

EARLY IRON AGE GREEK WARRIOR 1100–700 BC



**RAFFAELE D'AMATO AND
ANDREA SALIMBETI**

ILLUSTRATED BY GIUSEPPE RAVA

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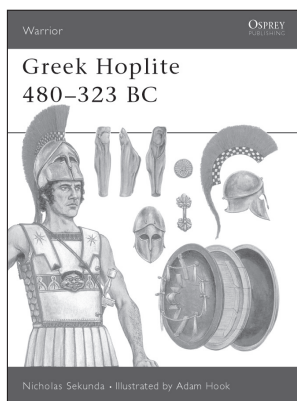
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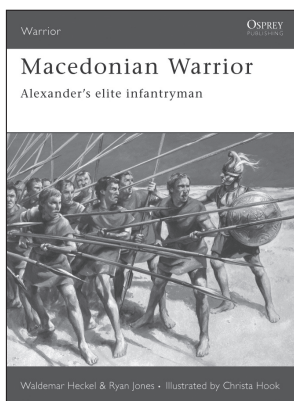
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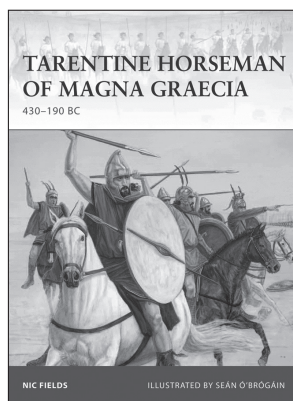
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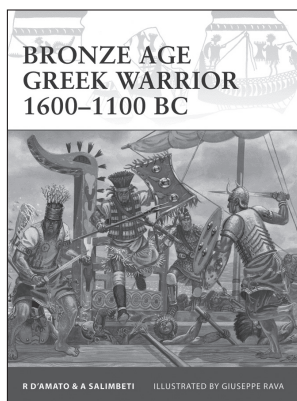
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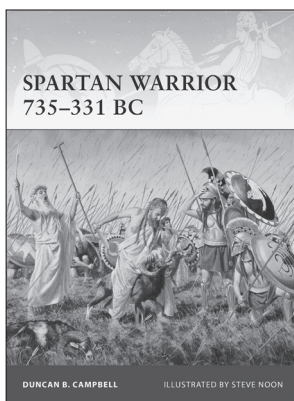
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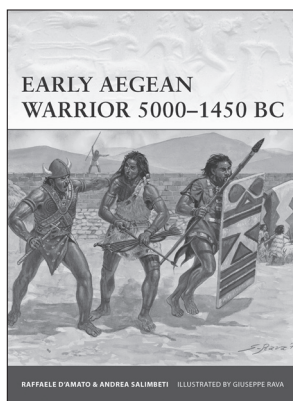
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DEDICATION

To Professor Khaled Asaad (1934–2015), a true Homeric hero of our day.

A NOTE ON CLASSICAL REFERENCES

References to classical texts are given in shortened form, beginning with the author's name, and followed by the relevant book number, chapter, and section separated with periods, e.g.:

Thucydides (1.5–6) refers to book 1, chapters 5–6.

CONTENTS

INTRODUCTION	4
CHRONOLOGY	8
MILITARY ORGANISATION	10
Manpower	
APPEARANCE AND EQUIPMENT	11
Clothing • Weaponry • Spears and javelins • Swords, daggers and knives • Slings • Axes Bows and arrows • Armour and protection • Helmets • Body armour • Chariots • Mounted warriors	
CONDITIONS OF SERVICE	45
The aristocratic warlord • Leisure activities • Training and discipline	
BELIEF AND BELONGING	48
THE WARRIOR AT WAR	50
Siege warfare • Naval warfare • Methods of warfare • The First Messenian War (735–715 BC)	
MUSEUMS AND FURTHER RESEARCH	59
BIBLIOGRAPHY	62
INDEX	64

EARLY IRON AGE GREEK WARRIOR 1100–700 BC

INTRODUCTION

Towards the end of the 13th century BC the eastern Mediterranean, Anatolia and the Aegean, as well as continental Greece, were troubled by a series of events that deeply changed the political order of the ruling bodies in these areas. In this period the threat posed by the so-called Sea Peoples, originating from various parts of Central Europe and the Mediterranean – chiefly directed against Egypt, the Palestine-Syrian coast, Cyprus and Anatolia – also affected the Greek mainland. It is not by coincidence that in roughly the same period (around 1200–1100 BC) the leading Achaean palaces and citadels began to decline, progressively losing political power, and the great palace complexes were destroyed or abandoned.

The fall of the palatial societies began a period of cultural, economic and social regression that engulfed Greece. During this ‘Greek Dark Age’ there was a general decline in technical skills, a drop in living standards and wealth, and a drastic fall in population. Large-scale immigration took place on the western coast of Asia Minor and some of the islands lying off that coast. These movements do not appear to have ended until the early 9th century, when a measure of stability returned to the Greek mainland. The Greek Dark Age was also characterised by a reduction in commercial contact with peoples lying beyond the Aegean, and by general insecurity. Thucydides (1.5–6) characterises this period as one of smaller, poorer, generally weaker cities, with reduced communication or trade, threatened by piracy and plunder, and which felt the need to arm themselves with iron weapons.

A krater from Thermos Aetolia, manufactured at the Voudeni workshop, representing marching warriors, 11th century BC. A protective skirt similar to the later-period *pteryges* seems to be depicted on the warrior on the left. The strips were made of perishable material like linen or leather. The central warrior seems instead to be wearing some sort of lower abdomen protection or *mitra*. A medium-sized round shield is also shown, together with a large rectangular one. The decorations on these shields appear to be similar to those found on bronze specimens from Central and Northern Europe. (Archaeological Museum of Patras; authors' photo)



There was, however, a certain hint of continuity between the material culture of the Late Helladic Period and the early Iron Age, especially in peripheral regions such as Aetolia, Phocis and Locris, as shown by the extensive field work conducted in recent years. Many material features of the Greek Dark Age seem to merge seamlessly and directly with those of the late Bronze Age, especially in terms of warfare and military technology.

