipulation, intended to improve or modify the effectiveness of the weapon. Unfortunately where the depositional, post-depositional or post-recovery environment has not been favourable it is often difficult to discern which of these factors, if any, was responsible for the state of a sword.

It is not only edge or tip damage, however, which indicates use wear: even after the adoption of the integral hilt the point of attachment of hilt to blade was a weak spot where breakages could occur if lateral force was applied to the weapon. It is quite common for swords to have broken rivet holes or snapped off hilts, especially in the earlier stages of development, and Bridgford has also noted that blades on Irish swords broke either at the tip or above the widest part of the blade on leaf-shaped weapons (cf Bridgford 1997: 106).

Notching on the edges of sword blades can realistically only have taken place as a result of one blade being struck hard against another, presumably during a sword fight. Duelling or fencing with swords is a mixture of attack and defence. If the object of the exercise was initially to cause damage to muscles or soft tissue by cutting or slashing, the trained swordsman would have been careful to parry

such blows by deft use of the shield (assuming that he usually carried one) and by the opposing motion of the sword, meeting edge with edge. Some of the damage could have occurred during practice sessions, and not all fighting need have been “serious”, with intended mortal consequences; but since considerable force is needed to cause an edge notch 2–3 mm deep, as is sometimes seen, the blows can hardly have been casual. More experimental reconstructions of blows with swords are needed to confirm the extent to which the edge damage that occurs really is the consequence of sword-on-sword contact.

In the Irish context, Bridgford states (1997: 106) that over 90% of the 144 swords she studied (8 of the 153 were forgeries) have some form of edge damage or notching.¹⁴ Although exact figures are not provided, it also appears that some types were more liable to have such damage than others; in this instance, Eogan’s Class 4 (the Ewart Park type in Britain) is significantly more likely to show damage than Class 5 (Gündlingen). Comparable work has not been done on British swords, but visual inspection of high-quality drawings in Burgess – Colquhoun (1988) suggests that there is little difference between these two classes in Britain in terms of edge damage – though it is certainly the case that Ewart Park swords are much more likely to turn up in hoards as broken pieces than Gündlingen swords. This, however, is almost certainly a matter of practice relating to the fate of bronzes in these parts of the Late Bronze and Early Iron Ages, and does not relate to use in combat.

With Irish dirks and rapiers, on the other hand, the wear varies considerably according to class (Bourke 2001: 99 ff.). Comparable work has not been done on British weapons, and the available published drawings do not seem a reliable guide to judging the degree of edge wear on the different classes. A common feature to all such weapons, though, is the prevalence of damage to the butt, where the weapon has broken from its handle at the rivet line.

Damaged swords were resharpened or mended, depending on the degree of damage and the ease with which they might be filed, ground or hammered away, or new parts cast on. One may suppose that the degree of resharpening or mending is an indication of the amount of damage a sword received in its lifetime, and possibly therefore of the amount of combat it saw, assuming that a weapon would be sharpened after each use. Heavily ground down blade edges would therefore

¹⁴ This figure is misrepresented by BOURKE (2001: 110), who states that “over 70% [of the swords studied by Bridgford] had incurred little edge notching”, citing BRIDGFORD 1997: 109–10 Fig. 10. This figure actually refers only to swords deposited in rivers, while the reference to Bridgford’s Fig. 10 should be Fig. 13.

indicate much use; blades in pristine condition little or none. K. Kristiansen has devoted attention to this matter, initially with Danish swords and more recently with Hungarian (Kristiansen 1977; 1984; 2002). The critical factor is the profile of the cross-section of the blade: the more angular the descent from midrib to edge, the more the weapon has been sharpened. As a general principle this seems acceptable; but it does not take into account the fact that weapons were originally made with different cross-sections, and on those with a high angular midrib the procedure may be suspect; equally, not all blades had ribs or channels, and their absence does not necessarily mean that they have been sharpened away.

Nevertheless, Kristiansen has shown that certain periods of the Bronze Age saw more sword resharpening than others, and thus arguably more combat; this applies also to wear on ornaments, which is taken as indicating that they were used for longer because new metal was not available (Kristiansen 1977). Thus Zealand and western Jutland were dominated by unworn and unresharpened swords, both in Period II and in Period III, while northern Jutland had few pristine objects in Period II. In Period III, however, there was a remarkable change in this part of Denmark: north-east Jutland saw a rise in the proportion of unworn swords to around 50%, while north-west Jutland saw the proportion of unworn swords decline to 15% or less, and heavily worn swords increase to around 70%. This suggests that people in some areas used their swords more, or for a longer time – there being two possible reasons for more wear on swords: more combat, or less metal being available to make new swords. Whether this really reflects differential social conditions, in other words increased aggression at some periods, is a matter of debate.

Repair to swords can be seen in other ways. A sword from Rumin near Sinj in Croatia was cleverly mended by sawing through the midrib, filing the ribs down and inserting a rivet that was then hammered flat to fill the void created (Harding 1995: 34 Taf. 11, 73). Unfortunately this was not the end of the story, as the sword then broke (or was broken) again.

While some swords are damaged, others are in good, sometimes pristine, condition. This in itself is an important indicator of the use and function of swords. Our modern assumption is that a sword must have been created to be used in combat, and while this clearly happened, it does not mean that it was the intended fate of all swords. A warrior might die before he had used his sword, even on its first outing; it might therefore be buried with him intact and unused. But as we shall see, swords in many areas were hardly ever placed in burials: it

is in hoards that they occur, and depositing an intact sword (or other weapon) in a bog or river demands alternative explanations.

Use and frequency: conclusions

From the above it is evident that there was no one way in which swords were used in Bronze Age Europe. The way in which they were used, and thus their function, varied over time and space. From a beginning where swords were rare objects, highly decorated and presumably intended more for prestige than anything else, they became during the Middle Bronze Age a regular accompaniment of warrior burial. But by far the largest number of swords occur in the Late Bronze Age, and here the evidence is clear that swords played different roles in different places. In particular, the way in which they were deposited in graves in the Nordic area, as opposed to deposition in hoards in more southerly parts, brings a strong suggestion that they were seen as an inalienable part of what it meant to be a warrior in the Bronze Age North, and that their presence is an indicator of rather specific social relations. Marking out the warrior thus differed from place to place; and so did sword biographies. This matter forms our next concern.

Chapter 8.

Ritual combat and weapon deposition

While swords and other weapons were potentially or actually deadly in their effects, there are many grounds for believing that not all combat was of a nature that involved fights to the death. Indeed, many aspects of the archaeological record for the Bronze Age suggest that ritual, i.e. non-utilitarian, functions were often primary.

Rock art and warfare

The many depictions of men bearing weapons, apparently engaged in acts of aggression, on the rock art panels of northern Europe, particularly Sweden, provide an extraordinary corpus of information about Bronze Age life. These depictions can be used to provide information both about the persona of the warrior, and about what the men were actually doing. In this chapter I will consider the nature of the actions that may be depicted; and in this task information will be introduced from other types of evidence that bear on the matter.

The analyses of Nordbladh, Malmer, Coles and others have considered these matters in detail, and specifically the numbers of human figures depicted in relation to other types of figure. Ignoring cupmarks, which are far and away the commonest motifs on the art, boats tend to form the next largest category; and after that, human figures. Nordbladh (1989: 326) provided figures of 458 sites in Kville hundred, giving 698 “delimited images”; disregarding sites with cupmarks only, 72% of the images have ships and 30% human figures.¹⁵ Many of the images on these panels are iconic, almost symbols of the Bronze Age;¹⁶ some of those that depict humans show men carrying or brandishing spears, axes, or what appear to be clubs, or drawing the string of a loaded bow; frequently they wear a sword-sheath at the waist. Even isolated or individual figures in such

¹⁵ These figures, emanating from the fundamental publication by Åke FREDSJÖ *et al.* (1971), should be regarded as provisional, only able to provide relative totals, as the fieldwork of John M. Coles and colleagues in several areas of Sweden has shown that many art panels remain to be discovered.

¹⁶ It was mainly for this reason that the Council of Europe chose the Bronze Age to be subject of its popularising campaign of the middle 1990s (“The Bronze Age: Europe’s first Golden Age”).

poses raise interesting questions about what they are doing, and why; but the paired or grouped figures that occur sometimes, apparently waving their weapons at each other, are more interesting still since these seem to be engaged in acts of aggression. Some of the most famous of these are standing in boats, usually facing each other, but on occasion facing the same way. One might think, therefore, that these figures represent for us the visible evidence of Bronze Age warfare, war as it was happening; but a pause for thought is necessary.

Among the many problems associated with this art is that of identifying which images were created simultaneously, i.e. as part of a scene intended to be viewed together. There are instances where close examination of the figures shows that superpositions occur, or one was created later than another; so that the artist's original intention was not to depict a scene but to show an individual figure. Subsequently that artist, or another, decided to add further figures, but whether with the intention of seeing the figures as part of a depiction of unified action is hard to say. Taking the art as a whole, it seems likely that on many panels figures (for instance of ships or animals) were added periodically over an extended period (whether months, years, decades or longer is impossible to determine). The implication for an interpretation of the warrior figures is that in many instances we cannot say whether a real fight is taking place, or whether figures have merely been added successively to a panel, giving the appearance of a fight.

But in the case of those figures seen brandishing their weapons on boats there can be little doubt that the whole – ship, oarsmen, and warriors – were from the start intended to form a composite depiction, showing a real scene, or rather a scene of potential action as it occurred in the Bronze Age (*Fig. 17*). For the figures are too unspecific, one would think, for real individuals to be meant – though it cannot be excluded that the artist did have it in mind to depict specific people, and it was merely the limitations of the art style that prevented him or her from making each individual separately identifiable. But it is more likely that what is shown is a generic scene of combat between two (or sometimes more) men, not one specific occasion. If that is the case, it would appear that such combat was a regular feature of Bronze Age life in south Scandinavia.

But what exactly are the figures doing? Not all the humans bear arms, of course; there are a number of depictions of men blowing horns (lurs), though they usually wear a sword at the waist as well. And there are other indications that this was no common-or-garden squabble, no depiction of a real battle between warring groups. The brandished weapons never seem actually to be striking the opponent,

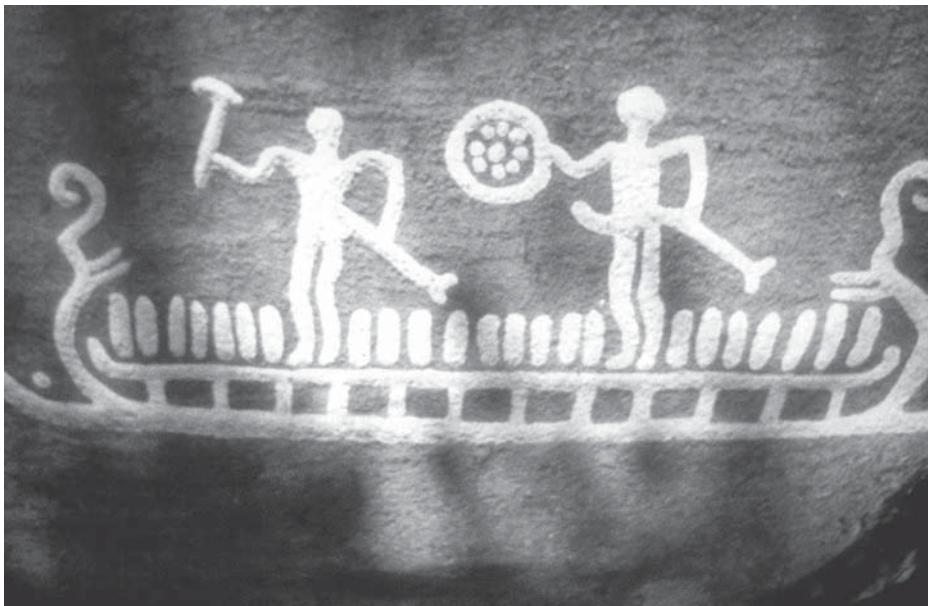


Fig. 17. Rock art from Svenneby, Bohuslän, western Sweden, showing shield and sword-bearing warriors. Photo: courtesy Vitlycke Museum.

just waved in the air. Swords are implied by the scabbards that are frequently depicted hanging at the waist, but swords themselves are rarely depicted, and never in action. Vanquished or dead victims are not shown, as happens in the art of many other cultures. And the men are usually phallic. Why? Presumably not because they fought battles in that state; apart from the obvious discomfort and impracticality, one would think it would be physically impossible to sustain such a state during combat (it seems unlikely that experimental archaeology will come to our aid in this instance). In other words, the depictions are stylised, not real; of course men may have paraded themselves in a phallic state at times, but they can hardly have gone through life in a permanent state of arousal. These are therefore idealised scenes, showing what might have happened, or, in an ideal world as imagined by the artist, what ought to have happened. The warriors might be imaginary figures, or at least men of superhuman strength and fighting ability, who could wield enormous weapons, on land or on board ship, and at the same time parade their sexual prowess. A connexion between virility and martial prowess is enough of a commonplace for us not to need to question it in these depictions.

It is therefore clear that what are shown are scenes of idealised combat between warriors of strength and ability, and that such combat formed a regular part of life in south Scandinavia in the Bronze Age. A man might be expected to bear arms, and on occasion to engage in fighting with other men. But this is not the sort of fighting that can be reconstructed from other forms of evidence, such as I discuss below in connection with war bands and raiding. It was probably staged or parade-ground fighting in which men might test their strength and their arms against opponents of comparable standing. It does not look as if this is war; merely combat. It was a regular part of what it involved to be a man in Bronze Age Sweden.

In this context it is worth recalling the small bronze figurines of Sardinia, which provide a rich repertoire of human depictions, not all martial in nature (above, p. 80). The function of these figurines is far from clear, and the information they provide in the context of warfare relates mostly to the arms and armour they are carrying (which include swords, spears, bows and arrows, shields, helmets and greaves: *Fig. 7*). Some figures appear to be shepherds or similar, but equally some have a distinctly martial appearance and may represent chieftains or other warriors prepared for combat.

Parade armour

This conclusion may be placed alongside the evidence, partially introduced above, for arms and armour that was intended for other than military purposes. It falls into three main categories: weapons that were potentially functional but because of their elaborate decoration or flimsy construction more likely to have served a purpose on the parade-ground; weapons that were intentionally oversize, impossible to wield effectively; and armour that would not have served a purpose as warding off blows from swords or axes or thrusts from spears or arrows.

Swords with elaborate decoration would include those of Apa-Hajdúsámos type, the earliest swords in Europe and with their short handles and broad blades seemingly unsuitable for actual combat (*Fig. 6*). One is reminded too of the elaborately decorated and hilted swords of the early Mycenaean period, as in the tholos tomb at Dendra (Persson 1931: 34 ff., Plates XX–XXII, XXIV), or the Shaft Graves of Mycenae; many comparable examples come from the rich tombs of Late Helladic I–IIIA. There are numerous spearheads with elaborate geometric decoration round the basal ring; those from Borodino are perhaps the most famous examples, but as these are of silver, and occur in a hoard of prestige objects, they are obvious candidates for inclusion in the “non-functional” category (Bočkarev 1968; Popova

n.d.; most recently: Kaiser 1997). More prosaic examples can be seen in examples from the Nordic area (Jacob-Friesen 1967: *passim*, esp. 262 ff.).

Among the non-functional weapons, I have already mentioned the oversize axes found in Scandinavia and elsewhere (and probably depicted on the rock art: Coles 2005: 79) (above p. 79). Van Impe – Verlaeckt (1992) published a large ceremonial axe allegedly found in the gravels of the river Maas, 41.7 cm long and weighing and estimated 4.8 kg. This extraordinary piece finds close parallels in Scandinavia, for instance the massive cult axe from Bredebækgård in North Zealand (Kaul 2001) or that from Djernæs on Funen (Jensen 1978), and is almost certainly an import from Denmark (Fig. 18).

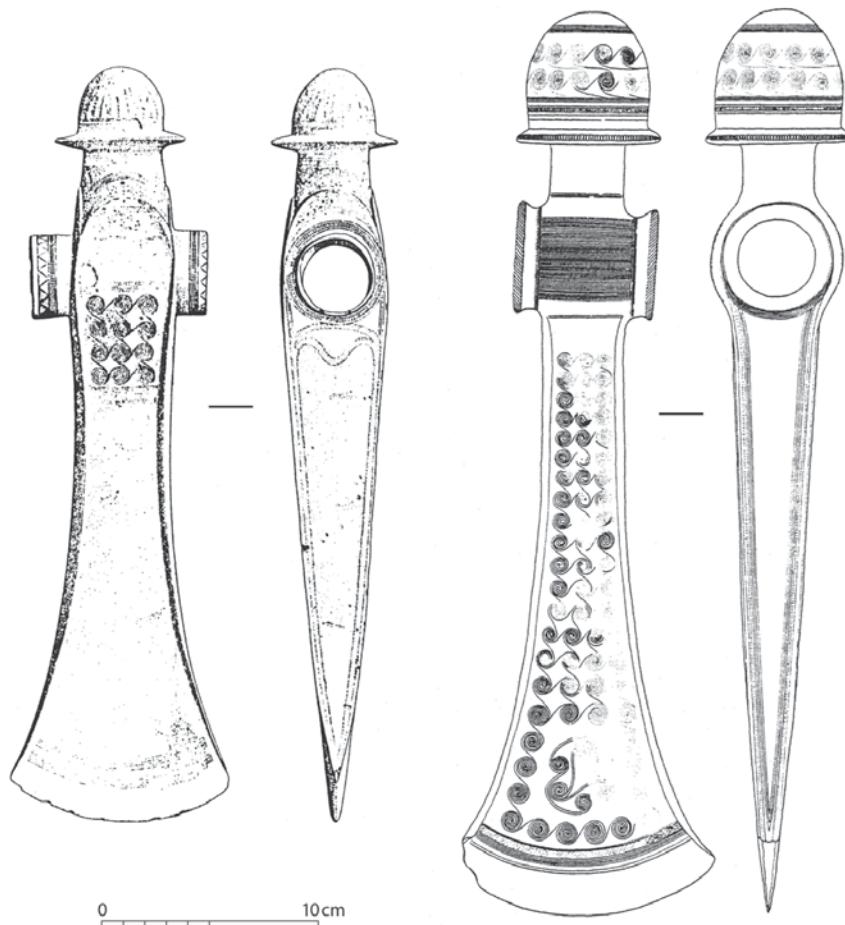


Fig. 18. Massive bronze axes from Djernæs (Funen) and the Maas valley near Maaseik, Belgium. Source: JENSEN 1978; VAN IMPE – VERLAECKT 1992.