The key source that helps us better understand this troubled age of Greek history is archaeology, especially with regard to weaponry. In this period, iron was clearly the principal metal used for the production of weapons and tools. But the widespread use of iron did not mean a sudden or total conversion to this metal. The study of early Iron Age cemeteries and burial sites has produced iron finds in greatest volume, and the range of weapon types and categories has greatly increased as a consequence. Iconography – very rare in the 11th–9th centuries – acquires greater prominence during the Geometric Period (c.900–700 BC). Furthermore, the works of the early Greek poets, which are best exemplified by Hesiod, provide us with detailed information on the topic under discussion here. As far as the Homeric poems are concerned, although their descriptions refer mainly to the culture and civilisation of the very late Bronze Age, they can still help us understand aspects of warfare dating back to the Greek Dark Age. Such works ignore the movement of people in the period following the fall of the citadels, portraying a period of stability, but at the same time certain historical aspects that brought about the fall of palatial society can be identified.

Throughout the 12th and even into the 11th centuries BC, a substantial number of settlements in Achaea (the northernmost region of the Peloponnese) did, however, remain occupied. Here the signs of fire and destruction, which characterise the years shortly before 1200 BC, seldom appear; moreover, family funerary practices continued to use chambers or, more rarely *tholos* (or beehive) tombs, and there was a continuity in traditional Achaean material culture in terms of dress, ornament and military accoutrement. Furthermore, the excavations in recent decades in Achaean settlements such as Mycenae, Tiryns and Midea have shown that after the destruction occurred around 1200 BC, the citadels with their Cyclopean fortifications were repaired and reoccupied.

Such evidence suggests that changes in Greek material culture were neither radical nor absolute across all regions, and that a form of sub-Achaean civilisation continued for a further two centuries at least. This is evident, for instance, in Achaea, Patras, eastern Attica, Cephalonia, the Cyclades and the Dodecanese. Furthermore, islands like Cyprus witnessed a large increase in population and items of Achaean material culture, possibly caused by the arrival or incursion of refugees from troubled areas.



Bronze statuettes of warriors, 850–750 BC. (National Archaeological Museum of Athens; authors' photo)



Two bronze statuettes of warriors. Left: Geometric Period, from the third quarter of 8th century BC (Archaeological Museum of Olympia, inv. no. B2000; authors' photo). Right: Geometric Period, from the third quarter of 8th century BC. (National Archaeological Museum of Athens; authors' photo)

In contrast, around 1200 BC the Dark Age began in regions such as Messenia and Laconia. Thessaly is a case apart, because the main palace in this region, Iolcos, was destroyed at a later date than the palaces further south, and the settlements around it show no signs of destruction – indeed, almost all remained occupied. Thus Achaean culture declined in different phases in different areas of Greece.

According to the ancient historians, Achaean civilisation was brought to an end chiefly by the 'Dorian invasion', beginning in the crucial year of 1104 BC. The apparent absence of archaeological evidence for the arrival of the Dorians has led many scholars to argue that the 'Dorians' and other speakers of western Greek dialects were actually the lower classes of the Achaean population, who rose in revolt against their masters.

During the Post-Palatial Period (c.1200–1000 BC) and the early Iron Age, local warfare concerned itself with the establishment of new political centres and systems of social organisation in various territories. That the latter involved the simultaneous immigration

of homogeneous population groups, already organised along similar lines, should be considered extremely doubtful. It is indeed possible that some groups moved from the more barren parts of central and northern Greece to the heartland of Achaea, but when this happened and under which circumstances remain matters for speculation. It seems more likely that such movements occurred, at the earliest, in the late Post-Palatial Period, when conditions had already deteriorated, rather than at its beginning.

As noted, our knowledge of Greece during its Dark Age is obscured by a lack of iconographic material. We have to depend heavily on archaeological evidence as a crucial aid in reconstructing the society of the period, including its military aspects. The changes that took place between the collapse of Bronze Age palace cultures and the rise of archaic city-states were momentous. The last half-century of this process witnessed sweeping cultural and social developments, including the rapid growth and consolidation of communities, the revival of literacy and the foundation of religious sanctuaries.

It is only towards the end of the period under discussion, i.e. from about 800 BC, that warrior figures reappear on pottery, notably in Athens, providing an additional source of evidence. The literary sources comprise scattered references in later writers, often overlaid with a mythological gloss, which can only be used with great care. The most appropriate source, especially for warfare, would appear to be Homer, though caution must be used in evaluating the evidence contained in his epic poetry, which refers only to late Bronze Age military technology. For the end of the period in question, the Boeotian poet Hesiod provides further information from a totally different perspective to Homer's, that of the small-scale farmer.

Some scholars argue that the evidence provided in Homer's work applies to the period 800–700 BC. The view of the authors of this book is that in Dark Age Greece, the *oikos* (i.e. family or home)-based society developed from late-Bronze Age Achaean settlements, which Homer describes in his poems – i.e. a society headed by a king (the *basileus*) surrounded by aristocrats who dominated all major aspects of community life, including warfare. Given the limited resources of the period, warfare during the Greek Dark Age must have been on a limited scale and have consisted mostly of the raiding of livestock and the pursuit of other booty under the leadership of aristocratic warriors who used it not only for the acquisition of goods, but also to build up a following to defend and, where possible, enhance their power. According to Thucydides, in the section of his history detailing the early development of Greece down to the beginning of the Peloponnesian War in 431 BC:

There was no war on land that led to the development of any considerable power. All wars were fought against neighbouring peoples and the Greeks mounted no foreign expeditions with the aim of subduing others. The smaller communities did not ally with the most powerful nor did these less powerful states join on an equal basis to make expeditions in common. Rather warfare was waged between neighbours. (1.15.2)

The profusion of horses, chariots and prestigious weaponry that equip the warrior rank depicted on Geometric pottery provided an archaising model by which aristocratic families or groups could mark their exclusivity and authority. In some cases the imagery's close resemblance to Bronze Age finds suggests a direct appeal to the local past. In addition to elite self-projection through fine ceramic and metal objects, these emerging hierarchies find material expression in differential treatment of the dead, wealthy warrior graves, feasting ceremonies, hunting and fighting.

By the mid-8th century BC the archaeological evidence shows a series of crucial political, economic and social changes occurring in the Greek world. In the political sphere, monarchy disappeared to be replaced by aristocratic rule and finally by the development of a new form of community: the city-state (*polis*). The process of synoecism that gave birth to political entities such as Athens, Argos, Sparta, Knossos, Corinth, Eretria, and Thebes depended on a new kind of political and religious authority, which emerged from the households of local leaders into the public sphere. The process set different groups to compete for social rank. Less-stable groups of tribal leaders with their followers and more-stable chiefdoms alike merged into larger aristocratic groups with their claims on power and authority.

Generally, early Iron Age settlements matched preceding late Bronze Age ones, but new settlements were also constructed along roads and near water sources, with graves and scatterings of potsherd clustered round different springs and wells rather than intensifying around existing nuclei. This highlights the strength and highly localised nature of such social grouping. Conversely, when it comes to the exercise of political authority, one might reasonably assume that the principal settlements were key arenas for decision-making. In reality, in places like Nichoria or Thermon the architectural evidence appears to show that hierarchical relationships existed at these sites. The discovery of large halls, like the one in Nichoria (one of the largest Greek Dark Age examples), indicates that these places were centres of power at that time.

Warriors painted on pottery,
8th century BC. (Museum of the
Ancient Agora, Athens; authors'
photo)



It is in the context of these momentous changes that a new style of warfare developed which was to be the determining factor in land warfare in Greece until the defeat of the Greek city-states by Philip II of Macedon at Chaeronea in 338 BC. This mode of warfare was based on a group of heavily armed citizen-infantrymen (hoplite – the name deriving from the word for shield, *hoplon*) organised in a phalanx formation. The phalanx can be defined as a body of heavy infantry drawn up in close rectangular formation at least several ranks deep. The hoplite's equipment followed a fairly standardised pattern.

CHRONOLOGY

The traditional method of calculating a chronology for the Aegean Bronze Age and early Iron Age (through the study of recorded historical events in Egypt and Mesopotamia, and aligning archaeological finds of exported or imported objects such as Aegean pottery or Egyptian scarabs with these) has been criticised in recent years. It has been argued that a chronology based on 15th-century BC dates contains a wide margin of error and the complexities of the calibration curve for the closing centuries of the second millennium BC preclude the precise dating of artefacts using a 15th-century BC schema alone.

Recent analysis of material finds from Egypt has, however, confirmed that Egyptian archaeological and more recent radiocarbon-dating chronologies are compatible and strengthen the scholarly conviction that the Thera dates (i.e. those based on the volcanic eruption on the island of Santorini, which provides a fixed point of evidence throughout the entire Aegean region) are correct. Studies of material from Argos and Aegina in Greece and more widely in the eastern Mediterranean all lead to similar conclusions.

At Assiros in northern Greece a combination of meticulous excavation, careful sample selection and good fortune has provided the first long, robust

sequence of chronological markers from Greece for the latter part of the Bronze Age and the start of the Iron Age. Such evidence has shown that, in some cases, accepted dates can be revised to between 70 and 100 years earlier than previously thought. Furthermore, this new research also argues against a radical shifting of dates by as much as two-and-a-half centuries, which some researchers have proposed.

Late Helladic IIIC, c.1190–1060 BC

1250 BC	Date of the Trojan War, according to Herodotus. The Parian Marble inscription dates it to 1209 BC, while Eratosthenes of Cyrene, the librarian of Alexandria, dates it to 1183 BC.
1250–1100 BC	The palace at Tiryns is destroyed; it is rebuilt later on a smaller scale.
1200 BC	Ekhelāwōn holds power as the last ruler of Pylos; tablets record troop movements to guard the coastal regions against a threatened invasion from the north. The destruction of Pylos, and parts of Mycenae lying outside the citadel.
1200–1100 BC	Destruction of part of the citadel at Mycenae: in 1150 BC the granary burns down, probably by accident.
1104 BC	Traditional date of the Dorian migration (or ‘invasion’) to the Peloponnese, with the Heraclids (‘the descendants of Heracles’) establishing a Dorian dynasty there that later spreads to Crete and other islands.
1087 BC	Beginning of the so-called Ionian migration, according to the Parian Marble inscription.

Proto-Geometric (1000–900 BC)

920–820 BC	Proposed dates of the life of the poet Hesiod; other sources date his life to around 700 BC.
907 BC	Diognetus rules as king (<i>basileus</i>) of Athens.

Geometric Period, c. 900–700 BC

900 BC	Agis I establishes the Agiad line as the monarchy in Sparta.
880 BC	Evidence exists of Lycurgus’s reign in Sparta.
c.850 BC	Homer probably lives around this time.
Late 9th–8th centuries BC	Greek cities establish colonies throughout the Mediterranean basin and along the Black Sea coast to remove excess populations from the mother cities.
776 BC	The first Olympic Games are held.
757 BC	The length an Athenian citizen can hold the office of chief magistrate – or Archon – is reduced to ten years.
754 BC	Evidence exists of Polydorus’ rule as King of Sparta.
750 BC	Sparta becomes the ruler of the Perioeci (free but non-citizen inhabitants of Laconia); Amyclae is conquered by the Spartans.
748 BC	According to Pausanias (6.22.2), King Pheidon of Argos marches an army to Olympia, seizes control of the sanctuary and presides over the games. (See c.700–670 BC entry below.)

735–715 BC	The First Messenian War, between Messenia and Sparta; the destruction of Asine by Argos, in support of the Messenians. (The date is the most probable, though other suggested dates are 743 BC, 730–724 BC and 710 BC.)
736 BC	The lack of a Messenian victor in the Olympic Games in this year provides evidence for dating the First Messenian War.
734 BC	Beginning of the Spartan colonisation of southern Italy, ordered by the Spartan king Polydorus.
725 BC	The Lelantine War between Chalcis and Eretria in Euboea and their allies.
719 BC	Polydorus, King of Sparta, is murdered by Polemarchus, a member of a distinguished Spartan family.
716 BC	Traditional date for the end of Heraclid rule in Lydia.
Sub-Geometric Period and beginning of Archaic Period, c.700–680 BC	
c.700–670 BC	Alternative date for the rule of King Pheidon of Argos. Under his rule, Argos is reportedly the strongest state in Greece.
687 BC	According to Pausanias, Creon is serving as the first annual Archon in Athens at this point. Alternative sources date this to 684 BC.
685 BC	Beginning of the Second Messenian War between Messenia and Sparta. It will last until 668 BC.
682 BC	The battle of the Great Foss in the Second Messenian War; the Messenians are slaughtered.