The enormous dirks of Plougescant-Ommerschans type, of which several examples are known in western Europe, also deserve mention in this context (Fig. 19) (Butler – Bakker 1961; Butler – Sarfatij 1971; Needham 1990; Fontijn 2001). Massive spearheads include the case of Wandle Park, measuring over 79.8 cm long (Needham 1990: 249 Fig. 4), or the piece from Orbe, southwest of Lake Neuchâtel (Tarot 2000: 86, Taf. 37, no. 460), measuring 65.1 cm in length; and there are also examples of ceremonial rapiers, with no rivets and no sharpening (Needham's (1990) Caistor St Edmunds-Melle series). Such pieces seem much too large for effective use in fighting. If they cannot be explained as part of a warrior's fighting equipment, they must have been for show, not functionality.

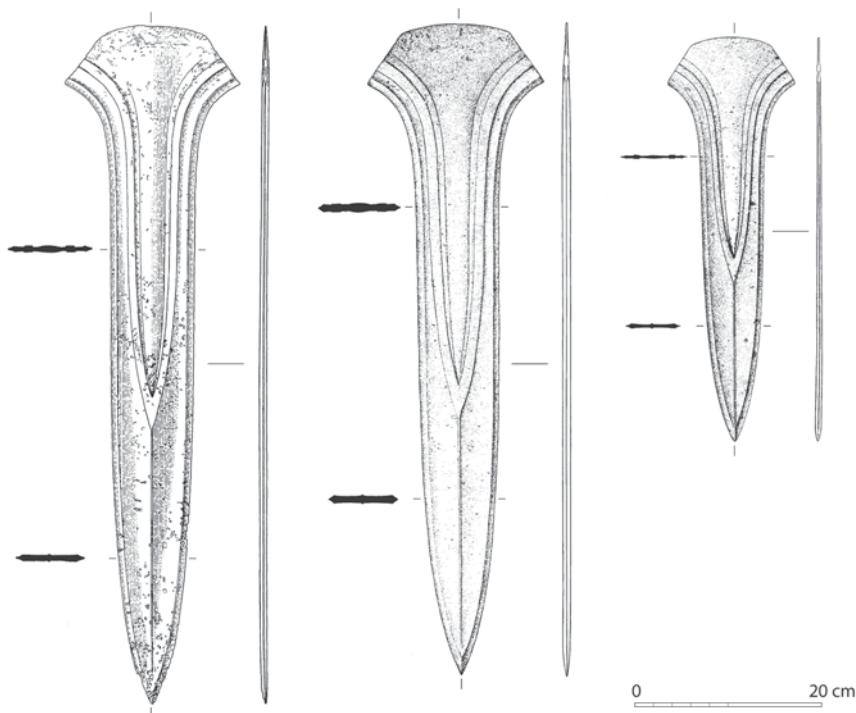


Fig. 19. Massive dirks from western Europe: Oxborough, Norfolk (left), Ommerschans, Overijssel (centre) and Jutphaas, Utrecht (right). Source: FONTIJN 2001 (after NEEDHAM 1990; BUTLER – BAKKER 1961; BUTLER – SARFATIJ 1971).

But it is armour that perhaps tells the clearest story. Most surviving armour is of sheet bronze, as discussed above (p. 79). But a few leather shields are known from Ireland, and clearly items made of such organic materials must once have

been common, accounting for body-armour as well; only helmets might have been more difficult to make out of leather or hide. Wooden shields are plausibly reconstructed from warrior graves of the Urnfield period where bronze bosses and studs occur (e.g. Haguenau, Kr. Regensburg: Schauer 1980: 227 ff., Abb. 11–12).

Some shields did see action: for example, those from Long Wittenham (Oxfordshire) and Plzeň have holes that appear to have come from spear points (Needham 1979: 113–4 Fig. 2; Schauer 1980: Taf. 11).¹⁷ Kristiansen (2002: 327–8 Fig. 6) has suggested that dents on the Hajdubőszőrmény helmets are the result of damage in combat, though he provides no reasons for excluding that this is not simply depositional or post-depositional damage. There is too little body armour for a detailed study of damage to be conclusive. But the thinness of the metal used for sheet bronze armour (in the case of the Fillinges cuirasses ranging from 0.5 to 1.1 mm and in the case of the shields studied by Needham between 1 and 1.5 mm) has suggested to many students of the Bronze Age that sheet metal would have been ineffective in real fighting, unless the bronze was backed by leather (as has recently been suggested for the armour from Pila del Brancon (Nogara, Verona), on the basis that the rivets that fastened the sheets of bronze together were considerably longer than merely two thicknesses of bronze sheet: Jankovits 1999/2000, 195). The well-known experiments by John Coles (1962) were conclusive in showing that leather (or wood) would have been much more effective in warding off blows from sword or spear; indeed, that sheet metal was easily cut through by a determined swordsman. More recently, however, Barry Molloy (2006 and forthcoming) has carried out more experiments in which he has tested swords on a variety of targets, including bronze shields, and suggested that the shields would have provided a very considerable degree of protection. So far these divergent opinions have not been reconciled, and until Molloy's evidence is fully published it is hard to make a judgement. Uckelmann (2004–5; 2005) is also of the opinion that the shields had a function, but were not capable of withstanding strong blows from a sword – so that function was not that of serious protection for the warrior in battle. Certainly the armour from Pila del Brancon seems too thin to have represented effective protection.

The only experiments that have been done on other items of armour have been conducted by Tom Hulit – Thom Richardson (forthcoming) on scale armour

¹⁷ A shield from Barry Beg on display in a temporary display in the Ulster Museum, Belfast, in 2003–4 also had significant damage, but I have been unable to find out any details of the find.

of Near Eastern and Egyptian type, made of both rawhide and bronze, and a composite of the two. Hulit's filmed experiments demonstrated how arrows fired at such targets had variable success in penetrating them; rawhide alone was unexpectedly less effective than the composite scale armour, and may have allowed fatal injuries to result.¹⁸

Sheet bronze, however, is most unlikely ever to have provided any significant degree of protection in serious fighting, if an opponent was determined to strike at particularly vulnerable parts of the body, such as the neck, the tendons at the back of the knee, or the Achilles tendon. This remains to be tested. The indications still are, therefore, that the sheet bronze armour which survives from the Bronze Age (including the magnificent cuirasses of the Late Bronze Age, such as the often-illustrated piece from Marmesses or those from Fillinges, Haute Savoie: Schauer 1978) was not intended primarily for use in real combat. Instead, it was for display, for parade, to impress, and for striking fear into the heart of an opponent, just as Achilles' shield did (*Iliad XVI*), allied to the war-cry with which he was able to frighten his Trojan opponents without ever leaving the Greek camp. It is in this context that we should see the parade armour of Bronze Age Europe.

I have presented this reconstruction as if it were static and unchanging over the 1500-year course of the Bronze Age, but of course this was not the case. The sword changed over that time, and presumably therefore so did the method of fighting. Molloy's experiments have provided clear indications that as the weapons changed so did the way in which they were used. Armour to defend oneself against an opponent must therefore have changed as well, though this is hard to discern, not least because it seems not to have been used at all until the Urnfield period. Perhaps there are suggestions in the development of the armour to protect the trunk: the cuirass or corslet. While nothing like the famous suit of armour from Dendra is known from continental Europe, nor are there certain examples of composite plate armour such as Tutankhamun had in his tomb and are depicted in Egyptian tomb paintings, it remains plausible that bronze discs ("phalerae") were attached to a leather backing and served as perfectly functional armour (v. Merhart 1954), and these could have had a long life. v. Merhart and later Schauer (1978) have provided detailed discussions of when and where armour might have developed in Bronze Age Europe and apart from the Pila del Brancon hoard few new finds of any significance have changed matters since

¹⁸ I am grateful to Tom Hulit for allowing me to cite these experiments from his PhD work in advance of publication.

that time (recent finds from the Carpathian Basin, including a corslet from the bed of the Danube in Hungary, are reviewed by Jankovits 1999/2000). Thus the fragments that were used to reconstruct the corslet from Čaka in south-west Slovakia (Točík – Paulík 1960), along with a few other finds from the Carpathian Basin, remain the earliest examples of armour known, the earliest dating to Bz D.¹⁹ The magnificent parade pieces like Fillinges, on the other hand, fall at the end of the Urnfield period or the beginning of the Early Iron Age (Bz B3-C: Schauer 1978). The stages in between cannot be reconstructed with any certainty, which is not to say that none occurred. Reconstructing them, however, is more likely to be possible through a study of grave assemblages than simply through the armour itself – which in general is too scanty in number, and often too poorly known in terms of find context, for much progress to be made.

The deposition of armour

A further significance attaches to this sheet metal armour: its place of deposition. It has been shown on several occasions that there is a preferential deposition in wet places for at least some categories of object. This particularly applies to shields, as Uckelmann has recently emphasised (2004–5), but at least some helmets also turned up not, as one might expect, in graves but in hoards or wet places (e.g. the Viksø helmets: Norling-Christensen 1946; cf Hencken 1971: Fig. 1). Shields especially are found deposited in spots where it seems unlikely or impossible that they could have been recovered, in rivers, lakes or bogs. The extraordinary discovery of sixteen shields of Herzsprung type from Fröslunda, on the southern edge of Lake Vänern in central Sweden, is a striking example of this (Hagberg 1988; 1994); a further point of importance about this find is that several different decorative schemes are represented. But the more recent discovery of a shield in the uppermost levels of a ditch just outside South Cadbury hillfort is perhaps stranger (Coles *et al.* 1999; 2000), since this was not demonstrably a wet place, nor was it a grave, nor a hoard; and it had apparently been subjected to intentional damage, perhaps the driving through of a stake, after or during deposition. Even

¹⁹ The date of Br D, set at 1300–1200 by MÜLLER-KARPE in 1959 and accepted by most authorities since that time, has recently been the subject of considerable discussion. DELLA CASA – FISCHER (1997) suggested on the basis of radiocarbon dates from the Swiss site of Neftenbach that the period should fall in the fourteenth century BC; while a series of dates from Velim, Czech Republic, that should date the Br C-D transition tend to fall around 1400 cal BC (HARDING *et al.* 2007).

body armour occurs in rivers, as with the cuirass from Saint Germain du Plain (v. Merhart 1954: 169), that from the Pila del Brancon hoard, or a new find from the Danube in Hungary (Jankovits 1999/2000).

One might expect that corslets, greaves or helmets would turn up actually in the graves of the warriors who wore them, and in some cases this was in fact the case as with the Torre Galli greaves or those from Ilijak on the Glasinac plateau (v. Merhart 1956–7; Clausing 2002: 166–9). At least some, or parts of them, occur in hoards, however, without any particular martial connections. This raises problems of interpretation. The Fröslunda shields might well be explained as the discarded or sacrificed remains of a warrior troop; individual shields or helmets found in bogs are equally certainly not the result of chance deposition but something intentional, something marking the end of the object's use life; an offering or ritual deposit if one prefers. When such an object appears in a mixed hoard, however, that is something different, and must be connected with the explanation that would account for hoarding in a more general sense.

There is thus a strong case for arguing that a large part of the surviving Bronze Age armour emanated from a context of ritual deposition. What, then, can be said for weaponry?

Weapons were also frequently deposited in wet places, notably bogs, rivers, streams and lakes. (One might suppose that they could also have been thrown into the sea, though certain evidence for this is lacking.) Weapons were not the only items thus deposited, so the interpretation of the phenomenon is only one part of a wider study of why people threw bronzes into places where they could not easily be recovered, if at all. It has been suggested that such metalwork was not in fact permanently inaccessible (Randsborg 2002). While this may be true in principle, it is hard to believe that people did actually recover them, especially if they had been thrown into bogs or deep and fast-flowing rivers such as the Rhine.

A number of studies have presented statistics on this phenomenon, which can serve as a basis for analysis. Unfortunately a more detailed analysis can only realistically be done for swords, where there is a largely complete modern picture of the distribution which can be backed up by actual statistics; without comparable figures for spearheads and other items, it is hard to make acceptable comparisons between different weapon types.

Sword deposition contexts

These weapons were deposited in three main context types: graves, hoards and wet places. Especially in the case of swords, many finds when discovered were isolated, without accompanying objects or in recognisable archaeological contexts. It has long been a matter of discussion whether such finds were accidental losses in antiquity, parts of unrecognised larger deposits, or intentional depositions of single objects of the same general type as ritual hoards. Probably all three are represented in the finds corpus, but there are good grounds for believing that most such finds were not a matter of chance. While a single agricultural or carpentry implement might plausibly be the subject of accidental loss in the field or workshop, it is much harder to imagine a warrior losing a sword, or if he did lose it, not making strenuous efforts to recover it. It is true that some swords were buried in graves, and others may emanate from graves where the bones did not survive or were not recorded; but this can surely only account for a minority of finds. In all likelihood, most single sword finds were deposited like that.

Weaponry has often been recovered from rivers, sometimes by being washed up on river banks, by diving, but more usually during dredging. Whether deposition in a river or stream is essentially the same as that in a bog is not clear; it may simply be that it has been easier to find objects in rivers – which, unlike bog finds, might not have sunk far into the river bed. The classic study by Torbrügge (1970–71) can be supplemented by many other finds, old and new (e.g. Mozsolics 1975; Bartík – Trugly 2006 etc; full list of references in Harding 2000: 329–330). For instance a deposit of bronzes recovered since 1972 from an old channel of the Rhine at Roxheim, near Ludwigshafen (Rheinpfalz), consists of no less than 412 pieces, among them 27 swords and 33 spearheads (as well as 100 pins, 49 small rings, a helmet fragment etc) (Sperber 2006a, 2006b). The weapons are particularly interesting as they include a large proportion of western “Atlantic” types as well as central “Urnfield” ones, and date to a late (though not the latest) part of the Bronze Age.

The circumstances surrounding spearhead deposition are rather more complex. They incorporate a smaller amount of metal and were used in battle in a different way from swords, to the extent that we cannot tell if a spearman was an elite warrior or not. It is conceivable that thrown spearheads that missed their target were not always recovered from the spot where they landed, perhaps because they became detached from their shaft and were buried in the ground.

Held spears, on the other hand, seem much less likely to have been the subject of accidental loss, for the same reasons that apply to swords.

While swords were presumably intended in the first instance as weapons for combat, in practice their archaeological findspots leave considerable room for doubt that this was all they did. If the sword designated a warrior and was his normal accoutrement, then one might expect that significant numbers of buried people would possess them. This is strikingly not the case. Numbers vary very considerably across Europe and figures can only be taken as guidelines, since taphonomic and recovery factors will have influenced the figures, but some tentative conclusions are possible.

From the various PBF volumes it is possible to estimate the numbers of swords that may be attributed to different deposition categories. Striking differences are apparent between these categories, as is particularly evident for Britain (*Table 4*).

Table 4. Sword deposition contexts in Britain (Source: BURGESS – COLQUHOUN 1988)

Context	No.	%	% excluding unknowns
Water	213	27.7	33.0
Hoard	260	33.8	40.2
Single	167	21.7	25.9
Burials	3	0.4	0.5
Cave	2	0.3	0.3
Settlement	1	0.1	0.15
Unknown	123	16.0	0
Total	769	100.0	100.05

Let us look at these statistics in a little more detail. First, the bald figures presented here do not take any account of differences in period. *Table 5* therefore breaks these statistics down into phases.

Some figures in these statistics are striking. If one compares the relative percentage representation of wet finds and hoards through time, there appears to be an inverse relationship: wet finds become gradually less important through the Bronze Age, and hoard finds more important. In the Early Iron Age, however, there is a strong reversion to deposition in wet places with virtually no swords appearing in hoards.

Table 5. British sword find contexts by phase (Source: BURGESS – COLQUHOUN 1988)†

Phase	Total in phase	Wet	% of total in phase	Hoard	% of total in phase	Single	% of total in phase	Other	% of total in phase
pre-Wilburton	146	91	62.3	15	10.3	27	18.5	18	12.3
Wilburton	115	36	31.3	38	33.0	27	23.5	15	13.0
Ewart Park	421	84	19.9	153*	36.3	110	26.1	81	19.2
Carps Tongue	27	4	14.8	18	66.7	4	14.8	2	7.4
Hallstatt	55	29	52.7	1	1.8	8	14.5	13	23.6
Total	764	244	31.9	225	29.5	176	23.0	129	16.9

† Figures in this table do not correspond exactly to those in *Table 4* because of uncertainties regarding type attribution or context

* 28 further hoards also contain blade fragments of Ewart Park swords

Some care needs to be exercised with these figures, since the numbers of swords by phase are so disproportionate. Thus the 27 swords of Carps Tongue type represent a very small sample, though the 18 examples in hoards might be thought a fair indication of the tendency to hoard deposition in that latest phase of the Bronze Age. By contrast, the very large numbers of Ewart Park swords should provide fairly reliable information, though even here the number of single finds and those with no provenance indicates that there is much we do not know. The relatively large number of finds without more precise indications of context are in any case a warning that such figures should be treated with caution.

For Ireland, Bourke has calculated statistics based on the original study of swords by Eogan (*Table 6*).

Table 6. Sword deposition contexts in Ireland (Source: BOURKE 2001; EOGAN 1965).

Context	No.	%
Rivers	64	
Lakes	14	
Bogs	48	
Other wet	43	
Subtotal wet	169	46.8
Other/unknown	192	53.2
Total	361	100.0

The statistics for Ireland are particularly skewed, as with all Irish Bronze Age metal finds, because such a large proportion have no known provenance, or

only a provenance to county.²⁰ This has the unfortunate effect of allowing less confidence in the figures, though it need not invalidate them completely.

Relatively few Irish swords are known to come from collective finds (hoards); this does not of course mean that they were not originally part of hoards, merely that they were recovered singly.