MILITARY ORGANISATION

Very little is known about military organisation during the Greek Dark Age. Hesiod (*Fragmenta Hesiodica* 23a–24) mentions the figure of the *lawagetas*, later called the *poimena lawon*, i.e. the leader of the army. Whether this refers to a role still extant in some Greek communities of the 10th and 9th centuries, or is merely a throwback to the Achaeon Age (c.1600–1100 BC), is difficult to determine.

The king was now known as the *basileus*, an evolution from the Achaeon district officer known as the *qasireu*. There is little evidence of the presence of rich palaces, but these kings controlled the village squares and main roads – the new arteries of political life – on which their armies (or better, their raiding parties) marched. The armed *demos* (people) honoured their wartime leader the *basileus*, who made sacrifices to gods before and after battle, praised the bravest and punished the cowardly. Over time the role of the *basileus* became more akin to that of a state official as opposed to that of an absolute ruler.

In Sparta, the presence of two kings from at least 900 BC could attest to the dual roles played by both a *wanax* (high king/overlord) and *lawagetas* during the late Bronze Age. This monarchical dualism possibly linked back to two Heraclid dynasties (the original, mythical ‘Doric invaders’) who co-exercised power equally during the Greek Dark Age.

Sparta’s military organisation presents itself differently to the rest of Greece. Its military structure was born from the union of four *obai* (‘villages’) to which

an additional village was added at a later stage to make five. This union formed an aristocratic and military *polis* with a limited urban centre. This must have been a difficult period in Laconia, which saw the rise of a new form of socio-political and military organisation, governed by severe laws attributed to the semi-mythical Spartan legislator Lycurgus. Around the end of the 8th century BC, following the internal conflict that arose from the creation of the hoplite and that of a middle class between Spartans and the subjugated helots, all the city-states within Lacedaemonia were now under the control of Sparta. The word Lacedaemonian not only referred to the inhabitants of the region but also to the army as a whole.

Manpower

As noted previously, during the Greek Dark Age the population shrank significantly. A new demographic explosion began around 800 BC, although the conservative Dorian states of Sparta and the Cretan kingdoms had less trouble than the other Greek states in sourcing men for military service. During this period there was no uniform government across the Greek world, and during the isolated wars that took place the recruitment of the few hundred adult males required to form an army may well have been the duty of the relevant local *basileus*. Those warriors who considered themselves *aristoi* (noblemen), and who distinguished themselves through the possession of weapons, had their personal retainers (as shown by the so-called chieftain of Lefkandi), but the numbers of the latter would not have exceeded a few hundred at most.

In the Geometric Period, the population expansion and the rise in power of city-states (*poleis*) like Sparta could have meant that warriors were recruited from across the whole area of control (for instance, Laconia), creating armies containing thousands of men, such as the one that fought in the First Messenian War. In other *poleis*, like Athens, civic life continued without interruption from the late Bronze Age, and thus these city-states could rely upon a more consistent number of *aristoi* and their retainers to defend the interests of the whole community.

APPEARANCE AND EQUIPMENT

Clothing

Images on pottery show a remarkable continuity in the use of the male *chiton* from the late Bronze Age through the Geometric Period. The eastern version of this tunic was typically short, normally reaching down to knee height, sometimes slightly below; the Greek *chiton* normally stopped at mid-thigh length. Longer examples are of course known, and presumably owe their existence to a renewed acquaintance with oriental models.

Like the *chiton* in the late Bronze Age, early Iron Age examples would also probably be made of linen or wool. The *kriophoros* (goat-bearer)



A pottery dish from Tomb 58 in Palaepaphos-Skales, Cyprus, c.1000 BC. The base of the dish is decorated with two warriors who appear to be equipped with short scale cuirasses, neck protectors, a bow, a spear and a sword. The figures are attempting to kill a large two-headed snake. Also shown are three quadrupeds and a bird in flight. This probably represents a mythological scene, recalling the Greek myth of the slaying of the snake of Lerna by Heracles and his companion Iolaos. (Cyprus Museum, Lefkosia, Cyprus; authors' photo)

represented on the jewellery from Khaniale Tekke Tomb II (Crete) wears a short tunic decorated with two zigzag rows across the chest and horizontal lines in the lower part. His dress recalls that of one of the heroes represented on the Fortetsa bronze quiver.

Hesiod, in his *Works and Days* (536ff.), gives us a vivid description of 9th-century BC clothing, recommending, as protection against the cold:

a soft cloak (*chlainan*) and a tunic (*chiton*) to the feet to shield your body – and wind plenty of woof on a thin warp: wrap this around you, so that your hairs do not tremble nor stand up straight shivering along your body. Bind around your feet well-fitting boots (*pedila*) from the leather of a slaughtered ox, padded inside with felt; when the seasonable cold comes, stitch the skins of newly born kids together with the sinew of an ox, so that you can put it around your back as protection against the rain; wear a well-made felt cap (*pilos*) upon your head, so that you do not get your ears wet.

The scarce iconography of the Greek Dark Age does not allow a clear reconstruction of male dress, although a statuette in terracotta from Crete gives us a good image of a local ruler dressed in a kilt, a heavy cloak and a flat cap, which is probably the forerunner of the Classical *petasos*. The heavy cloak could be of linen, and it is probably no coincidence that at the ancient cemetery in Patras the urns of many cinerary graves have been found covered in a wide linen shroud, probably the cloak of the warrior. In the Geometric Period the iconography shows warriors clad in multi-coloured short tunics, which, on Crete and in Asia Minor, seem to be clearly influenced by Near Eastern fashions.

There are some notable changes in dress and ornaments between the late Bronze Age and the early Iron Age. In particular, we note the disappearance of beads and, in most regions, weights attached to garments and fabrics, which warriors also wore (although in Lefkandi the use of these continued). Traditionally emphasis has been laid on the supposed change from sewn and buttoned Achaeans and Cretan dress to pinned 'Dark Age dress', which has often been given cultural significance as a Dorian introduction. In the grave of the warrior found at Atalanti, *fibulae* (brooches) and rings were found, alongside a Naue II sword, an iron knife and a bronze *phalaron* (shield boss).

A

TRADE BETWEEN DORIC AND ACHAEAN WARRIORS, TIRYNS, 1100 BC

(1) Achaean Post-Palatial Period warrior, reconstructed from Grave XXVIII at Tiryns. His armour and weaponry includes a bronze helmet and spear, an iron dagger and a round shield with a bronze boss. The absence of metal in the greave area of the grave may suggest the use of an early type of linethorax (linen armour), visible on contemporary pottery from the same location. The divided crest on his helmet is based on various late Achaean representations.