The recent analysis by Regine Maraszek (2006: 166 ff.) has charted the occurrence of swords in hoards of north and north-west Europe, from which it can be seen that in these regions the number of swords in “sword hoards” is generally very small; the commonest number of swords in a British-Irish hoard is two, the maximum four; in north Europe numbers are also between two and four, with a single example containing six, two each of three different types (Bothenheiligen, Thuringia). Perhaps not surprisingly, there is a strong correlation with the commonest types of sword (in Britain the Ewart Park type), but more surprising is the fact that in the British Isles almost all sword hoards come from Scotland and Ireland.

Turning to central Europe, inspection of the relevant PBF volumes for south Germany, Austria and Switzerland reveals the following statistics:

Table 7. Deposition contexts of bronze swords in southern Germany, Austria and Switzerland (Source: SCHAUER 1971a; KRÄMER 1985; v. QUILLFELDT 1995).

A. Griffzungenschwerter	No.	%	% excluding unknown
Wet places	131	21.3	24.7
Hoards	36	5.9	6.8
Single	132	21.5	24.9
Burials	213	34.7	40.1
Settlements*	19	3.1	3.6
Unknown	83	13.5	0
Total	614	100	100.1

B. Vollgriffschwerter	No.	%	% excluding unknown
Wet places	155	32.8	38.3
Hoards	31	6.6	7.7
Single	92	19.5	22.7
Burials	97	20.5	24.0
Settlements	30	6.3	7.4
Other/unknown	68	14.4	0
Total	473	100.1	100.1

²⁰ 263 of the total of 624 swords merely have the provenance “Ireland”, and thus no known context; the effective total is therefore 361.

C. All swords	No.	%	% excluding unknown
Wet places	286	26.3	30.6
Hoards	67	6.2	7.2
Single	224	20.6	23.9
Burials	310	28.5	33.1
Settlements*	49	4.5	5.2
Unknown	151	13.9	0
Total	1087	100	100

* These are mostly lake sites in Switzerland and might therefore be best placed in the category of wet finds.

v. Quillfeldt suggests that the proportions of swords in graves in relation to those in water are probably interdependent; part of the fate of a solid-hilted sword was to be thrown into a river or bog, only being deposited in a grave in rather exceptional circumstances. Since there are plenty of graves in the area that differ only by virtue of not containing a sword, it seems clear that qualification for being buried with a sword involved something other than merely possessing or using one.

The low number of swords (mostly fragments) in hoards is remarkable by comparison with the situation in Britain; and most of them are both late in date (belonging to the late Urnfield period) and votive in character. The hoards from Engen and Preinersdorf are taken as examples by v. Quillfeldt: both consist exclusively of complete swords (v. Quillfeldt 1995: 10ff.). On the examples from Unterkrumbach there are no wear traces; the situation may be compared with the well-known find at St Moritz (Graubünden, Switzerland), where two *Vollgriffschwerter*, half a Rixheim sword, a dagger and a pin were found in the larger of two hollowed-out larch trunks, probably wells (Heierli 1907; Zürcher 1972; Wyss 1996).

Is there a significant difference between the contexts of *Griffzungenschwerter* and *Vollgriffschwerter*? Application of a χ^2 test to the respective figures for the two classes of sword in this part of Europe (including the unknowns) yielded a χ^2 value of 39.27, which at five degrees of freedom is highly significant, even at the 0.001 level. Excluding the unknowns, the χ^2 value is 39.15, which at four degrees of freedom represents an even higher probability that the null hypothesis (i.e. that there is no difference between the deposition contexts of the two sword classes) is to be rejected. This was perhaps predictable from the distinct difference between the percentage figures for deposition in wet places and burials between the two sword classes: *Griffzungenschwerter* were significantly more likely to be placed

in graves than *Vollgriffschwerter*, while the latter were significantly more likely to be deposited in wet places than the former.

These tables illustrate a number of things. First, there is a marked difference between the British Isles and central Europe in terms of grave finds. While grave finds with swords are virtually absent in Britain and Ireland, they occur regularly in central Europe. Secondly, the representation of swords in hoards is relatively uncommon in central Europe, while it is much more common in Britain, particularly towards the end of the Bronze Age. Thirdly, *Vollgriffschwerter* are much commoner in wet places than *Griffzungenschwerter*, at least in the area considered.

For Hungary we have the benefit of detailed statistics covering an identical area, by a single author (*Table 8*).

Table 8. Deposition contexts of bronze swords in Hungary
(Source: KEMENCZEI 1988; 1991).

A. Griffzungenschwerter	No.	%	% excluding unknown
River/lake	48	15.3	19.4
Grave	12	3.8	4.9
Hoard	116	37.1	47.0
Single	71	22.7	28.8
Unknown/other	66	21.1	
Total	313	100	100.1

B. Vollgriffschwerter	No.	%	% excluding unknown
River	17	6.3	8.5
Grave	7	2.6	3.5
Hoard	128*	47.2	63.7
Single	49	18.1	24.4
Unknown	70*	25.8	
Total	271	100	100.1

*plus many fragments

C. All swords	No.	%	% excluding unknown
River	65	11.1	14.5
Grave	19	3.3	4.2
Hoard	244	41.8	54.5
Single	120	20.5	26.8
Unknown	136	23.3	0
Total	584	100	100

Comparing the contexts of the two sets of figures by applying a χ^2 test, as with south-central Europe above, we obtain a figure of $\chi^2 = 17.91$ for the overall figures, or 16.17 excluding the unknowns, both of which are significant at the 0.001 level. Again, the percentage differences make it clear that this was a likely result. *Vollgriffsschwerter* were considerably more likely to be deposited in hoards than *Griffzungenschwerter*; conversely *Griffzungenschwerter* were more likely to appear in wet situations. Interestingly, this is precisely the opposite situation, or at least a different situation, to that in south-central Europe where the distinction was between wet places on the one hand, and burials on the other.

The situation in Romania is different again:

Table 9. Deposition contexts of swords in Romania (Source: BADER 1991).

Context	No.	%	% excluding unknown
Hoards	331	70.4	78.1
Single	77	16.4	18.2
Graves	4	0.9	0.9
Settlements	7	1.5	1.7
Wet	5	1.1	1.2
Unknown	46	9.8	
Total	470	100.1	100.1

Here the proportion of swords in hoards is dominant, while there are very few known grave finds and an equally small proportion of wet context finds. This probably reflects the situation of hoard deposition in Romania rather than anything else.

In France, Gaucher (1981) studied 550 find groups in the Paris Basin; 395 if one ignores those with no known context. This total included find contexts as follows:

Table 10. Deposition contexts in the Paris Basin (Source: GAUCHER 1981).

Context	No.	%
Hoards	133	33.7
Graves*	198	50.1
River	43	10.9
Settlement	21	5.3
Total	395	100

* 131 single graves and 67 groups

Weaponry was present in these finds but not dominant; the author specifically remarks that the number of seventy whole swords is not particularly impressive when one considers that there are around one thousand objects from rivers in the Basin, and that whole swords have attracted a disproportionate amount of attention from those recovering bronzes during dredging (Gaucher 1981: 32).

Verlaeckt's analysis of metalwork from East Flanders highlights the great disparity between metalwork from wet places and that from dry: of the 297 bronzes considered to have an acceptable find history, 149 came from rivers or river-banks (with a further 30 possibles), and 22 from peat or bogs. A mere eight bronzes came from graves, two from settlements and thirteen from other dry contexts (Verlaeckt 1996: 37). Within these numbers, weapons account for a significant proportion: 81 wet, 4 dry and 24 unknown (specifically, 24 swords in wet contexts and none in dry; 33 spearheads in wet and 2 in dry; 7 arrowheads in wet and none in dry; 3 spear ferrules and one helmet from wet contexts.). Impressive though this seems, it is necessary to bear in mind that the proportions for tools and ornaments are similar, so the predilection for placing bronzes in wet places is not restricted to weaponry.

From these various statistics on sword deposition contexts across Europe, various statements are possible about the role and position of swords. First, the contexts varied very considerably according to area. In particular, the differential representation in graves, hoards, rivers (or other wet places) and single finds is remarkable. *Fig. 20* indicates that while the proportion of single finds is similar in all the areas studied, at around 20–25%, the relative proportions of the other contexts varies enormously. This relatively constant proportion of single finds lends some credibility to the statistics. Single finds are those whose findspot is known, but which occurred as an isolated find; some of them almost certainly belong to other categories but no certain statement can be made. Thus a sword found during cultivation could easily emanate from a grave; a sword in a gravel deposit may well have been deposited in a wet place. One would expect the incidence of such single finds to be more or less uniform across large areas, given the fact that land has to be tilled everywhere, building works take place, and so on. This suggests that where marked differences in other categories occur the difference is a genuine one, and can be regarded as significant. It is of course possible that the differences in practice between different areas are to be related mainly to cultural matters, though this would indicate that patterns in the material are unlikely to be understood.

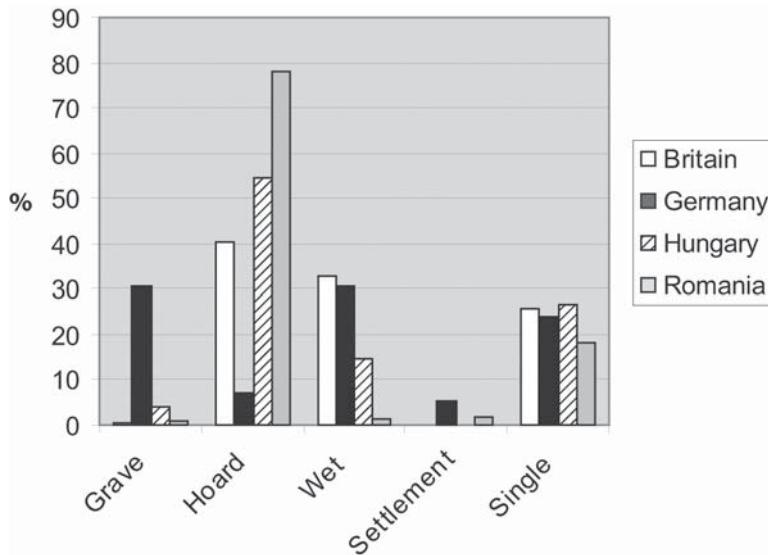


Fig. 20. Relative representation of find contexts for swords by country.

The relationship between deposition of weapons in rivers and that in graves is a complex and subtle one; at various times different authors have considered that when one stops the other starts, in other words they are complementary sides of the same ritual action (most recently Sperber 2006a). The fact that weapons were often, in contrast to ornaments, damaged or intentionally put out of action lends an additional layer of complexity to the matter, however. York (2002) provided detailed consideration of this in her discussion of metalwork from the Thames, where a significant proportion of weapons were damaged or destroyed: of spearheads, for instance, 82% were heavily used and nearly half were put out of use through intentional damage; numbers are similar with swords. The level of destruction increased over time, which suggests that perceptions of their role changed. What is certain, though, is that it was appropriate in many situations for metalwork, and particularly weapons, to be thrown into rivers and not recovered.

Weapon hoards

The phenomenon of “weapon hoards” has attracted attention in view of the potential for understanding how and why hoarding related to military activities. These hoards, which contain a predominance of weaponry, turn up in many different parts of Europe in the Late Bronze Age. Regine Maraszek (2006: 176 ff.)

has recently provided a convenient list for north and north-west Europe, from which it is apparent that most hoards consisting solely of weapons are very small, typically a sword or two and a couple of spearheads; only occasionally larger numbers. Maraszek also identifies “weapon-dominated hoards”, that is, hoards with the largest component consisting of weapons (2006: 196 ff.); the seventeen identified constitute a tiny proportion of the total number of hoards (less than 3%), and since many of these consist of damaged or broken objects it is likely that they are but one part of the wider hoard phenomenon of the Late Bronze Age. At the same time, there are some notable finds with very large numbers of weapons, such as the 150+ spearheads and three swords from Willow Moor, Shropshire, or the 80 spearheads and 10 spear ferrules from Bramber, West Sussex. This provides a significant contrast with North Europe, where ornament or ornament-dominated hoards are much commoner.

The discussion of British weapon hoards by Coombs saw the preponderance of swords and/or spearheads in hoards as reflecting “a greater need for defence or attack, itself motivated by economic and social pressures”; they are related to periods of “unrest caused by an increased pressure on the available land due to population growth and climatic decline. Within the hoards an aristocracy is evidenced, with the right to possess horse and wagon equipment, a cauldron and possibly a sword, also having a retinue of spearmen using the short javelin and long thrusting spear, and a smith at their command” (Coombs 1975: 75–7). He illustrated how common such hoards were at certain periods of the Bronze Age – though as with many discussions of hoards he had little to say about why they occurred in some periods much more frequently than others. His statistics do, however, illustrate well how sword and spearhead are often found together in hoards, especially in the Wilburton and Broadward groups; and how seldom these hoards contain standard domestic bronzes. By contrast, the hoards of the latest part of the Bronze Age in Britain, the Ewart Park/Carp's Tongue complex, are dominated by socketed axes – though where they do appear, spearheads especially are very numerous. An association with watery find-spots is very evident.

In hoards of the Dowris phase in Ireland, fourteen hoards contain only weapons, ten contain weapons and one other type, while some 34 contain only one ornament type and a further 37 contain ornaments and one other type (Eogan 1983). Another group contains tools or tools and one other type. Ornament hoards are clearly more common than weapon hoards, and (it would appear) ornaments than weapons. It is striking that only one ornament hoard contains a sword and two others a spearhead; only one hoard containing swords also contains an

ornament (Eogan 1983: 14 ff., Fig. 3). This is in marked contrast to hoards of the Bishopsland phase, which consist almost entirely of ornaments, only the Bishopsland hoard itself containing a set of metalworking and other tools (this corresponds to the Taunton phase in Britain, with a similar suite of metalwork). These figures suggest that while the selection of material for inclusion in hoards was not a matter of chance, and that weapons were not an invariable accompaniment of either hoards in general or ornament hoards in particular, there was a degree of intentionality in the composition of hoards which does not relate specifically to martial practice.

Kristiansen's short discussion of two Hungarian hoards (1999) approached the matter from a different angle, which relates to different aspects from those considered here. Much more telling than the Zalkod hoard which he considered is that from Bükkaranyos (Hoard II) (Mozsolics 1985: 105, Taf. 3–5), with its 31 pristine spearheads, and can certainly be considered a “weapon hoard” (*Fig. 21*). Since these are weapons in good condition, apparently never or seldom used, it is quite tempting to see these as related in a rather specific way to numbers of fighters who used them, or died with them. I return to this matter below (p. 164).

Conclusion: weapon deposition

Was there then ever such a thing as a “normal” deposition of weaponry? Clearly this depended on area, and probably too on period. Whether weaponry was deposited in hoards in a different way from other categories of material, for instance tools or ornaments, seems questionable; most attention has been paid to the matter because of the intrinsic interest of the weapons, and especially of the swords. Arguably in those cases which consist solely of one weapon type, e.g. groups of swords found in a river, there was a special set of activities involved which might be related to military activities such as the disarming of a defeated war band, or the sacrifice of weapons following a military action. But in cases where weapons are but one part of a larger ensemble, it is plainly wrong to separate out preferentially those hoards that contain some weapons, regardless of the rest of the hoard contents.

The fact is that weaponry was frequent in the repertoire of the Bronze Age smith; there was a lot of it about. In this sense, it is the fact that swords and spears are so commonly found at all that is important, since it relates to the overwhelming and increasingly evident impression of a warrior society in the Late Bronze Age, rather than the precise spots at which individual weapons are found.

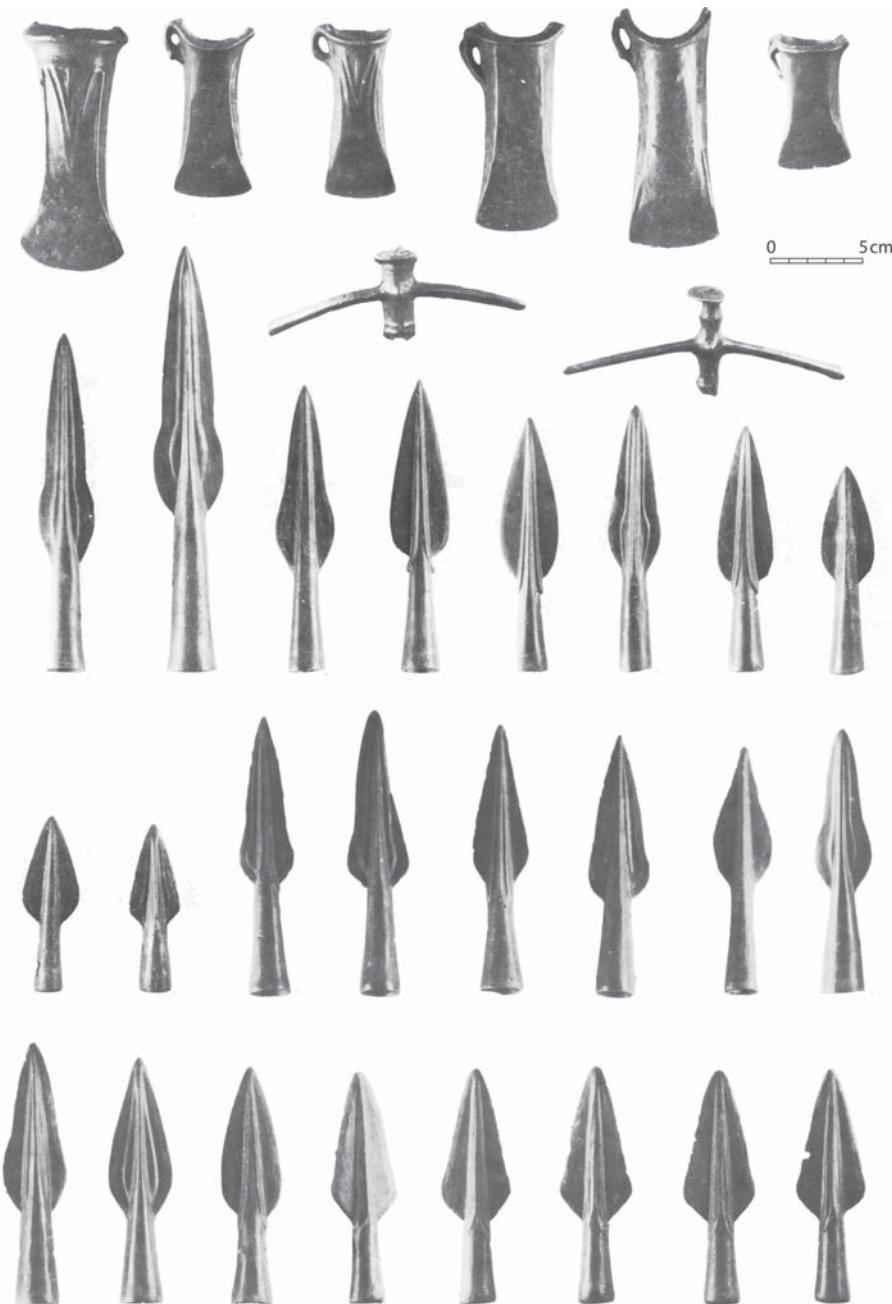


Fig. 21. The Bükkaranyos hoard, Kom. Borsod-Abaúj-Zemplén, north-east Hungary.
Source: MOZSOLICS 1985.