(2) 'Doric' warrior. This warrior, from the edge of the Achaean world, may represent one of the newcomers who spread throughout most Greek-speaking areas during the collapse of the palatial societies. His weaponry is strongly influenced by Central European forms, as reflected in his bronze armour, here copied from the Pilismarót example, and in the Pass Lueg crested helmet. His offensive weapons conform to Cretan examples from the early Greek Dark Age (as found at Tylissos and Moulana), considered by Hans Jürgen Hundt to represent earlier forms of 'Doric' weaponry.

(3) Warrior from Achaea. The equipment of this trading warrior is based on the krater from Thermos Aitolia. Note the earlier type of *mitra* (lower abdomen protection) hanging from his simple bronze cuirass. The embossed shield, clearly illustrated on the pottery fragment, represents a late evolution of the Achaean large body shield.



Scene of battle from an embossed *mitra-zosteres*, 9th century BC. The manufacturing techniques here can be compared with the objects of the early orientalised series in Attica, datable to prior to the mid-8th century BC. The scale pattern (an Assyrian convention for rocks), which appears at the top, shows a strong eastern influence. The women are wearing a shawl worn symmetrically across the shoulders fastened by a pin. Such pins have been found in huge numbers in Crete, giving a precise chronological date for the development of the orientalised pin type of the Geometric Period. The dress of the goddesses, enclosed in their shrine and defended by bowmen from an attack by charioteers, marks a new step in the development of Hellenic dress. (Archaeological Museum of Heraklion; authors' photos)

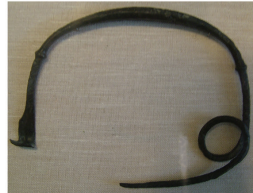


Pinned dress consisted of a blanket-like length of material sewn along one or both sides, perhaps folded over at the top like the later Greek female *peplos* (shawl), and pinned at both shoulders. This has been linked by some scholars to further evidence of pinned dress in Central Europe, leading to the conclusion that it may have been introduced by a new ethnic group. Other experts in their survey of Peloponnesian pins have argued for a continuous tradition of pin use on the mainland from Bronze Age times. They argue against the idea that the use of pinned dress represents an intrusive foreign custom.

In Bronze Age graves most of the pins are to be found near the skull and only a few are reported as having been found near the shoulder; none demonstrate any remnants of cloth attached to them, in contrast with several early Iron Age pins. In the light of the evidence available, it appears unlikely that pinned dress was already common in Bronze Age Greece. Pins were certainly available though, and could have been used in new ways late in the Achaeon period and in the early Iron Age.

Both pins and *fibulae* often occur as single examples in Post-Palatial finds, which suggests that they were used to pin cloaks, shawls or funeral shrouds. At Lefkandi an unusual kind of pin has been found in three burials with weapons. The pins have an iron body with beads – each made of different material (faience, amber and ivory) – threaded onto it. According to Lemos (2002), the difference could be indicative of the rank of the warrior. The high social status of the Lefkandi warriors is indicated by the presence of gold diadems, attachments and faience beads.

In the 9th century BC, styles of dress appear to have remained unchanged, although *fibulae* conforming to Blinkenberg Type III (such as that found in



Khaniale Tekke Tomb II) are more commonly found and in more substantial and elaborate forms. The discovery of a bronze and glass bead necklace in a grave at Gavalou in Locris, which may be 9th or even 10th century BC in date, suggests that more elaborate types may have been more current than is evident at present. To some extent, it seems that by this time new types of ornament were being used to demonstrate wealth and status, especially headbands and earrings. Some necklaces, bracelets, spiral ornaments worn in the hair, and fine finger-rings with bezels are also known, and seals of ivory and stone begin to appear in the 8th century BC. Traditional forms of dress also continued, but during the 8th century BC there seems to have been a move away from the practice of providing elaborate metal jewellery as grave-goods in places where it had previously been customary.

The graves on Rhodes are more informative. While straight pins are comparatively rare on the island, *fibulae* are extremely numerous. In a series of 7th-century BC graves at Vroulia, *fibulae* have been found almost exclusively in pairs and thus it can be deduced that they were used as shoulder pins.

Weaponry

In the late Bronze Age period and at the beginning of the so-called Greek Dark Age the most crucial innovation in warfare was the introduction of what Hesiod calls 'black iron' (*eske sideros*; *Works and Days* 151) in place of bronze as the major material for weapons. The development of ironwork in the final phase of Achaean civilisation was the prelude to the wide diffusion of this metal in the manufacture of weapons. The latter answers the question posed by Owen Rees relating to the Homeric poems, namely 'How can a Bronze Age story have Iron Age technology?' Snodgrass has called the Greek Dark Age 'the Iron Age of Greece' – a cultural epoch in which iron had become the main metal for practical use. Following a period of transition, in the late 12th and 11th centuries BC a few objects made of iron appear, but around 1000 BC a complete shift to iron as the material for making tools and weapons was completed. In the light of a comparative analysis with Etruscan material, Snodgrass has stated that the working method of forging a sword in piled or compact structure was common and preferred by early Greek smiths. The sword appears to be the first weapon

A selection of *fibulae* (dress pins) from the Geometric Period. *Fibulae* have been found in large numbers in several areas of Greece, such as Philia and the Artemis Enodia sanctuary at Peray (some 2,000 specimens). They have also been found in graves of women, in pairs – one for each shoulder. A warrior grave in Athens has revealed a *fibula*, and *fibulae* were also found alongside weapons in Lefkandi. (Top left) from Attica, 670 BC, with inscribed battle scenes (National Archaeological Museum of Athens; (top centre) 700 BC, from Beotia (British Museum, London); (top right) from Attica, c.700 BC; (bottom left) c.11th–10th century BC, Archaeological Museum of Heraklion; (bottom centre) 13th–11th century BC (Archaeological Museum of Heraklion); (bottom right) from Palamidi, 1050–1025 BC. (Archaeological Museum of Nafplio; authors' photos)

made of iron; by the end of the 11th century BC spears and other weapons were also being made from this material, although bronze was never abandoned. In any case, both a shortage of bronze and the control of iron as a resource by the elite comprised only a short transitional phase (11th–9th centuries BC): from the 8th century BC the use of bronze dominated, including in defensive equipment.