Chapter 9.

The image of the warrior and how he fought

The sword became the principal weapon with which fighting between individual warriors was conducted from the Middle Bronze Age onwards. It thus serves as one way in which such persons can be identified in the archaeological record; for all the evidence for typological and distributional variation, what we are really talking about is the armament of specific fighters. The story I have charted hitherto has tried to make clear that the role of the fighter developed over the course of some 1000 years from one based primarily on the hunting of animals to one where the “hunting” of other humans was the primary goal; in other words, the warrior persona developed with each passing century and each new technological invention in the field of arms and armour.

The (self-)image of the warrior

Extended discussions of the ways in which warriorhood was manifested, in terms of weapons wielded and depositions made, risk our losing sight of actual depictions of warriors. In a number of areas and periods of Bronze Age Europe actual human figures are shown, along with their weapons, either in repose (dead?) or engaged in combat (mock?). The rock art of south Scandinavia and the funerary stelae of southern Iberia are the main examples of this, though we may recall the Copper Age statue-stelae of the third millennium BC which must carry some of the same symbolism (above, p. 51). The two occurrences are different in character and must accordingly be considered separately.

The stelae of Iberia, long known and studied *in extenso* first by Almagro (1966) and most recently by Richard Harrison (2004), are usually, and plausibly, seen as funerary in nature, and depict deceased warriors along with their weaponry and other accoutrements (Fig. 22). Although the number of these stelae has increased dramatically in recent years, there are still only 103 known, all restricted to a few parts of southern Iberia. The stelae show a restricted range of objects, along with stick-like human figures (invariably male), among which the shield usually occupies pride of place, with sword, spear, mirror and a few other objects also present. While it is quite evident that the stelae commemorate dead warriors, their form and context raise interesting questions. Why here, and not more widely? Why now, and not throughout the Late Bronze Age (and at



Fig. 22. Grave stelae from Solana de Cabañas (Cáceres) and Cabeza de Buey (Badajoz). Source: ALMAGRO 1966.

other times)? Why in this form (typically engraved on relatively narrow blocks, often in hard rock (granite) and up to 1.80 m high)?

“The stelae are the materialisation of a chiefly ideology” (Harrison 2004: 75), a view with which it is hard to disagree. Opinions may differ about how to answer the questions posed in the last paragraph, and also about the extent to which chiefdoms were the dominant social construction of the Bronze Age, but about the role of the stelae as a means of making concrete beliefs about the importance of the warrior, or men (invariably men) who bore arms, there can be little debate. In these parts of Iberia, at this time, it was a necessary part of being a member of a Bronze Age community that one commemorated an important warrior, showing not just the arms he bore, but a schematic form of his person, and some of the objects that were important in making him who he was. It is

interesting that this included his mirror, sometimes his razor or tweezers, his comb and his coiffure. For being a warrior was evidently not merely connected with arms and armour, but in appearance, in playing the part; just as Achilles and other Greek warriors engaged in acts of physical beautification as a part of their warriorhood, and the Spartans are said by Herodotus to have prepared for battle at Thermopylae by combing their long hair (*Histories*, VII.208).²¹ Toilet implements play a significant role too in Early Medieval warrior burials.

The other manifestation of the warrior's image to consider is that seen on Nordic rock art, above all that found in Sweden (west coastal areas, Uppland) and south-eastern Norway (the most recent discussion in the vast literature: Coles 2005). Although figurative Bronze Age rock art is also found in two areas of the Alpine region, in general the depictions there are different in nature and will not be considered here. The Nordic art contains many different motifs and those depicting armed men are in a minority, even though their interesting subject matter has brought them preferentially to the world's attention. As with the Iberian stelae, the people shown are always male, in this case often rampantly phallic; they may carry shields or wear horned helmets, and have spears, axes, bows or most commonly sword-sheaths, which are usually shown hanging from the waist and in many cases, perhaps late examples, terminating in a cross-shaped chape (Malmer 1981: 49 ff. for a discussion of the weaponry). Sometimes the men appear close to others, with weapons upraised in apparently threatening mode, a pose which gives the obvious impression that combat is taking place (above, p. 115).

What does this art tell us about the image of the warrior in Bronze Age Sweden? Arguably something rather different from that of the Iberian stelae. Whereas the latter can be argued to represent specific people, each stela commemorating one specific warrior, the Nordic scenes look generic in nature, the figures drawn according to a particular artistic convention and one person not differentiated from another – except in a few cases where the size of the image, or the specific nature of the depiction, makes it stand out as being different from the rest (e.g. the huge spearman from Litsleby: Coles 1994: 70 Fig. 67) (Fig. 23). What appears on these panels is not the identity of a particular individual, but the acts in which the warriors are engaged; combat of a particular kind, maybe conducted at particular times in particular contexts. In this sense, the depiction of warrior identity is of a generalised kind. It glorifies combat and to that extent the warrior as well, but it does not seem to commemorate the specific warrior himself.

²¹ I thank Richard O'Neill for reminding me of this passage.



Fig. 23. Colossal spearman from Litsleby, Scania. Photo: author.

Nordbladh (1989) carried out a comparison of Bronze Age graves and hoards of Period II and the depictions of men with arms on the rock art of Kville hundred [≈ parish] in Bohuslän county, western Sweden. In both cases the incidence of swords was high (47% of the armed men depicted carry sword-sheaths; 65% of the male weapon graves of Period II in the analysed areas possessed swords, with 25% possessing daggers – which are not obviously shown on the rock art). The bearing and manipulation of arms is also found on depictions of ships, where the type of combat seems little different from that on land (i.e. not on board ship). Nordbladh concluded that fighting was an important part of Bronze Age society, and that the scenes depicted are demonstrating fighting “as an important means of social interaction, equally to both of the participants. In this way all fighters were honoured, not as commemoration but as recognition from society of the importance of fighting and of being a good warrior” (Nordbladh 1989: 331).

The Nordic rock art thus illustrates a highly important aspect of Bronze Age life in those areas of Europe, but it does not depict the warrior as an individual. It is impossible to doubt that warrior identity was important, especially given the prevalence of weapons in graves of the northern Early and Middle Bronze Ages, but to identify the individual we need to look to other sources of evidence.

Warrior identity

A perceptive analysis by Paul Treherne has drawn attention to the importance of the body, and the way it was treated, in the development of warriorhood in the Bronze Age (Treherne 1995). Thus it is not only the objects with which a warrior was buried that were important, though this is undoubtedly true; it was also the whole attitude to warriorhood, including ornamentation of the skin (e.g. by tattooing), the clothing (by appliqués, beads, or pendants), the hair (shaving it off or creating special coiffures) and the beard (most warriors in the Late Bronze Age apparently being clean-shaven). All these things lend conviction to the view that the “warrior’s beauty” was a crucial aspect of how such people created an image or identity for themselves and maintained it in the eyes of those around them.

In this context it is interesting that the Iberian stelae by no means restrict themselves to weapons, since mirrors and toilet articles are also frequently depicted. This suggests that the adornment of the person was just as important as the depiction of martial objects as such. It is a commonplace of Bronze Age funerary archaeology, too, that artefacts that apparently indicate gender are not actually restricted to one gender or the other. Thus one can find daggers in graves that are biologically female, and (more commonly) toilet implements or objects of adornment with males. Even so obviously male a grave (in terms of its artefactual assemblage) as the “King’s Grave” at Seddin contains not only a razor but also tweezers, a leaf-shaped blade that looks like a make-up implement, a comb, rings, pins and beads (*Fig. 24*) (Kiekebusch 1928). There are many similar instances that could be quoted; their importance lies in what they can tell us about how warriors behaved in terms of preparing and adorning their bodies; it was not just a matter of appearing big and strong; it was also a question of appearing well-tended, facial hair removed, hair coiffured, dress appropriate, badges of warriorhood on display. Perhaps, as with some modern males who take an excessive interest in their appearance, there was an effeminate or homoerotic element in this careful preparation of the body, just as can be seen in the exaggeratedly “masculine” pictures of Nazi youths engaging naked in various kinds of sporting activity.

Another type of bodily adornment, well attested from other periods of prehistory, is that of tattooing. Although no certain examples of tattoos are known from Bronze Age warrior contexts, it is highly likely that they would have been used. The Iron Age chieftains of Pazyryk made extensive use of tattoos, and the antiquity of the practice can be seen from the fact that Ötzi the Iceman

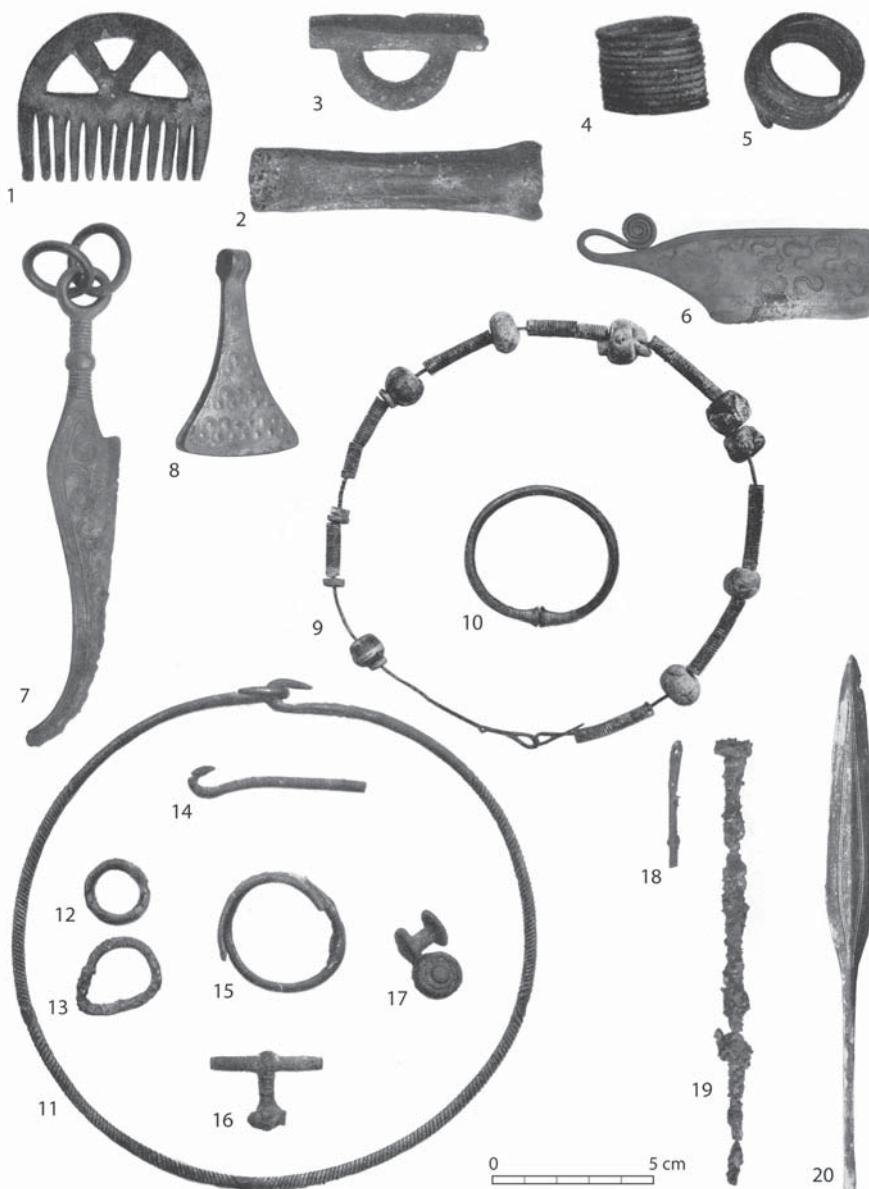


Fig. 24. Toilet implements from the King's Grave at Seddin. Source: KIEKEBUSCH 1928.

wore tattoos (cf above, p. 48). It has been suggested that the awls or needles found in some Bronze Age graves were tattooing needles; this is at least as likely an explanation for their function as one involving leather-working, as has

been suggested on occasion (Fleming 1971: 160–1 Fig. 17). Objects in Danish graves have similarly been interpreted as tattooing needles (<http://www.tattoo.dk/engelske/tattoo-history/ancient/e-bronzeage.htm>).

Martiality, that is, the ideology and expression of martial values, could manifest itself in various ways. Depictions of warriors were one; the treatment of the warrior's body was another; but turning a fighting implement into a ritual object was also important, as with the massive dirks of Plougescant-Ommerschans type (Fontijn 2001: 275–6; cf above, p. 120, *Fig. 19*). In this analysis, the ceremonial weapons were recontextualised; their exotic appearance lending them a significance within the communities that made and used them that emanated from, yet was unlike, the usual field in which dirks and rapiers were to be found. This type of warrior depiction was as powerful as that involving art, and more widely found in the archaeological record.

The expression of warriorhood could thus be made manifest in a number of ways; not merely through images but also through accoutrements. Harrison (2004: 176) has written of “invisible heroes”, referring to hero cults such as are found in Greece in the Iron Age. The warriors reconstructed from Bronze Age contexts may well have been something of this kind, just as Popham *et al.* have suggested for the large building of the Protogeometric period at Toumba, Lefkandi, Euboea (1993: 100; Mazarakis Ainian 1999: 25 ff.; but cf Calligas 1988, who interprets the building as a dwelling, arguing that the concept of the hero did not arise until after the middle of the eighth century BC). Heroes, after all, do not actually have to be “heroic”; what matters is that people recognise them as heroes; and in this the assigned symbols and objects played a crucial role.

Warriorhood is a state that can be found in many world cultures, historically and ethnographically. Barbara Ehrenreich has eloquently charted the characteristics of the “warrior elite” (1997: 144 ff.). Although her primary concern is with Japanese samurai and knights in Medieval Europe, much of what she has to say could pertain equally to the later prehistoric world. “To be a man, a “real” man, is to be a warrior; ideally the two conditions are indistinguishable” (*ibid.*: 146). Warriors depend on the labour of others to provide them with food and shelter, but that they regard as their right. Adventure, camaraderie, travel and fighting are all part of what it means to be a warrior; and at the end, after a good life, one seeks a glorious death – which means fame, not necessarily death in combat. Warriors come from, and continue, a famous lineage; thus commemorating them at death is as important as honouring them in life. Archaeologists have not always

been explicit about how they might identify warriors and warriorhood; Helle Vandkilde's work (2006) represents a notable trend towards such clarity.

In such circumstances, the mere presence of a sword might be taken as indicating warrior status, whether or not the weapon was ever actually used in combat. Swords that are damaged by edge-notching (cf above, p. 109) provide primary evidence of their actual use, and in these circumstances we can hardly doubt that the sword-bearer actually fought (i.e. was a warrior). But it is arguable that *anyone* who possessed a sword had achieved warrior status.

If we look at rich Late Bronze Age graves such as those from Poing in Bavaria (Winghart 1999), or Seddin in Mecklenburg (Kiekebusch 1928), it seems reasonable to discern the trappings of elite warriorhood in them. One can go further and argue that the provision of a sword or spear (or armour) indicates the presence of a warrior, whether elite or not. This would suggest that warriors broke onto the scene in the middle of the second millennium BC and by around 1200 were, if not ubiquitous, at least widely found. Presumably, once present they did not disappear, though it is not always easy to spot them when the funeral rite was that of cremation. It is very striking how in parts of the Urnfield world, for instance in the Lausitz culture in eastern Germany and Poland, large numbers of graves are found but very little differentiation in grave good provision (pots apart), at least until Period V. Certainly swords are found only rarely in these cemeteries. In Saxony, for instance, there are few swords in any context and few of those that there are come from graves (though the situation in Mecklenburg-Vorpommern is rather different) (Wüstemann 2004: Taf. 108).

A prime example of sword-bearing warriors of the earlier Urnfield period can be seen in the recently excavated cemetery at Neckarsulm, Kr. Heilbronn (Baden-Württemberg) (Neth 2001). The cemetery of 33 graves, containing 51 burials, was notable for three sword burials lying close together on the eastern side of the cemetery; these were notable for other rich goods as well, including a gold ring on the finger of the left hand of one of the warriors, and a pin, a knife, a whetstone and a number of small rings, horse equipment and bronze plate attachments with a second. The third was buried with the only armring found in the cemetery.

How warriors fought: combinations of weapons

One of the ways in which it might be possible to detect how weapons were used, and how warrior status was assigned and maintained, is to look at how weaponry appears in graves: in which graves, and in combination with which other objects.

This has been the subject of particular attention from German scholars, notably Peter Schauer (Schauer 1975; 1984; 1990; cf too Clausing 2005: 124 ff.). In the north sub-Alpine area he distinguished six grave-good assemblages (A-F) at the transition to the Urnfield period, four of them with swords, three with spears, and three with arrowheads; the remaining items were those of personal use (pins and razors). Of particular interest was the question of the presence or absence of arrowheads, indicating a mode of fighting that included shots from afar as well as fighting at close quarters, and the question of whether spears were held or thrown. Later Schauer was much bolder, distinguishing no less than thirty weapon combinations in the central European material between Middle and Late Bronze Age (pre-Urnfield). These revolved around combinations of rapier or short sword with dagger, arrowhead, axe etc; daggers with axe or arrowhead; axes; arrowheads; and more rarely, spearheads.