Artistic representations indicate that the nude male body was the norm in the 8th century BC but not exclusively. Male appearance is also defined by warrior dress. Standard military equipment for Geometric Period warriors includes a helmet, shield, sword and spears (often in pairs); greaves, belts and corselets are also shown. In active combat, bows and swords are favoured. In both painted and sculptured forms, chariots bear one or two warriors, but they may have been used for general transport as well, as indicated by a bronze charioteer from Olympia who wears a *petasos* (sun hat). Warriors exhibit a specific definition of masculinity through their offensive and defensive equipment, particularly when worn off the battlefield. This was also a typical image of Bronze Age Homeric heroes, who routinely wear swords to dances and banquets: their weaponry's symbolic aspect is at least as important as the practical.

Some scholars have extrapolated an 'index of state formation' in armament, correlating the display of weapons in Geometric Period cultures with a high level of personal autonomy in relation to centralised form control. Visually, weapons mark a man as a member of a materially advantaged group, a challenge to outsiders, a force to be reckoned with, and importantly, a protector of the community with concomitant claims to a range of social, political and material privileges. A sword or dagger may well have been the premier symbol of manhood acquired in adolescence.

Weapons have mainly been found in graves. Sometimes, as in Athens and Lefkandi, swords were first bent, and were found together with other weapons and items – usually spearheads (in three tombs), arrowheads (in one tomb), knives (in two tombs) and whetstones. The burial of weapons with deceased men is a widespread phenomenon across Greece in the 9th to mid-8th centuries BC. For some scholars the individuals are not buried dressed according to their warrior status, but rather they appear in their customary

B

LATE ACHAEAN COLONISTS CONFRONTING SEA INVADERS, CYPRUS, PALAEPAPHOS-SKALES, c.1000 BC

In Grave 49 of the Skales necropolis, near Palaepaphos, an aristocratic Aegean 11th-century BC warrior was found. His name, Opeletau (in classical Greek, Ofeletes), was recorded on a large bronze cup. The warrior (1), armed with a simple bow, is reconstructed from the scene represented on a dish from the same necropolis. His head is protected by the recently restored conical helmet from Kalorisiki. The use of scale armour in late Achaean communities in Cyprus is not only recorded in Homer and contemporary art but also confirmed by the archaeological finds from Pyla-Kokkinokremos and other sites. As depicted in the pottery, his scale armour is fitted with a Levantine-style neck protector.

The second warrior shown on the Skales necropolis dish (2) appears to be armed with a late-Aegean Type H bronze sword. He is fully armoured, with his legs covered by the greaves found at Enkomi, and a 'hedgehog' leather helmet protecting his head. His panoply is completed by a spear and a round shield with the three bosses found in Kalorisiki.

The Achaean raider shown here (3) belongs to the final wave of Sea Peoples still ravaging the Aegean Islands in the early Iron Age. His equipment consists of a banded bronze corselet, a long Naue II sword, a bi-horned helmet (copied from a Proto-White Painted Ware pottery cup from Palaepaphos-Hasan) and a large Proto-Dipylon shield (represented in pottery from the same area).



Bronze and iron spearheads from various locations, Crete, 13th–10th centuries BC. (Archaeological Museum of Heraklion; authors' photo)

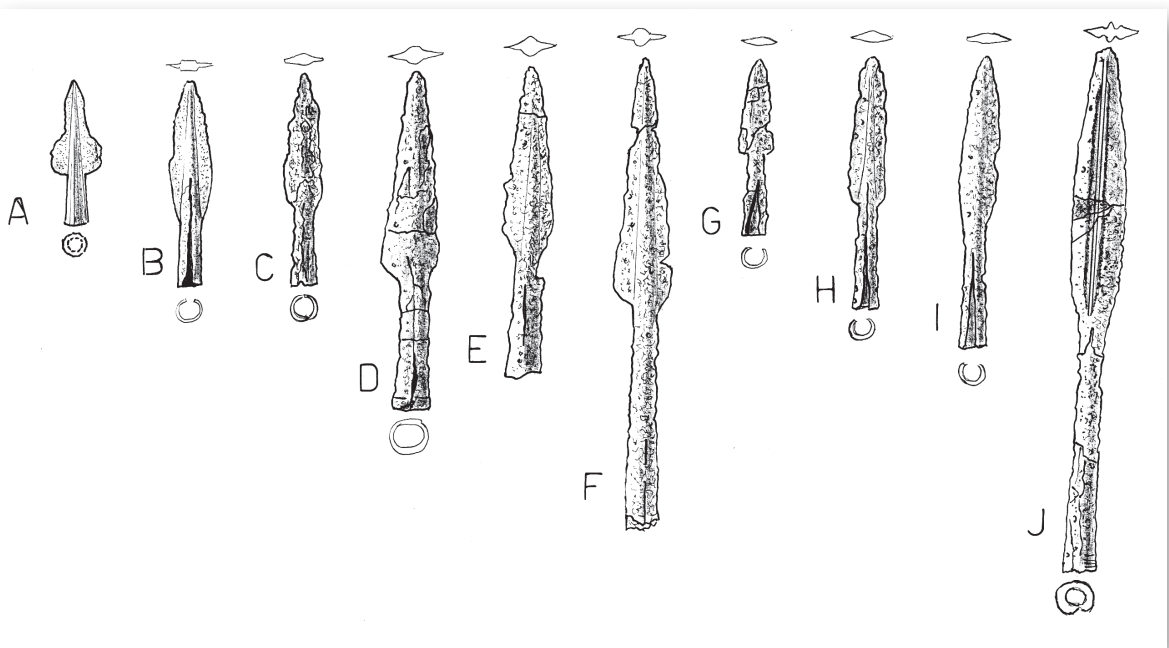


peacetime dress, which consisted of swords and spears but not armour. The emphasis on offensive weapons rather than defensive armour characterises the deceased as a man of action, 'capable of using force'. The custom of weapon burial declines in Attica towards the end of 8th century BC but persists somewhat longer in the Argolid.

The image of the generic aristocrat as warrior raises the question of what battle was actually like in the early Iron Age, and in particular, how to distinguish its late 8th-century BC material expression from Bronze Age Achaean culture, with which it shares numerous artistic themes and motifs.