Most recently Clausing has analysed further grave-groups along similar lines, attempting to interpret the material further in terms of weapon use (Clausing 2005: 124 ff.). Like Schauer, Clausing's first group is formed by graves containing a sword. A second group contains sword and spearhead. A third group had swords and arrowheads (i.e. bows and arrows), indicating that fighting might also begin at a distance (of course bow and arrow must also have been used for hunting). That leaves a fourth group provided only with a spear, and another only with bow and arrow; the combination of spear and arrowhead occurs, though rarely. The statistics of these find types by period do not seem to be very informative, the larger numbers probably reflecting the fact that certain periods saw many more burials than others.

What then was the relationship between sword and spearhead when it came to manipulating them in real combat? In other words, how did the warrior fight? Did he first throw his spear, and then move in to fight at close quarters with his opponent? And what then was the role of daggers?

Sword and spear in action

The weapon combinations discussed above suggest that both sword and spear had a prominent role in Bronze Age fighting, though swords were commoner than spears. Spears as a regular accompaniment of graves are relatively less common, though they do appear fairly frequently in hoards. This makes it unlikely, on the face of it, that there were two types of warrior: spear-bearers and sword-bearers,

the first initiating the fight by throwing their weapons, and the second engaging in fighting at close quarters.

On the other hand, it is spear wounds that provide most of the certain evidence for trauma on Bronze Age skeletons, as charted by Osgood (2000a: 19–23, Figs 2.5 – 2.7; 2000b: 73–6 Figs 4.2 – 4.4; 2005; 2006), Jockenhövel (2004–5) and others. Thorpe (2006) has also chronicled this material, making it clear how *relatively* few examples of trauma are found in the Bronze Age by comparison with the Neolithic – in the British Isles at least. The cases of Tormarton (Gloucestershire), Hernadkak grave 122 and Klings (Thuringia) are striking instances of spearhead points found embedded in human bone; that from Klings, where the spear (or arrow) is lodged in a vertebra was almost certainly the cause of rapid death, while loss of blood and infection were probably fatal in the other instances.

An adult male aged between 35 and 45 from Sonna Demesne, Co. Westmeath, Ireland, represents an extreme example of being on the wrong end of a fight: he had a series of wounds on his left side, including “parry wounds” to the lower left arm and cut-marks on his radius and ulna; several of the ribs were cut through apparently by a sword and others had shallow cuts; and a deep hole in one of his lumbar vertebrae from a spear thrust, which was probably fatal. To add insult to injury, he was buried minus his skull and upper three vertebrae – whether these were removed at the time of death or as part of a subsequent movement of the skeleton is not known (Sikora – Buckley 2003). This individual had presumably been engaged in a fight with an opponent who used both sword and spear.

We may derive from this some indication of what happened in a “typical” fight in the Bronze Age. Arrowheads appear often enough for it to be reasonable to assume that volleys might be despatched at the start of a fight, but more likely during raids than in man-to-man combat. The evidence of Velim provides strong support for this (cf p. 88). Javelins were also used, though probably more sparingly than held and thrust spears; both because they were more unpredictable and because once thrown they were lost to the fighter who threw them, at least temporarily. Again, they were most likely used when raiding bands were attacking, and probably thrown in volleys, since it would be relatively easy to dodge a single javelin. But when it came to man-to-man fighting, it was the thrust spear and the sword which were the normal weapons of choice; and to counter them, body-armour and shields, usually of organic materials, were available. Thrusting with a spear on a long shaft would have been the first stage, at least for equally matched

opponents; presumably this either led to a hit, and probable victory for one side or the other; or it was inconclusive and the warrior had to get in close and use his sword.

As I have mentioned, the total number of Bronze Age individuals with clear signs of trauma resulting from sword or spear wounds is not particularly impressive, though we cannot know how many suffered wounds to soft tissue or vital organs where the weapon did not touch any bones. This raises the question of how much fighting actually went on. If weapons were so common, and damage to swords so frequently found, why do we not see many more instances of trauma? One hesitates to “pacify the past”, as Keeley and others have accused archaeologists of doing; and one can hardly doubt the prevalence of warriors and raiding parties in the Bronze Age; but it remains possible that much of what went on was on a small scale and rarely fatal. That is why Velim, and possibly Blučina, are so unusual: they really do encapsulate the direct evidence of larger-scale violence in a way that we do not normally see.

At the same time, it is hard to believe that serious fighting was actually unusual in the Bronze Age. I have suggested on a previous occasion (1999) that warfare was a “defining characteristic of the Bronze Age”, and that remains a possibility; it depends on what one means by “warfare”. I believe that the evidence is incontrovertible that Bronze Age societies in most parts of Europe were dominated by warrior elites, who used their position to create and maintain a special status for themselves and perhaps for an elite group to which they belonged. This has socio-political implications, to which we shall shortly turn.

Chapter 10.

Warrior bands and raiding

The discussion so far has revolved principally around weapons and the people who may have wielded them. I have attempted to demonstrate that the weaponry in use during the Bronze Age had a very particular purpose, that of identifying the warrior within the society in which he (or possibly she) lived, in addition to the obvious function of striking damaging blows at opponents. But the people who wielded these weapons lived in a physical environment, that is, sites and landscapes; and these provide quite different kinds of information that nevertheless feed into the picture of Bronze Age warriorhood and warfare that I am attempting to unravel here. The site and its territory, or catchment, represents a source of potentially important information. This takes us into a quite different area of investigation, that of political and social interaction on a wider scale than that of the individual and his/her immediate community.

The rise of “political” units in the Bronze Age

In considering the political significance of sites in the Bronze Age we need to look above all at questions of scale and density. I and many other writers have supposed that in most parts of Europe during the first half of the Bronze Age settlements were predominantly small-scale and concerned primarily with the basic necessities of life, above all food production. The size of sites may vary, from villages of some scores of inhabitants on tells as in Hungary, to individual farmsteads scattered across an agrarian landscape as in much of Britain. The accompanying cemeteries or individual graves tell us something about the role of certain people in such agrarian societies, but they do not speak of the extent of control that was exerted, the breadth of influence which may have been felt. All the indications are that these communities were small, operating on a rather local scale, at least as far as foodstuffs were concerned, even though there are many indications that in some other respects Bronze Age communities were plugged in to a much wider world.

This raises difficult questions, however, about the implications of the movement of goods, especially metal, which was demonstrably occurring from early stages of the Bronze Age. The role of traders can hardly be ignored; yet the extent and effects of the trade or exchange is a matter that has been much debated. While this

is not the place to embark on an extensive discussion of “World Systems Theory”, we cannot ignore the much-discussed notion that extensive networks of exchange connected distant parts of the European continent during much, if not all, of the Bronze Age. Seen in that light, the agrarian villages were not isolated socially, even if geographically they might have lain at the “ends of the earth”.

On previous occasions I have attempted to specify the sizes of Bronze Age communities in terms of the areas that seem to have lain within their orbit (Harding 1997; 2000, 422 ff.). Many uncertainties remain in such an exercise, not least as a result of incomplete or inadequate knowledge of settlement location in particular instances. Nevertheless, it seems possible in certain cases (the shores of Swiss lakes; Alpine valleys; moorland settlement in northern England; parts of southern Sweden) to indicate how dense the settlement pattern was at particular periods, and how many people might have lived on the sites in question. In the great majority of such cases there is no indication that any one site was more important than any other; this cannot be ruled out but equally it cannot be conclusively demonstrated.

In such a case one may question the extent to which the spacing of settlement was really “territorial”, except in the merely mechanical sense that subsistence catchments could not have lain so close to each other that economic viability was compromised. We get little or no sense of control or supremacy from such instances in the sense that one site controlled others. While this may be beyond the capabilities of archaeological evidence, it seems more productive to assume that what we see is what was actually the case – within certain limits.

At the same time it would be wrong to suppose that these settlements were divorced from a political context. It is interesting in this context to consider how the work of a well-known commentator on the Bronze Age scene, Timothy Earle, relates to this scenario (especially Earle 1997 and 2002 – the latter incorporating earlier articles). For him, “the beginnings of political economies” relate above all to the rise of chiefdoms. He has been concerned to chart the scales of political integration over the course of prehistory, following an evolutionary model that goes back to Elman Service and beyond, of family level, local group and regional collectivity, chiefdom and chiefly confederacy; and state (Earle 2002: 14–16). In this evolution, Neolithic societies are seen as falling in the second (local group) level, and Early Bronze Age ones in the third (chiefdoms). Much of the argument for this in an archaeological context rests with the interpretation of grave goods, but in the particular case study that Earle has himself developed, that of northern Jutland in the Bronze Age, the study of settlements is also important. Thus he

drew attention to the association between Early Bronze Age “chiefly households” and metalwork, as at Tyrrestrup and other sites, or in amber production; the latter was particularly evident at the Late Bronze Age sites of Bjerre and Bulbjerg (*ibid.*: 316 ff.). Earle does not discuss the extent to which these sites were arranged “territorially”, in the sense that they controlled particular blocks of land, but he argues that they were dependent on a mixed farming economy and on specialisation in craft production which increased over the preceding Late Neolithic; manuring is suggested as a means of intensifying agricultural production. In Britain, Earle suggests that the development of field systems indicates “a shift towards hill-fort settlements and a reorientation toward staple finance” (*ibid.*: 310).

Another way in which territorial organisation has been suggested is based on grave-goods, in particular the presence of weapon-bearing warrior graves (Sperber 1999; cf Wüstemann 1974; 1978). Such analyses depend on the view that one would only find one elite sword-bearing warrior in a defined area at one time, on the assumption that he would have occupied a pre-eminent position and not had rivals. Thus Sperber has reconstructed assumed “sword-bearer territories” for parts of south-western Germany, and Wüstemann did something very similar for the Seddin area of Mecklenburg. These have to be considered “personal” territories and not necessarily that of the socio-political grouping to which such sword-bearers belonged (“tribes”, “chiefdoms”).

Interpretation of the British (particularly southern English) field systems has been a matter of debate for some years (e.g. Fowler 1983; Fleming 1988). This ground is well trodden and not a principal concern of this discussion; essentially the arguments revolve around whether or not the division of land into “fields” indicates ownership, and if so, what are its implications. The change from blocks of fields to a system based on major land divisions (“ranch boundaries”), often thought to suggest a change from arable to pastoral agriculture, marks a further important change; and this last is one that seems to be associated with the development of hillforts, as in the Danebury area (Palmer 1984). The change is hard to date with precision, but there are a number of indications that it occurred during the later centuries of the second millennium BC, certainly after the creation and use of the earlier Bronze Age field systems, but before the time when hillforts came to dominate the landscape in the Early Iron Age.

In spite of this, and other, evidence for settlement units that verged on the territorial, it is hard to discern in the evidence from the Early Bronze Age much that could be considered “political”, in the sense that the human groupings involved were linked at more than local level. Of course it is possible to suppose

that many and various linkages conjoined people through social and economic factors, and that the social units involved – “tribes”, if one wishes to use the term – occupied distinct and largely discrete geographical areas. But to go further and identify units that could be considered to have operated like proto-states, with distinct identities and specific ways of interacting with neighbours on the proto-state level, is another matter, and one for which the evidence is lacking outside the East Mediterranean world prior to around 1200 BC.

Hillforts and territoriality

The next step in the process, however, sees a major shift. Although the process appears to have started at different times in different places, the rise of fortified sites, with ditches and ramparts or palisades, marks a big change in the approach to land use and territoriality.

It is perhaps easiest to envisage the change first of all from the standpoint of the Iron Age, which saw the creation of very large numbers of fortified sites, notably though not invariably on hills. Although opinion has been divided about the extent to which hillforts were always intended for defence (e.g. Bowden – McOmish 1987, 1989; Hill 1995), most commentators have viewed this as at least one part of their functions and very probably the principal part, however much it was overlain with considerations of display or ritual.

Whatever the truth of this, many authors have argued that hillforts acted as territorial centres – which raises the question of the nature and size of their territories. Cunliffe, for instance, argued that Wessex hillforts could be seen to have a territorial patterning (1974: 260 ff.; in later editions territories implied without being emphasised: 2005: 388 ff., Figs 15.27, 15.29; cf Cunliffe 1976), with the borders of the territories being linear boundaries that divided land into arable and pastoral (cf too Sharples 1991: 259). More recently, Cunliffe has examined the specific place of Danebury within its landscape and its relationship to its surrounding settlements (2000: 170 ff.), while stopping short of endorsing a mechanistically formal model of territoriality. Most commentators would agree, however, that hillforts were intimately connected with their surrounding landscapes and could hardly have arisen without them, whether or not they viewed them as the central points of “territories”.

Other commentators have challenged this point of view (e.g. Hill 1995, 1996; Collis 1996), arguing that they should not be viewed from the “top downwards”, and specifically that they were not necessarily centres of exchange

or craft production supplying a surrounding “territory” that was dependent on them; and that boundaries may not be quite what they seem.

Models for the rise of Iron Age forts, while necessarily tracing them back into the Bronze Age, have thus been divided into two main camps. One sees the rise of defences as purely military, the result of unsettled times perhaps connected with environmental effects such as climatic deterioration, and the consequent rise of aggressive activities by groups wishing to acquire or maintain essential resources at the expense of their neighbours. A variation on this is the model offered by Sharples (1991: 259), who charts a rise to power of communities that could control agricultural resources,²² and that “aggressive competition over diverse agricultural resources” might be shown by the distribution of hillforts, at least in the Maiden Castle area. The higher status of some communities might then be “projected” by the construction of defences since control of valuable agricultural land might lead to retaliatory action by other communities wanting a share. While this is not a directly military explanation for the rise of defended sites, in the end the effect is little different from a standard “defence” model, since it was initially to deter attacks that the defences were erected in the first place – however they may have developed subsequently (into enormous constructions that would take years to create and a huge population to defend effectively).

The alternative view, as propounded in outline form by Hill and others, stresses the context in which hillforts came to exist, concentrating on the existence of previous demarcating boundaries, the structuring of deposits in the pits and ditches of enclosed sites, and the structuring of space within enclosures, where property relationships were as important as, or more important than, kinship relationships. This stresses the ideology of the age, and the fact that defences may have been as much symbolic as functional (cf Bowden – McOmish 1987); forts could be seen as “symbols of community, the location for … corporate gatherings”, these consisting of “age-set and initiation ceremonies, gatherings at key times in the agricultural season, etc (all probably involving exchange, marriage arrangements and feasting etc” (Hill 1996: 109). In this model, even the entrances are seen as drawing on other than purely military needs; control of space and the “accompanying mental/emotional transition of entering the fort” were the prevalent motivations (*ibid.*: 110).

The argument about the symbolic nature of hillfort defences is much more plausible in the context of those sites which developed massive banks and ditches

²² Actually he refers to the “reproduction of agricultural resources”.

in the Middle and Late Iron Age than it is for the relatively modest sites of the Early Iron Age, where enclosures were almost invariably univallate and situated in defensible – even if not the *most* defensible – locations. The connection with linear dyke systems, notably in parts of Wessex, brings with it a relationship to what was happening to the agricultural landscape in the Middle to Late Bronze Age, as plausibly reconstructed for Danebury, Segsbury and other sites.

Studies have been conducted in a number of countries on the distribution, form and function of Bronze Age forts. In a previous work I have drawn attention to the phenomenon of fort-building in an apparently territorial, or at least evenly spaced, manner (Harding 2000: 303). Thus one may find examples of forts strung out as if in a line along river valleys in Hungary or Germany, while the stone forts of western Ireland, notably the Aran Islands, appear to lie spaced at roughly equal distances from each other on these small islands (*ibid.*: 304 Fig. 8.12). All may not be quite as it seems in this case, however, as only one of these forts (Dún Aonghasa on Inishmore) has produced Bronze Age material from excavation, apparently from a phase that pre-dated the main rampart wall (Cotter 1996), and the occupation of other forts may go on beyond the prehistoric period.

This example seems particularly telling, for two reasons. First, the “territories” that these forts could have controlled (assuming they are all contemporary) are extremely small, only a few square kilometres. Inishmaan, for instance, is only about 4 x 2 km in extent and has two forts on it, which might imply territories of about 4 km²; those on Inishmore are perhaps a little larger, with some 50 km² to divide between four forts; while the single fort on Inisheer lies on an island around 6 km² in extent.

Second, the case of Dún Aonghasa is instructive in that it has several curious features: unlike most of the other Aran forts (but like some coastal mainland forts in Ireland) it is not now, and never has been, a complete circuit, but a semicircular space, the base of the semicircle being represented by the line of sheer cliffs nearly 100 m high that fall straight into the foaming waters of the Atlantic on the south side. It possesses two complete inner lines of stone rampart, an incomplete third line, and a less distinct, lower outer enclosure wall; outside the inner circuits is an extensive area of *chevaux de frise*, pointed stones placed upright and in Medieval contexts assumed to be a deterrent to cavalry attack – though hardly in this case. Are we to suppose that the Aran Islands in later prehistory were such warlike places that even tiny islands with even tinier territories found a necessity to place massive fortifications in the way of potential attackers? Or do we suppose that other reasons prompted the construction of these great sites? That is certainly

the view of Rynne (1992), who has made a convincing case that Dún Aonghasa served more as arena, or theatre, than as fort. Not only are the fortifications a striking case of overkill; the situation of the site, high on the elevated part of the island with its extraordinary exposure to both the elements and the danger of the cliff, suggests that its function was more than military.

Yet excavations in the interior of the site revealed both occupation structures and the remains of metal-working, neither of which would be out of place on a normal domestic site (Cotter 1996). People seem to have lived and worked here, both before the innermost wall was built and (presumably) after. Although there may be ritual overtones to the site, life in its interior seems to have included the humdrum as well as the unusual.

If the Aran Islands represent later prehistoric fortification trends in microcosm, we may ask whether its lessons can be applied to wider territories. Unfortunately, unlike in the Arans, the degree of completeness of archaeological cover is elsewhere much more patchy. And apart from some well-known and well-explored areas the state of archaeological knowledge in many areas leaves much to be desired; presumptions of territoriality may thus not be well-founded.

A recent study in a different part of Ireland (Condit – O’Sullivan 1999) has considered the situation of hillforts along the River Shannon in Counties Clare and Tipperary. Two hillforts lie in elevated positions, one each side of the Shannon, with additional enclosures situated in between them. A cluster of swords and spearheads comes from the Shannon just south of Lough Derg, and large numbers of stone axes come from both the river and the adjacent dry land. The authors of this study suggest that the hillforts in the territory were not fortified settlements, since the Mooghaun excavation (Grogan 2005a) provided little or no evidence for permanent or long-lived occupation inside the fort; instead they suggest that hillforts served as:

“places of storage or as refuges at times of particular danger. It is also probable that some measure of community status was involved... they may... have been used for display, being primarily meant to be seen from a distance by the local community and by travellers passing by. In this way, hillforts on the skyline would have reminded people that they were within the boundaries of specific political territories” (Condit – O’Sullivan 1999: 35).

A similar situation seems to apply in north Tipperary and the southern part of Co. Clare (Fig. 25) (Grogan 2005b: 101 Fig. 6.10; 102–4). With six hillforts and five hilltop enclosures, and a major river (the Shannon) forming a natural

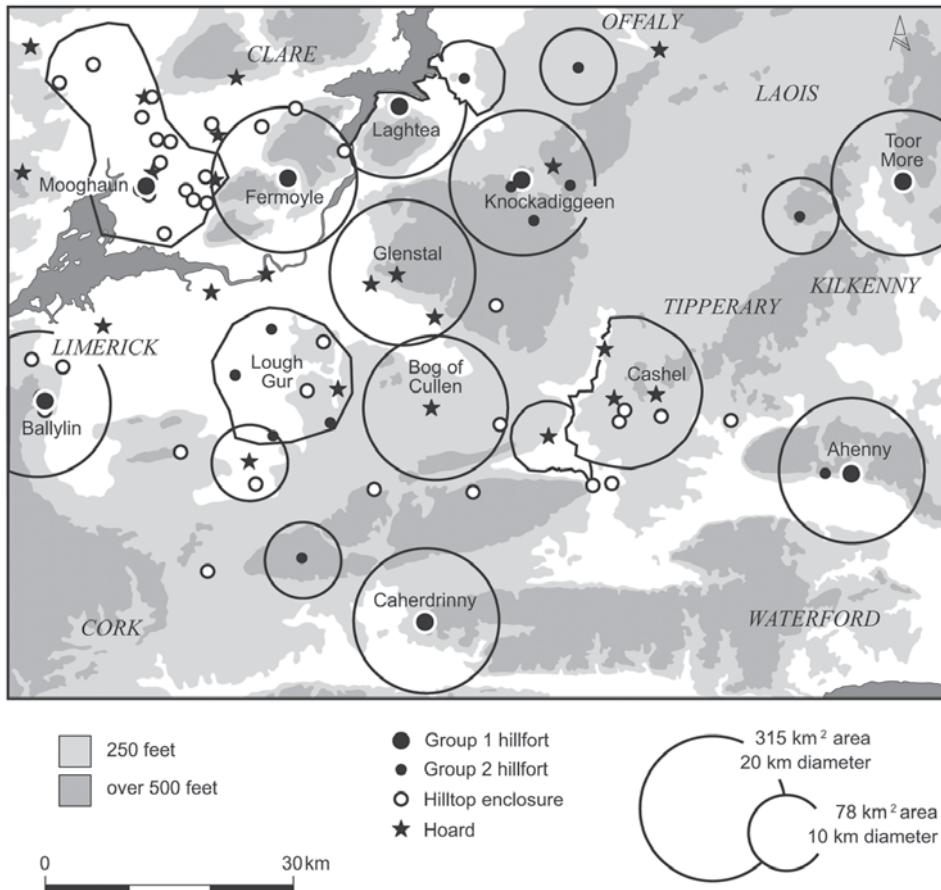


Fig. 25. Hillforts and artefacts in north Tipperary. Source: GROGAN 2005b.

boundary, the distribution of sites has a distinctly territorial flavour, which artefact distributions back up. It is argued also that the situation of hillforts in this part of Ireland was closely related to communication routes, though the large size of some of them is puzzling if they were merely to enforce control rather than to serve as a residential location.

The fort at Mooghaun, Co. Clare, differs in that it is the only hillfort in the region, with other sites being hilltop enclosures; these latter may or may not have served a similar purpose (Grogan 2005a: 29 ff.). Grogan proposes a model in which some eighteen “territories” are suggested (*ibid.*: 87 ff., Fig. 4.6; 93 ff.), not all of equal size and centred on prominent sites. The Mooghaun area is regarded as the centre of an emerging chiefdom. The sizes of the territories suggested

range from 7.4 km² to 21.3 km². Taking the much larger area of Munster as a whole, the territorial model seems to work reasonably well though there are some large gaps (*ibid.*: 99 Fig. 4.12).

If the evidence for hillforts in Ireland demonstrates that the beginnings of construction lay in the Bronze Age, as has been clear since the excavations of Rathgall (Raftery 1976) and the more recent work at Haughey's Fort (Mallory 1995), now confirmed by the dates from Mooghaun (Grogan 2005a: 240–1), in Britain there are similar indications but no clear overall picture. For example, excavations at the Breiddin, in the borderlands of Wales, have uncovered extensive evidence of a Bronze Age fort underlying the Iron Age one, with settlement remains including a bronze-working furnace, pits and four-post structures (Musson 1991); this is one of an increasing number of hillforts which are now known to have started life in the Late Bronze Age. At present it is not possible to do more than pick out individual sites in Britain where such evidence is forthcoming, but it is likely that many more than are currently known will eventually produce early (i.e. pre-Iron Age) material. The site of Ram's Hill, Berkshire, has been studied on several occasions (Bradley – Ellison 1975); the classic Iron Age hillfort was preceded by a smaller Bronze Age enclosure; buildings attributable to the Taunton metalwork phase preceded the erection of ramparts at the site, which began in the Penard phase and were subsequently modified several times (Needham – Ambers 1994). This puts the date of rampart construction in the thirteenth century cal BC.

The situation in central Europe has recently been reviewed by Rind (1999) and Primas (2002), building on earlier work by Biel (1980, 1987) and Jockenhövel (1980, 1982, 1990). While the situation is far from uniform across Europe, with some areas seeing forts start very early (e.g. Slovakia) and some seeing no forts at all (e.g. the Hungarian Plain), in general the Late Bronze Age saw a massive increase in hilltop settlement, often with added ditch and rampart. There are certain patterns discernible: most forts are of moderate size (a few hectares at most) but a few are larger, some very much larger. The examples of the Houbirg near Nürnberg (over 88 ha) and the Bullenheimer Berg in northern Bavaria at 30.5 ha are cited, the latter especially important in view of the long campaign of excavation which has taken place there (Diemer 1985; 1995); Primas envisages these large sites, some (like the Bullenheimer Berg: Diemer 1995: 87 f. Abb. 20) with depositions of metalwork, as having served the purposes of an elite. In other cases forts stood at strategically important locations, such as the intersections of valleys or at the foot of mountain passes; in other cases they may lie on prominent hills in an

otherwise open or rolling landscape. A curious aspect, familiar to anyone who has conducted fieldwork in upland Britain, is that sites quite frequently do not have a water source within their defended area, suggesting that long occupation was never intended: this was the case with the site that Primas herself has surveyed, the Rhinsberg near the Rhine in Zürich canton. It is thus hard to generalise beyond pointing to the evidence – where satisfactory dating is available – for a major phase of enclosure and fortification in the Late Bronze Age.

In the Alps too there are important indications that people were moving to high ground at particular periods of the Bronze Age. At Sotciastel (San Leonardo, Bolzano), an irregular quadrangular area with steep slopes on three sides was protected by a massive stone wall on the east side where the slope was gentle; the bulk of the pottery belonged to the Middle Bronze Age (mid-second millennium BC) (Tecchiati 1998). At nearly 1400 m above sea level, with the ground descending steeply to the west by nearly 200 m, the site is relatively inaccessible except to those living in the high mountains, and if not impregnable certainly a major undertaking for those wishing to attack it. Other high sites of the same period are known, notably Albanbühel at the head of the Bressanone/Brixen valley, but at present the network is not dense enough to be able to speak convincingly of territoriality.

At this point it is necessary to reiterate the evidence for a more or less regular spacing of hillforts in certain well-studied areas, for instance southern Württemberg (Biel 1980) or the Danube valley in northern Hungary (Bárdi 1982); other instances could be quoted and more will become apparent. While it would be premature to suppose that maps like this give more than a general picture, in view of the lack of good dating evidence from many sites, they are certainly suggestive and lend support to the hypothesis that forts were situated within, and arguably controlled, territories at least from the beginning of the Late Bronze Age.

A rather different cultural environment is represented by those parts of the Mediterranean where forts are common. Along the northern and eastern shores of the Adriatic, for instance, numerous forts (*castellieri* or *gradine*) are found. Relatively few of these have been the subject of modern excavation, but work in Istria and the nearby karst lands around Trieste have shown that some sites at least go back to the Middle Bronze Age, if not earlier. Much the most famous of these is Monkodonja near Rovinj (Teržan *et al.* 1998), where a stone-walled fort with monumental gateways enclosed large numbers of stone buildings, and finds indicating a date in the late Early Bronze Age with the latest belonging to

the Middle Bronze Age (1800–1600 BC). At present this site appears exceptional, but it would be extraordinary if this were so, and one can confidently predict that in the coming years more such sites will be discovered (many sites are known, but most are uninvestigated). An indication of what may be to come can be seen from older finds and recent work on forts in Friuli and the Trieste region (Moretti *et al.* 1978; Cardarelli 1983; Cassola Guida – Vitri 1988).

Unfortunately political events of recent years have made it impossible to pursue these matters further down the Adriatic coast into Dalmatia, but indications from earlier work are that at least some of the *gradine* of Croatia and Bosnia had Bronze Age beginnings (e.g. the Velika Gradina at Varvara: Čović 1965, 1977; Benac 1985).

The famous *nuraghi* of Sardinia are something different again, arguably so different that they deserve more than a short account (a convenient recent summary: Russu 1999; also Webster 1996; Perra 1997). Excavations over many years have shown that there was a long developmental sequence in the more complex *nuraghi* such as Barumini, and while in their latest stages they were used in the Roman period (e.g. Sant'Antine), they began life in the Bronze Age, probably quite early in it. Second, it is now clear that a variety of domestic activities took place in and around the *nuraghi*, including metalworking. Third, and for our purposes most important, the extraordinarily dense distribution of sites in some parts of the island speaks for a completely different situation from the hill sites we have been considering so far. *Nuraghi*, which are built in Cyclopean style from large stone blocks, must have been the work of a sizeable group of people, and were presumably occupied by more than a nuclear family – an extended family at the very least (depending on size; even the simplest towers have several chambers while the larger, more complex ones could house scores of people). Yet in some areas, notably west and south of Sassari, they are so frequent that one wonders how it could come to be that so many people or groups could co-exist while requiring the security of such strong fortresses. Were these groups in a constant state of aggressive activity? Or do we imagine that brigands from the hills – much as in recent history – were a continual threat to the safety of agricultural communities on the plains?

On the other hand, some have argued in recent years that *nuraghi* could not have been strongholds or indeed defensive at all (Trump 1992; Russu 1999; Burgess 2001). There are certainly many puzzling aspects to these sites, but because they do not seem to fit with our notions of what a defended stronghold should be like, it does not mean that this was not at least part of their function; it

seems hard, if not impossible, to believe that thousands of elaborately constructed stone towers were built solely, or even mainly, for ritual purposes. The nature of the territorial distribution of *nuraghi* has been considered by a few authors but without firm conclusions; Perra, for instance, describes the territorial setting of Nuragic communities as “polycentric” (Perra 1997: 56), pointing out the clustering of sites across the settled area, with sites being preferentially located on “hillocks of middle height” – argued to be a strategy adopted by dominant classes needing land suitable for an “integrated agropastoral economy”. An analysis of the geographical situation of *nuraghi* has further pointed out specific correlations with soils, water, geomorphology and lithology (Brandis 1980). A full study of distributional factors and their relationship to function remains to be carried out, however (cf Bonzani 1992), but at least an attempt at discerning territorial organisation in Nuragic Sardinia has appeared (Tanda – Depalmas 1991).

Raiding as a way of conducting war

The evidence of hillforts, stockades and fortified towers presented above supports the view that the mode of warfare practiced in the Bronze Age was that of raiding. Although the construction of forts must have owed something to cultural constraints and the requirements of what was considered “proper”, including the possibility of ritual, nevertheless it would be churlish to ignore the defensive possibilities of the walls, ditches, ramparts and palisades with which the forts were equipped. Those defences, which even today are in many instances impressive, seem ideally suited to a mode of warfare in which raiding parties moved across the landscape.

Such parties might consist of some dozens, scores, or even hundreds of men – whether women were involved is a matter for which there is little or no evidence, though certainly in historic times war bands were exclusively male. The size of the bands must have been related to the size of a) settlements, b) kinship or affine groups, c) social or “tribal” groups (i.e. those recognising bonds of obligation at more than a local level). Arguably, it was the inhabitants of one fort and its territory that constituted the pool from which the raiding party was drawn; and that defences were thrown up by each group to deter, if not actually to prevent, damage from attacks by neighbouring groups. It is highly unlikely that war bands were of a size that could be called an “army”.

The notion of raiding has been suggested before for the Late Bronze Age by a number of authors, including myself (Osgood 1998; 2000a: 34; Harding

2006). Osgood sees a trend over the course of the Bronze Age from more mobile to more static settlement, as investment in communal works like field systems or portable wealth in the form of metal became something that needed to be defended against attack. The change in the form of weaponry would constitute part of this changing mode of warfare. There is no reason why raiding should have occurred at the same time in every area; this might depend on local social and economic conditions. Thus it is no surprise that in some areas hillforts occur in the Early Bronze Age, in others not till the Late Bronze Age.

In Ireland similar developments have been suggested. In view of the forts and weapon deposits along the lower Shannon, “warfare and political conflict were central to the emerging identities of Late Bronze Age and Iron Age communities”, a view which is fully in concord with the thesis being developed in this book. “Periodic raiding, ritual combat, warrior élites, complex and constantly varying tribal alliances and shifting enmities must also have been significant elements in Late Bronze Age social organisation” (Condit – O’Sullivan 1999: 37).

In order for this to happen, however, groups of warriors needed to form into cohesive bands under a single command, and the nature of such bands is our next concern.

The nature of early warrior society: the warrior band

Ethnographically and sociologically, male bands or confederations (*Männerbande*, *Männerbünde*) are well known and occur in many situations, both ethnographically and historically (Schurtz 1902; Schweizer 1990). These range in recent times from religious groups, such as monks or Roman Catholic clergy, through groups connected with educational institutions (English “public” schools [i.e. single-sex private schools], Oxbridge colleges), to those connected with warlike enterprises (officers’ messes, military or quasi-military groups in Germany during the Third Reich). In the latter, for instance, the glorification of the healthy body, the practice of strenuous exercise or daring exploits, and the adherence to a creed of discipline and order are notable, and may bear on what we can reconstruct for the ancient past. Body-builders, who glorify the super-fit (*sc.* beautiful) body for its own sake, are doing something of the same sort.

Schweizer’s (1990) factor analysis using the World Cultures databank suggested that one factor (his number IV) was specifically concerned with war, and included the frequency of external warfare, high prestige attaching to warriors, the practice of plundering, and male aggressiveness as an ideal role; this

was one of five factors which accounted for the majority of variation between groups. It remains a curious fact that female bands are much rarer. Tiger (1990) suggests that male bands, as seen from a sociobiological perspective, provide functional benefits – notably in the creation of war machinery or aggressive expressions of group identity (think Orange Order in Ulster, football fans) – that make them desirable in many societies. This is one viewpoint, but the matter is controversial.

The warrior band is primarily known from early Medieval sources, though there are also indications from Classical sources that some Celtic and Germanic tribes had developed something very similar. Tacitus (*Germania* 13.2–3), for instance, describes the *comitatus* in Germania, usually translated as *Gefolgschaft* (English “retinue” or “followers”, adherents to a *Gefolge*; cf Todd 2004: 30). To quote him:

“Conspicuously high birth, or signal services on the part of ancestors, win the chieftain’s approbation even for very young men: they mingle with the others, men of maturer strength and tested by long years, and have no shame to be seen among his retinue. In the retinue itself degrees are observed, depending on the judgement of him whom they follow: there is great rivalry among the retainers to decide who shall have the first place with his chief, among the chieftains as to who shall have the largest and keenest retinue. This means rank and strength, to be surrounded always with a large band of chosen youths – glory in peace, in war protection; nor is it only so with his own people, but with neighbouring states also it means name and fame for a man that his retinue be conspicuous for number and character: such men are in request for embassies, and are honoured with gifts, and often, by the mere terror of their name, break the back of opposition in war.

“When the battlefield is reached it is a reproach for a chief to be surpassed in prowess; a reproach for his retinue not to equal the prowess of its chief; but to have left the field and survived one’s chief, this means lifelong infamy and shame; to protect and defend him, to devote one’s own feats even to his glorification, this is the gist of their allegiance: the chief fights for victory, but the retainers for the chief” (*Germania* 13.2–3, 14.1; Loeb translation)

There has been much debate about what exactly Tacitus had in mind, and whether he was providing an objective description of the *Gefolgschaft* as it

existed in the first century AD. The extent to which it prefigures later evidence for retinues is also hotly debated but not my concern here; it is rather the extent to which it might apply to *earlier* situations. Taken at face value, it states that it was normal practice for young men to be recruited into bands, owing allegiance to a chief, and then to act in such a way that honour was obtained for that chief – notably in battle. Indeed, Tacitus states that apart from war, and possibly hunting,²³ the men were idle, doing nothing except eating and sleeping. In other parts of the *Germania*, the role of these bands in fighting can be seen to have had great importance. As a recent commentator has said, there is no reason to doubt the existence of such military bands, though in Tacitus' account they may be somewhat idealised – “rather a composition based on a variety of commonplaces and anecdotes, in which rhetorical point was more important than accurate reporting” (Rives 1999: 184).

The *Gefolgschaft* system can be traced into later periods, with examples in the literature of Old English and Old Norse (e.g. *Beowulf*), and with possible examples being reconstructed from the Merovingian and other early Medieval contexts. Most is known about it from the early Middle Ages (reviewed by Steuer in Landolt *et al.* 1997; Steuer 2006).