It should first be noted that Geometric Period and Achaean Period visual depictions of battle differ significantly. The Geometric imagery of battle between opposing bands of fighters is largely confined to the Late Geometric I (760–700 BC) Attic grave-marking kraters from the Dipylon cemetery. This Attic group of battle scenes owes much to both Near Eastern and Achaean models, and seems to represent a limited, localised production. For the final three decades of the 8th century BC we find multi-figured battle scenes to be the exception, with the focus shifting to individual military or athletic contests.

Permeating art with the imagery of battle, bloody sacrifice and elaborate ceremonial weaponry promoted an official ideology of palatial control. This clearly stands apart from early Iron Age forms. Some scholars note that the elaboration of 'violent' manhood could be linked to harsh conditions at the time: the greater the competition for scarce resources and the more brutal the fight for survival, the more likely that men would adopt a discourse of violence. Although this might apply to Greek societies in earlier stages, it hardly explains Archaic representation. Here we find a cultural elaboration of the warrior way of life even as material prosperity was returning to the Greek mainland. It is not the survival of the community but maintenance of a status- and honour-driven lifestyle that motivates Greek warfare in this period. This outlook seems to be rooted in the 9th and 8th centuries BC, when codes of honour and fear of shame provided social control in the absence of codified law and centralised authority.



Spears and javelins

The key offensive weapon was the heavy thrusting spear, which was 2–3m in length. It had a heavy iron or bronze head and a butt spike both for supporting the spear in the ground at rest and as a secondary weapon in case the point was broken off. This did in fact tend to happen.

A key change in weaponry occurred around 900 BC with the rise in importance of missile warfare. Javelins become visible on representations of warriors fighting from chariots in late Bronze Age pottery from the Peloponnese, but only become common in graves dated to between 900 and 700 BC. This would indicate that this type of warfare began in the closing phase of the Bronze Age – as attested by Homeric poetry – and continued into the Greek Dark Age. Between 900 and 700 BC a normal warrior burial included two or three spears (as at Khaniala Tekke in Crete), indicating that missile warfare had become dominant. This type of warfare appears on Attic painted pottery from c.750 to c.725 BC. The evidence of Late Geometric Period pottery seems to further support the importance of missile warfare in at least one part of the fighting. Invariably the pottery from the graves at Dipylon represents warriors holding two javelins, together with a sword, as their main offensive weapons.

The shapes of most of the spear and javelin heads found fall into the Snodgrass types (belonging to the Bronze Age), because they continued to be made of bronze for a little longer than swords and daggers. Snodgrass assigns the Athenian iron spearheads to Type A, i.e. featuring a leaf-shaped blade, a long socket and a midrib running to the tip. The bronze ones were assigned to Type C (small, with a leaf-shaped blade) and Type D (with the socket as long as the blade, rounded shoulders and a pronounced midrib). A last specimen from Athens was classified as belonging to Type F (for a smaller spear, with a sharp point and a midrib running to the tip). Iron spearheads of types D, E, P and especially J are well exemplified in several settlements, especially in Thessaly, while Type Q seems to be more rare, only being known in Thessaly, Bassae and Delphi.

A selection of early Iron Age spear and javelin heads from Boeotia, Attica and the Peloponnese, with sectional views above and beneath.

A: Thebes, 1100 BC (bronze).
 B: Tiryns, 1100–1050 BC (bronze). C: Athens, 1000 BC.
 D: Athens, 900 BC. E: Athens 900 BC. F: Athens, 900–800 BC.
 G: Asine, 800 BC. H: Tiryns, 700 BC. I: Tiryns, 700–600 BC.
 J: Athens, 600 BC. In central Greece spearheads were found in Atalanti tombs and in Thessaly. A (Snodgrass Type V) spearhead from Rhodes, with a narrow blade and prominent midrib, probably of Cypriot origin, spread to Crete and the Aegean during the 10th century BC. Other spearheads came from Delphi, Marmariani, Homolion, Platycambos and Ialysos. (Andrea Salimbeti)

LEFT

A bronze spearhead from Tiryns, Grave XXVIII, 1050 BC. (Archaeological Museum of Nafplio; authors' photo)

RIGHT

Early geometric spear tips, from Tiryns, 10th century BC. (Archaeological Museum of Nafplio; authors' photo)



All 11 of the spearheads found at Lefkandi are of iron. Some of them have a ring collar at the broad end of their socket, made entirely of bronze or iron. An early example of a Proto-Geometric (1000–900 BC) butt has also been found at Lefkandi.

Around Athens in the Proto-Geometric (c.1000–900 BC), and in Cyprus during the Early Geometric (900–850 BC) I Period, bronze spearheads continued to be used. The predominantly bronze nature of the personal objects found in Attica dating to the Sub-Mycenaean Period (1100–900 BC), especially visible in the necropoli of Salamis and Kerameikos, can be interpreted as evidence of the continued use of this material in this area. By the time the custom of burying weapons was readopted in Proto-Geometric Attica, the manufacture of iron weaponry appears, however, to have become dominant in the region.

Swords and daggers (in iron and bronze) from the early Cretan Iron Age, 10th–9th centuries BC. The blade of the sword at bottom right does not have parallel edges, but tapers evenly from the hilt to the tip (Snodgrass variant Type IA). (Archaeological Museum of Heraklion; authors' photos)