“The armies or warrior bands or ‘Gefolgschaften’ as military units can be levied from the villages of a territory in order to protect them. Out of the clan-based society – due to the necessity of organisation – a tribe will arise, possessing its own territory.... The territories were up to 30 to 50 kilometres wide. These areas of roughly 2500 square kilometres would incorporate about 100 villages with areas of 25 square kilometres per village, each village consisting of 10 households with 10 inhabitants per household which in turn leads to a total population of 10,000 people. Up to 20% of this total number could go to war, which means that such an area could raise an army of up to 2000 warriors...

“The military units (army) can be made up of warriors and a leader (king, *rex* or *dux*) who completely separate themselves from the structures of the clan or tribe and move about in an ‘unattached’ manner in order to plunder and pillage (gaining the spoils of war-booty ‘*Kriegsbeute*’)...

²³ The Latin text is confusing at this point and possibly corrupt; it appears to state that the bands did not do much hunting, but in many editions it is emended, the “not” being omitted, so as to read that they hunted a lot (RIVES 1999: 188–9).

“These military units can be recruited and offer their services to a higher order of state (an empire) as auxiliary units, or as groups of mercenaries” (Steuer 2006: 229).

Archaeological confirmation of such arrangements is naturally scarce and hard to interpret, but one find that has been extensively used for the purpose is the great second century AD bog find at Illerup Ådal in Jutland, with some 750 lances and 660 spears (Ilkjær 1990). In this great find (thought to represent a defeated and slaughtered war band) the evidence of the shields has been taken to suggest that one leader (with silver shield) commanded a warrior band of about 60–80 soldiers with iron shields (Steuer 2006); there would have been several such groups, not all contemporary, given that there were no less than 663 shield bosses present (Ilkjær 2001: 17). Randsborg (1995: 157, 186 ff.) has looked at the same evidence, though at the time definitive publications were lacking and his figures are necessarily more tentative. His figures for the Illerup, Nydam ship I and Ejsbøl North (second to fourth centuries AD) indicate, on the basis of the number of spears and javelins, a fighting force of between 200 and 400, and given that the ratio of spears and javelins to swords was around 3:1 / 4:1, the number of higher-status warriors who engaged in hand-to-hand fighting with swords was between 60 and 100. At Illerup and Ejsbøl the number of shields (presumably the best guide to the number of warriors) was similar to the number of spears and javelins. Possibly a small number of “fine weapon-sets” and other high-status paraphernalia indicate the number of supreme leaders of such a force (v. Carnap-Bornheim – Ilkjær 1996). Todd (1987: 158), however, has warned that such calculations are risky and can only be attempted at the crudest level.

To what extent can this situation be taken back in time, into the Early Iron Age and, possibly, into the Bronze Age? Only with difficulty and caution; though this has not stopped scholars from trying. Randsborg (1995: 157–8) gives an Early Iron Age example: a hoard of 51 iron spearheads from a stream at Passentin in Mecklenburg (belonging to Period VI) might, given the variation in size that may indicate whether they were held or thrown, indicate the size of a fighting force in this find of the sixth century BC (Schoknecht 1974, with discussion of other northern spearhead hoard finds). If the spearmen all had two spears the band might have numbered some 25, or a little less if the spears were divided differently. Randsborg has gone much further than this, however, and attempted to analyse the Hjortspring boat (late fourth century BC), in the same manner, on the assumption that the weapons this and other finds contain provide an indication of those who wielded them, that is, the human complement of the boat. This is

based on the belief that the deposition of the boat followed a battle in the vicinity, allegedly somewhere on the island of Als (just off the eastern coast of Jutland), the boat and weapons being those that were used in an attack on the island by enemy invaders. In this scenario, the various weapons are seen as the property of the 18 warriors who also paddled the boat, led by four commanders (Randsborg 1995: 39–42; 1998 with some additions). (The figure of 18 is derived from the number of seats on the boat, nine on each side; and an assumption is made that the javelins, lances, and shields were divided between them. One feels already that the evidence is being stretched, since there are 67 or 68 shield handles and 52 or 53 shields, along with 65 iron-tipped javelins and the same number of lances.)

This situation, which emanates from a period several hundred years after the end of the Bronze Age, is compared by Randsborg with hoards of metalwork from different parts of the Danish Bronze Age. Thus the contents of the Valsømagle hoards (Aner – Kersten vol. II, no. 1098) are interpreted as the personal weaponry of aristocrats and their followers or heirs. The most elaborate analysis relates to the hoard from Smørumovre, Zealand (Randsborg 1995: 48–50; Aner – Kersten 1973, vol. I, no. 354), which contained 163 items including some 50 axes, 60 spearheads, some other tools and ornaments, and 50 pieces of raw metal. Randsborg interprets this as follows: ten commanders with two spears and an axe each, and 40 rank-and-file warriors (“commoners” or “followers”) with a spear and an axe each. Nor is this all: he hypothesises that the line of battle might have consisted of the 40 warriors, divided into eight platoons of five, each with a commander, plus two senior commanders in the centre.

A somewhat similar analysis, albeit only in outline form, was presented by Kristiansen (1999), whose consideration of the Zalkod hoard from Hungary led him to suggest that they were deposited following a fight: “Hoarding of swords, normally in wet environments, were thus often the conclusion of a combat, a gift to the gods most probably from the winning party. This implies that the weapon hoards give some indication as to the number of sword fighters in combat, but there could of course have been numerous followers with lances and bow and arrows.... with a small group of sword-bearing officers and a large group of lance-bearing soldiers. But we are... mostly confronted with the evidence of combats between small chiefly groups of sword fighters” (Kristiansen 1999: 103). The problem is that swords usually form only a small part of such hoards, which in fact contain numerous items, both martial and peaceful in nature (Fig. 26). Archaeological interpretation would be so easy if the answer was as simple as Kristiansen seems to imagine.

This novel way of interpreting weapon hoards has obvious potential, but also obvious dangers. While it is highly tempting to apply the methodology to many other finds, a step back is necessary in order to consider whether, or to what extent, this type of analysis is justified. Among the problems is that of selectivity: the hoards chosen for analysis might be considered ideal for the purpose, containing as they do a large proportion of weapons, and tools that might have been used as weapons. The other objects (chisels, pins, rings) are for the most part ignored. Similarly, the many other hoards that contain a few weapons and a lot of tools and ornaments are not chosen, presumably because they would not have been suitable for an analysis which showed the desired end. There are other interpretations of weapon hoards, as the discussion in Chapter 8 has shown; and many people find these alternatives more persuasive.

What one might seek to find in the hoard data is some sign of regularity in the forms and numbers deposited, much as has been suggested for weights and weighing (Pare 1999), or for the signs on sickles (Sommerfeld 1994). An ideal distribution of material might be one or two high-quality weapons such as swords, belonging to a commander; and a large or larger number of more mundane weapons, for instance spearheads; the role of axes is ambiguous, since although they might be thought to be primarily carpentry tools, they could theoretically be used at close quarters in hand-to-hand fighting (their effectiveness in this role remains to be demonstrated). By searching through the corpora of material, it is possible to find candidates for such a distribution of finds, but it must be pointed out that the majority of the vast number of hoards do not fit such a pattern. It may perhaps be argued for “elite” hoards, such as those from Apa or Hajdúsámos in the Early Bronze Age; conceivably also for certain well-provisioned hoards with swords and spearheads, such as those from Komjatná (district Liptovský Mikuláš, Slovakia) with their 22 swords, six socketed axes, ten sickles, four arm-spirals, three sheet bronze bands, a fibula, bowl rim fragments, and two bird-ornamented attachments (Novotná 1970: 100–102, Pl. 31–33); or the hoard from Wilburton, Cambridgeshire, with twelve fragmentary swords or hilts and more blade fragments, 113 spearheads (several fragmentary), chapes, spear ferrules, two socketed axes, a palstave, and a small number of rings and attachments (Burgess – Colquhoun 1988, Plates 145–152). If one were to analyse this hoard on the same basis as that accorded Smørumovre by Randsborg, one might imagine that a group of say six commanders were supported by a fighting group of perhaps thirty warriors. However, other explanations are just as likely, if not more so.

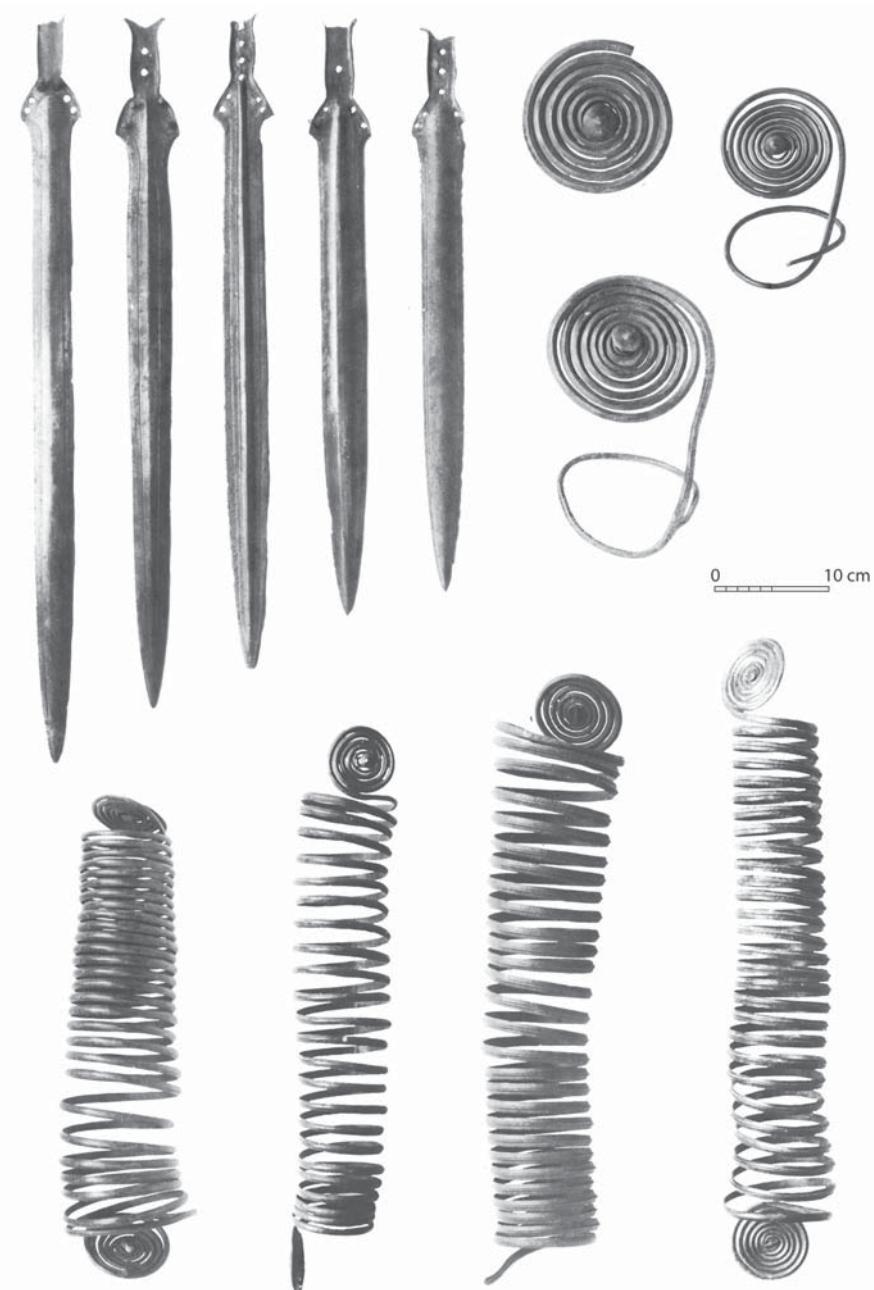


Fig. 26. The Zalkod hoard, Kom. Borsod-Abaúj-Zemplén, north-east Hungary.
Source: MOZSOLICS 1985.

It is certainly tempting to correlate at least some of the great hoard finds of the Late Bronze Age with the numbers of men wielding the weapons in the hoards, but the exercise seems fraught with difficulty. Perhaps the numbers of swords deposited in some of the river and bog finds may bear on this matter: for instance the ten swords dredged out of the Labe (Elbe) at Velké Žernoseky, north Bohemia (Plesl 1961: 155 pl. LIV), the seven swords and one spearhead from Stölln, Brandenburg (A. – B. Hänsel 1997: 211 f.), or the sixteen swords found during ploughing at Krasznokvajda (Mozsolics 1972: 190 ff., Figs 2–3); one might have hoped that in similar manner hoards of spearheads could be construed as relating to the size of the warrior bands which wielded them, as with the fourteen fragmentary pieces from Hoard 2 at Uherské Hradiště in Moravia, found with fragments of flange-hilted daggers and a sickle (Říhovský 1996: 60 Taf. 36A), or the 31 spearheads, mostly perfect, found with eight socketed axes and two “double picks” in Hoard II from Bükkaranyos (*Fig. 21*) (above, p. 135; Mozsolics 1985: 105 f., Taf. 3–5). These finds are, however, unusual.

Hoards consisting solely or mainly of spearheads are in general rare, however, as Hansen (1994: 74 ff.) has made clear. His figures for central Europe show that around one-third of the total number of known hoards contain a spearhead, with no region completely devoid of them, giving a total of some 1000–1100 spearheads and fragments. But what is striking is that in around half the hoards only one spearhead was deposited, with two appearing in about one-eighth of the total, while more than five was exceptional. In those cases where larger numbers are known, such as the great hoards of Transylvania (e.g. Uioara de Sus: Petrescu-Dîmbovița 1978: 132 ff., Taf. 197–8), we are concerned with large collections of many bronze types that are by no means restricted to weapons, let alone spearheads. This is also the situation at Drslavice, with 22 spearheads in a large hoard (Říhovský 1996: 38). A similar situation seems to apply in western Europe.

These figures suggest strongly that it is unlikely that the method proposed by Randsborg will be a satisfactory means of determining if war bands are recognisable archaeologically in the Late Bronze Age. This does not, of course, mean that such bands did not exist; the other types of evidence adduced in this chapter, particularly that relating to raiding, provide the strongest support. Equally, the presence of weapon combinations in graves (cf pp. 144 ff.) can be taken as indicating the existence of elite leaders, equivalent to the *principes* of Tacitus, who would have stood at the head of a war band.

Conclusion: war bands, raiding and warfare

The evidence presented above might be thought to be no more than circumstantial in terms of identifying warfare in the Bronze Age. The creation of forts, and their quasi-territorial spacing in the landscape in many areas, represents perhaps the strongest evidence for the rise of a new type of political organisation – one in which security considerations played a dominant role. If, as argued here, the patterning of these sites reflects a situation where raiding by adjacent groups on each other was a commonplace, then it is possible to infer from what is known about the size of settlements that raiding parties might have been of a certain size, and have been organised along lines that are known from some centuries later. All this tells us little or nothing about the frequency or prevalence of such raiding, and one must admit that site evidence is not helpful when it comes to identifying damage from specific raids (through destruction deposits or the like). At the same time, the continuing trend towards the enhancement of fortifications, as evidenced very clearly at Ram's Hill, suggests that creating an enclosing rampart was a practice which, once started, had to be continued, the ramparts being renewed again and again.

In terms of the bands of men who might have conducted such raids, we are admittedly in a largely speculative area, but taken overall, it seems highly likely that groups of fighters would have formed round notable leaders, much as happened in the *comitatus* of Tacitus. In this, it is noteworthy that things are rather different from the warrior system that I have described as developing in the Early and Middle Bronze Age. Instead of the individual warrior, acquiring his dagger and sword and taking part in very small-scale action on a mainly local scale, we may now envisage bands of fighters under the command of a war leader – who might be termed a warrior but is more like a warlord, almost in the modern sense. Rank and file fighters would be considered warriors but only in a generalised form; it is preferable to consider this not so much a warrior society as a war-band society. This represents a rather profound change in social and political conditions, and it paved the way for what we can reconstruct for the Iron Age.

Chapter 11.

Into the Iron Age

The arrival of iron and the formal beginning of the Iron Age might be thought to have had a drastic effect on fighting in late prehistoric Europe, but this need not have been the case. A major shift in weaponry or the frequency of fortifications might tell us much about such effects; but in most areas such a major shift is not evident – at least, not at the start of the Iron Age. It did, of course, happen some centuries later (the time of the shift depending on area).

By the end of the Bronze Age in continental Europe, at around 800 BC, written history was not far off in southern lands. Hecataeus of Miletus, one of the earliest “logographers”, was born in the sixth century BC and the first book of his *Periegesis* or *Periodos Gēs* (“Journey around the world”) was devoted to Europe (though only surviving as small fragments quoted in the work of later writers); Herodotus, who was born between 500 and 480 BC, drew extensively on his work, while adding much that concerns central and eastern Europe and presumably relates to the Early Iron Age of those areas. Much might have changed in the 300 years that separates the Bronze Age from the time of Hecataeus, or the 400 down to Herodotus, but a more serious problem in the present context is that these authors have little to say about the fighting methods of the peoples they describe; even the ethnography of the Scythians that occupied a considerable part of Book 4 of Herodotus’ *Histories* adds little to what we can reconstruct for the fighting methods of an earlier period and an area much further west.²⁴

During the centuries following the end of the Bronze Age in Greece, much changed in weaponry and warfare practices, particularly in the Geometric period, as is known from the historians and from the archaeological record (Snodgrass 1964). While iron started to appear in Greece in the twelfth and eleventh centuries BC, and became common by the tenth, changes in weaponry did not take place immediately; sword types remained essentially the same, whether in bronze or in iron, down to the ninth century (Kilian-Dirlmeier 1993: 106 ff.). On the other hand, there is extensive evidence for sheet bronze armour, notably helmets, from the Geometric period onwards; examples in the Mycenaean period are exceptional. But the real change came with the development of a quite new form of warfare,

²⁴ His account of the “war” practices of the Scythians (4.64) actually consists of a series of stories illustrating various barbaric customs attributed to them.

based on the hoplite or heavily armed infantry soldier; the effectiveness of this type of fighting is attested in many ancient accounts and has been extensively discussed by modern scholars (e.g. Hanson 1991).

In Italy, where the earliest histories were written several hundred years later (the annalists from the later second century BC; Livy, first centuries BC and AD), we are much more dependent on the archaeological record in terms of arms and armour, and warrior graves, than is the case for Greece. Since Müller-Karpe's fundamental study of 1959, the study of Italian chronology in the first millennium BC has been set parallel to that north of the Alps, assisted by the fact that many artefact forms, including weapons and armour, can be paralleled both north and south of that natural divide (the chronology now revised and refined by Pare: 1998, 1999a).

Stary (1981 and many other works) has provided extensive discussion and description of the weaponry and warfare practices of Iron Age Italy, including both the Villanovan and Etruscan periods. While the latter fall too late in time for consideration in this book, the earlier Villanovan period spans the Bronze-Iron Age transition. Many of the weapon and armour forms in Italy, at least in Villanovan I-II, are essentially the same as those in central Europe. With the start of Villanovan III, it is possible to speak of Etruscan culture since inscriptions in that language are present; but it is usual to see the preceding Villanovan periods as a forerunner of that culture (cf Hencken 1968); Villanovan III sees the development of new forms that have much less in common with those of the north.

Many sword types in Italy in the ninth and eighth centuries were essentially the same as those in central Europe; forms such as the antenna sword and other types of *Vollgriffsschwert* are closely paralleled, but a specifically Italian development was the *Griffzungenschwert* with mushroom-shaped pommel (Stary 1981: 32 ff.; cf Bianco Peroni 1970: 78 ff., Taf. 28–40). Very large spearheads (up to 50 cm long) and a range of axe types become common, as do various forms of elaborate sheet bronze armour, such as helmets with high pointed crests (Hencken 1971: 78 ff.; Stary 1981: 23 f.). Stary (ibid. 46 ff.) has charted the weapon combinations that occur in the different parts of central Italy; in Etruria, for instance, combinations of sword and spear are common, with helmets, pectorals, and sometimes horse equipment and wagons, being present also. Reconstructing the way in which the weapons were used is more problematical, however, since what is found in graves is evidently only a selection of what was available. Stary (ibid. 54 ff.) sees a picture of “eines sehr einfachen, undifferenzierten Militärwesens”, especially for the early stages of the Iron Age when spears were

the favoured weapon in fighting. Short *Griffzungenschwerter* and spearheads: “deuten auf eine undisziplinierte Mann-gegen-Mann Kampfesweise”, in which lances used as javelins played the largest part, with swords being reserved for close-quarters fighting. This contrasts markedly with the appearance of prestige armour during the eighth century; and towards the end of that century marked changes are apparent, with *Griffzungenschwerter* becoming shorter and provided with a narrowed (“carp’s tongue”) end, *Vollgriffdolche* appearing, axes coming in pairs, spearheads in pairs or trios, and round shields being the norm. This, according to Stary, suggests that the method of fighting changed from one based on an exchange of javelins to one where the held and thrust spear was most important, with short sword and axe being used in the follow-up engagement.

This probably parallels what was happening in central Europe, too: while the sword was evidently used widely in Ha C, it is absent in Ha D, when the dagger completely displaced it. Only with the La Tène period did the sword (iron, in completely different form) resume its importance, and mostly in La Tène C-D; these were probably the weapon of larger warrior bands. Deposits of swords and scabbards at La Tène itself can plausibly be paralleled with those of the Nordic area in the Roman Iron Age, and associated with defeated warrior bands (cf p. 164).

There has been ongoing debate about how the first Hallstatt swords came into being and spread across the European continent (Cowen 1967; Schauer 1971b; most recently Milcent 2004: 73 ff.; Dhennequin 2006). This is partly a matter of typology, but also one of the replacement of bronze weapons by iron – a process which was complete by Ha D and certainly in train earlier. Pare has also shown that the traditional assignation of sword types to phases of Ha C is deficient, in that there is clear evidence for a phase lying between Ha B3 and Ha C1 which was characterised by a number of bronze types and particularly by Gündlingen-type swords, whereas Mindelheim swords belong to Ha C1; this transitional phase has been dubbed Ha C0 (Pare 1991; adopted too by Roymans 1991 and termed by him the Gündlingen phase). Furthermore, of the weapons associated with wagon-graves, almost all are of iron, although bronze Gündlingen swords are quite common. The appearance of these distinct sword types suggests a community of smithing traditions across large parts of the European continent, but it also suggests a common ideology where provision of weaponry was concerned. It is not so much that sword deposition in itself has changed since the later centuries of the Bronze Age; but the relative frequency with which it appears in cemeteries such as Hallstatt is striking. As with other categories of

material from Hallstatt, the normal explanation is that control of the salt trade led to the extraordinary richness of grave-goods at this site; there seems no particular reason to imagine that Hallstatt or other sites like it were occupied by particularly bellicose people, rather that access to material goods was particularly facilitated by economic conditions.

As Roymans has discussed too (1991: 30 ff.), and other recent work has elaborated (Fontijn – Fokkens 2007), the pattern of deposition of swords shows a marked change between Ha B3 and the Gündlingen phase (and for the Middle Rhine region, an even more marked change as compared to Ha C1). This goes hand in hand with what he describes as a change in elite ideology, including the construction of monumental tumuli over elite graves, the location of elite graves with respect to other graves, and the provision of elite warrior equipment: the long sword, horse gear, wagons, and bronze vessels. Aspects of this had occurred before, as with the Urnfield period wagon graves such as Hart an der Alz or Poing, but the regular appearance of such ensembles shows that the system of marking out the elite had changed. In the Lower Rhine region, with which Roymans was principally concerned, the creation of clusters of elite barrows and the presence of southern Hallstatt imports suggests a reorientation as well as a new ideology. Many aspects of this can be transferred also to other parts of Europe, notably the core areas of Hallstatt culture such as the eastern Alps or Slovenia.

The emergence, or in some areas re-emergence, of wagon graves in Germany and adjacent areas seems a significant indicator of the importance of the buried individual, and the occupants of such graves are plausibly seen as members of an elite, whether or not they were warriors. But this tells us little about how fighting was conducted, other than that elite chieftains were present in these societies, and that an organisation of male warriors based on war bands probably continued from the Late Bronze Age.

The legacy of the Bronze Age

From what has gone before, one can maintain that Early Iron Age warrior organisation was inherited directly from the Bronze Age. In technological terms, the arrival of regular iron working led to changes: stronger weapons, for which the raw materials were more easily obtained, could be made, even though more advanced pyrotechnological skills were necessary for working them. This did not, initially, lead to a different method of deploying the weapons, though the greater length of Gündlingen and Mindelheim swords might suggest that sword

fighting was assuming more epic proportions. Since it died out altogether in the following centuries, however, one cannot read too much into this.

The rise of fortified sites, both on hills and as stockades in lowland areas, suggests strongly that the practice of raiding continued and indeed increased during the Early Iron Age. The dynamics of hillfort creation and development varied from place to place, but many areas saw a plethora of fortified sites, some large and some small, arising or being reoccupied during the centuries following 800 BC. Haselgrove (2007: 411–13), for instance, has compared the different histories of hillfort creation in central, eastern and northern France, and Luxembourg and the Belgian Ardennes, in the period from Bronze final IIb through to Ha D, from which, in spite of variable information, it is clear that different areas progressed through the first half of the first millennium BC in different ways. As discussed above, the reasons for providing fortifications need not always have been strictly those of defence, though it would be astonishing if that was not their original, and perhaps main, function. The quasi-territorial organisation that I have argued as characteristic of large parts of Europe during the Late Bronze Age – and discerned not only in site spacing but also in artefact distributions – is certainly visible in some areas in the ensuing years, and can plausibly be associated with population groupings of a tribal nature. In Mediterranean lands, one can go so far as to associate some of these “proto-urban” sites and their territories with named tribes as known from the ancient historians; this is the case with the area known as Illyria, on the eastern side of the Adriatic, as Papazoglu’s studies of the literature (1978) and Ceka’s of the archaeology (1985) have convincingly shown. It can be argued that these named peoples were present already in the centuries prior to their first emergence into historical light, but this has to remain speculative.

In reality, the legacy of the Bronze Age in terms of fighting and warfare was that of a pervasively weapon-rich society, and of a class of fighters whom I have here called warriors; in their collective appearance emerging as war-bands. In this respect, Bronze Age practices were ancestral not only to many Iron Age ones but very plausibly also to continuing customs in the centuries during and after Roman rule.

Chapter 12.

Bronze Age warfare and social evolution

The detailed material studies examined in this book have been interpreted as leading to a particular conclusion, that the Bronze Age saw the rise to prominence of warriors and warrior-based societies – not the first warriors, who can be assigned to the late Copper Age, but the first regularised fighters engaging in action primarily against other humans rather than animals. The progression in the creation of weapon types, the customs involved in placing the weapons in graves with other accoutrements, the placing of weaponry in special places other than graves, and the depiction of warriors on art panels and in figurines, all seem to reinforce this notion. While the studies of different weapon types in various countries and contexts might be regarded as an example of piling Pelion on Ossa, of repeating to excess what one or two examples might more economically have brought home, I have considered it worth-while to include them as the sources are rich enough to support a detailed analysis. But demonstrating the existence of warrior societies is far from being the be-all and end-all of an enterprise endeavouring to understand ancient warfare.

If fighting was as common as the case-studies looked at here would lead us to believe, how does it relate to the development of human societies on a wider scale? What role did it play in the increase in social complexity in the period under consideration in this book? Did it enable some groups of people to achieve a status that others did not, for instance in terms of prestige within local groups, or further afield? To what developments in social organisation, at group or higher level, did it lead? How does it relate to the origins of the state? All these questions have been asked and answered by many scholars over the years; they are no less relevant for that, and some remarks are necessary here.

If we return to the questions posed at the start of the book, concerning the nature and role of warfare in later prehistoric Europe, some conclusions are evident. We may ignore the question of the innateness of aggression for present purposes; it is quite evident that people *do* spend time acting violently towards other members of our species and frequently *have* done so in the past. This is not to say that they are predisposed to it, merely that they have often done it; not all of them, not all of the time; but plenty of them, and quite often. So there is no reason to imagine that they were any less inclined to do it in the Bronze Age than in any other period. I see little point in debating the issue of the “pacification” of the past

that has occupied some scholars in recent years (notably Keeley 1996) since I am not sure that this tendency (more prevalent in the Americas than elsewhere) has ever applied to scholars of the European Bronze Age.

Warfare as I have considered it here is not the warfare of modern, medieval, or Roman armies. As I have suggested above, it is probably better not called warfare at all. It was always small-scale, and probably pervasive, given the frequency with which weaponry turns up. Some of it depended on the prowess of individuals, probably men, fighting in single combat or in small groups; some of it involved raids carried out by bands of fighters. In this sense we might more aptly name it “aggression” or “violence”, except that they are too general to express adequately what we are talking about in Bronze Age Europe; most accurately, though least interestingly, we may call it simply “fighting”. Fighting was what certain people did in the Bronze Age; sometimes in earnest, sometimes for show; sometimes singly, sometimes in groups. In a previous article (Harding 1999) I suggested that warfare might be a “defining characteristic” of the Bronze Age. I now think that this phrase was a step too far, in that it labels all people, places and phases with the same tag, whereas I have tried to show here that the development of fighting as a characteristic of the Bronze Age took place over time and affected some people much more than others. But it is hard to doubt that fighting of one kind or another was deeply engrained in the make-up of Bronze Age life, and this for some people meant Bronze Age death.

Social and political evolution

At the start of the Bronze Age, the evidence suggests that societies were small in scale, both numerically and in terms of complexity. While some Neolithic communities were able to undertake major works of monument construction that must have involved the organisation of large numbers of people, the outward signs of ranking – in the form of special grave-goods or elaborate tombs or dwellings – are generally quite slight. During the Copper Age, and more particularly when individual burial became the norm in the Beaker period and Early Bronze Age, differentiation of the dead became the norm, and during the centuries that followed, from around 2000 BC to 800 BC, this tendency became marked. Not all individuals marked in this way were equipped with weaponry, and if they were, it was not necessarily functional (e.g. battle-axes or maces). The practice was, however, common enough for us to be able to reconstruct a society in which some people were gaining power and prestige at the expense of others, and were

presumably maintaining that power by a variety of means that kept rivals at bay or suppressed. The times when these strategies failed may be the times when we decry warlike activities most clearly in the archaeological record.

How people acquired such power and prestige has been much discussed. The “sources of social power” that were suggested in an influential work by Michael Mann (1986) were ideological, economic, military and political, and in general terms one can accept this for the Bronze Age, as I have discussed on another occasion (2000: 392). Naturally military means of acquiring and maintaining power are those that are the principal concern of this book but they were not the only means. In any case, many aspects of warfare in the Bronze Age could equally well be characterised as ideological, for instance the role of weaponry in marking out warrior status, even though it was sometimes not actually used in combat.

The wider question that arises is of the social organisation that surrounded those who acquired and wielded the power. In Chapter 10 I discussed the question of the nature and size of territories that might have existed around communities based in hillforts, or that might be indicated by the existence of individual workshops. The scale of social organisation that these territories suggest is not clear, but for many commentators, Timothy Earle for instance, the term “chiefdom” is usually applied. I have discussed this term, and the critiques that have been applied to it, elsewhere (Harding 2000: 388 ff.), along with suggestions that what was involved was not always a hierarchical system, but a “heterarchical” one in which societies could be organised in a fluid way, cross-cutting each other on a variety of different levels and in different manners (Ehrenreich *et al.* 1995).

The Mann model suggests various routes to social complexity, of which the military is only one. Another is economic. Among the factors that contribute to this route are various aspects of subsistence farming, including the division of land. Land boundaries – whether demarcating fields or larger units (estates) – are usually taken as indicating the existence of two processes: ownership claims; and pressure on land. Crops can perfectly well be grown without defined field boundaries, and animals can be herded without fences, as happens in many countries at the present day. In such communities, peasants mark the edges of their plots by reference to features like trees or horizon markers, or simply agree with their neighbours by pacing or long habituation; animals are tended by full-time herdsmen who spend their days on the open hills with their charges, intervening only to keep them away from danger spots and off the land of neighbouring villages. So the rise of boundaries almost certainly points to aspects of control.

The small fields that mark the earlier stages of the Bronze Age in Britain and form clusters of perhaps six to ten separate fields were presumably the economic area of a single farmstead or hamlet; the substantial boundary works that came into existence in the later centuries of the second millennium BC, and are thought to represent large ranches or estates, suggest something on an altogether larger scale. What is more, they are on occasion linked to enclosures that in some instances develop into full-scale hillforts (Danebury may be one example of this process).

Control of land and control of people go hand in hand. People whose existence depends on the production of food in a basic subsistence economy are usually not in a position to object to the rise of others who proceed to create bonds of obligation towards them – the route to serfdom for the many, and to authority and power for the few. Antonio Gilman (1981, 1991) suggested that the investment of time and labour in taking land into cultivation, in the Mediterranean through creating vineyards and olive groves for instance, was something that primary producers would not want to lose; the bonds to the land it created thus represented a form of rent (not money, of course, but “staple finance”), payable in kind to those who had claimed ownership of the land and were prepared to back up their claims by force.

In times of stress this situation can be supposed to have increased in intensity. Environmental pressures such as climatic deterioration or soil impoverishment are commonly supposed to have represented one such cause of stress, though given the resilience with which humans can meet such challenges, explanations of this sort seem more of a *deus ex machina* than a real reflection of how the situation might have developed. Nevertheless, there are grounds for believing that in some parts of the Bronze Age world the environment was significantly, and irreparably, damaged: on British moorlands the process of podsolisation began during the Bronze Age, almost certainly through a combination of cultivation and climatic change, leading to a leaching of minerals out of the topsoil and a consequent loss of fertility. Once altered, these soils would never again regain their ability to support arable crops at levels that made it worthwhile to persevere with them; indeed, most are still like that at the present day.

Can we then suppose that such developments led even further, towards the creation of larger units, organised through the coalescing of many smaller units – in other words, states? The circumscription theory of Carneiro (1970) has been influential in proposing a route towards statehood that included force as a means of exercising control in times of stress on the system. As discussed in Chapter 1, warfare has often been seen as one of the mechanisms for social adaptation,

usually because it brings functional benefits with it, such as defence of territory against marauders, or the ability to create higher-level social order, to the benefit of all. Yet it remains far from clear whether warfare in itself promotes these benefits, rather than being part of a wider package of social interactions that led to the creation of administrative arrangements that characterise state societies.

I have argued in this book that war in the Bronze Age was a regular part of life for some people, and in this sense it will have contributed to many aspects of the articulation of society in terms of varied roles, functions, and identities. It was arguably an engine for social development, possibly even for rapid change at certain times – such as the Middle-Late Bronze Age transition. It had ramifications that reached into many corners of Bronze Age society: metal procurers and metalsmiths were required to produce the large quantity of weaponry that circulated; traders and travellers carried the goods around; young men were probably trained up to attain warrior status and join war bands; many other craftsmen were required to produce the equipment which warriors needed. In this sense, war was pervasive in Bronze Age society; and it is the results of that pervasiveness that lead us to be able to study it in the archaeological record today.

BC	Britain & Ireland	France	C. Europe	N. Europe	Italy	SE Europe	E. Europe
700	Llyn Fawr			Period VI			
800	Carp's Tongue			Period V	Iron Age 2		
900	Ewart Park / Dowris	Blackmoor		Ha C		Basarabi	
1000	Wilburton / Roscommon		Br. Final IIb	Ha B2/3		Mézőcsát	
1100			Br. Final IIIa	Ha BI	Iron Age I		Chernoles
1200	Penard / Bishopsland		Br. Final IIa	Ha A2	Period IV	Final Bronze Age	
1300			Br. Final IIb	Ha A1		Protovillanovan	
1400	Taunton				Period III	Gava II	
1500	Acton Park	Bronze	Bz D			Belozerka	
1600	Wessex 2	moyen	Bz C	Lausitz			
1700			Bz B	Tumulus BA	Period II	Gava I	
1800	Wessex 1	Bronze ancien	Bz A2			Noua-Sabatinovka	
1900	Wessex 1	Bronze ancien		Věteřov			
2000				Únětice	Period I		
2100	Beakers		Bz A1				
2200		Beakers		Singen Nitra			

The chronological table is for guidance only, and is not intended to be accurate in detail as far as start and end dates of particular periods are concerned.

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