Swords, daggers and knives

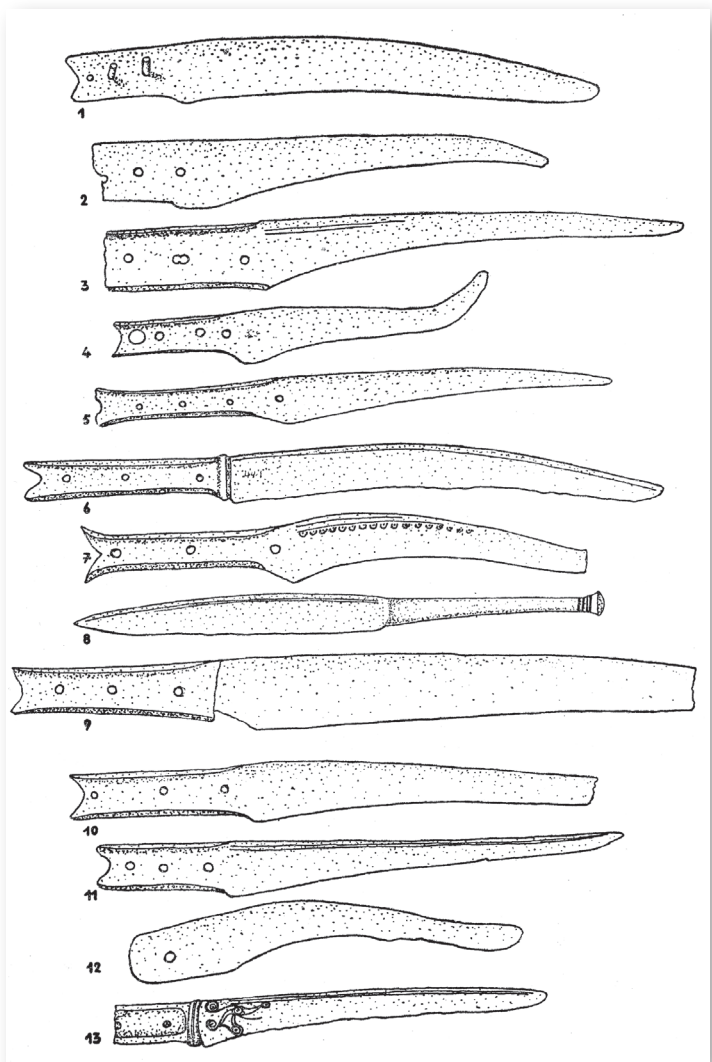
Some late Achaean bronze swords, such as the Type H, could also have still been in use in the Aegean during the very early Iron Age. A Type H sword appears to be represented in the dish from Tomb 58 in Palaepaphos-Skales cemetery, Cyprus, dated around 1000 BC. The grip-swords of the late Bronze Age are still present in great numbers in the graves, but from the 11th century BC iron began to take the place of bronze in their fabrication.



The metalwork of the early Iron Age is marked by the use of iron alongside copper-based alloys, while silver, lead and gold were used more sparingly. The adoption of iron metallurgy occurred at roughly the same time throughout Greece, from Macedonia to Crete. The years 1050–900 BC signify an intermediate phase in the use of iron and therefore a degree of imitation of late Bronze Age bronze types is witnessed in iron forms. The simultaneous appearance of bronze and iron objects of the same type is well attested, as is the combination of iron and bronze parts in the same object. It is generally accepted that ironwork technology in Greece was probably introduced from Cyprus or the Levant.

The main sword used by the Greek Dark Age warrior is the *Griffzungenschwert* ('grip-tongue sword') – also known as the Naue II). This sword, in its successive bronze and iron forms, was one of the longest lasting of all sword types. First appearing in the late Bronze Age, it lasted well into the Iron Age, a span of 500–700 years. This sturdy sword was well suited to both cutting and thrusting, although the Naue II was designed to deliver a powerful slash. It first spread into Central Europe, Scandinavia and the British Isles. By 1200 BC it had spread to Greece, Crete (tombs II and III at Khaniala Tekke), the Aegean Islands, the Levant, Palestine and Egypt. Whilst prevalent in Greece and the Aegean, it is in Central Europe that the greatest number has been found. In all these areas it was the standard sword until the 8th and even the 7th century BC, with iron replacing bronze but still retaining the same basic design. Bronze swords, however, occasionally reappeared in the Geometric Period.

Three main groups of Naue II swords can be identified: A, B and C. In Group A, most of the blade's cross section was fairly thick, but it thinned considerably at the edges. It should be pointed out that blades with a diamond or biconvex cross section thinned gradually, as opposed to dramatically, throughout their width. The I-beam above the hilt provides the flanges that helped to keep the hilt plates in place. Seven rivets were fairly common; however, some had as few as three and others as many as nine. In Group B, the transition throughout the blade's cross section is more gradual. The fishtail or 'ears' at the end of the hilt are also less dramatic. Eight rivets were generally used on this type to secure the hilt plates. Group C swords have a relatively



Examples of bronze daggers, from Zafer Papoura and the Cave of Psychro, Crete, 1125–1075 BC. (Drawing by Andrea Salimbeti after Hundt)



An iron sword (above) and dagger (below) from Tiryns, Grave XXVIII, 1050 BC. The large (and better-preserved) sword measures 31cm in length, but some scholars, like Snodgrass, consider it to be an example of a long dagger. (Archaeological Museum of Nafplio; authors' photo)

thick cross section which barely thins until near the edges. Normally seven rivets were used to secure the hilt plates. The section projecting past the grip portion of the hilt must have been for a pommel. Since there is no rivet hole in the tang, the pommel must have been secured in some other fashion.

Most of these swords measure 60–70cm in length. A good edge was a must. If a straight outline and a pommel with prominent ears dominated the early Greek Dark Age sword form, during the Geometric Period swords were characterised by a semi-circular pommel, made of bone or wood; the evidence for this comes from iconography, and in particular from the warriors represented on the Dipylon pottery. The hilt was sometimes covered with ivory plates, as is noted from the Lefkandi finds. The hilt of the swords from Halos, Tumulus A, were also gilded and had iron rivets. The presence of ivory raises the question as to whether they were made locally using imported ivory, or whether the swords were imported whole, perhaps from Cyprus where Palaepaphos-Skales has provided evidence for the production of such iron weapons. The Cyprus theory is supported by Snodgrass, while Jane C. Waldbaum considers that swords evolved in parallel fashion on Cyprus and the continent. Scabbards were made of wood, and covered in cloth, as noted in the Lefkandi finds.

The Naue II was certainly the most effective weapon of the Bronze Age, and continued to serve through the Greek Dark Age, albeit in iron; according to Kilian-Dirlmeier, it was produced without interruption in the same local workshops, which the warriors no doubt patronised.

Following Cowen's study of European swords, Catling has divided the Naue II swords into four groups based on the shape of the hilt (particularly the pommel), the location of the rivets and the presence of 'blood channels' or ridges. Group I have a fish-tail hilt, five to eight rivets and blood channels related to the Nenzingen sword types, which were of European origin. Group II are considered to be an Aegean version of the Nenzingen swords. They differ from Group I in that a spur was added to the centre of the pommel and in that they are larger and have ridges instead of blood channels. Group III swords are considered to represent a second wave of northern influence; smaller in size and with blood channels instead of ridges, they at first partially overlap with and then continue in later use than Group I swords. The swords



of Group IV developed out of Group III and lack both homogeneity and a direct connection with the swordsmiths of Europe.

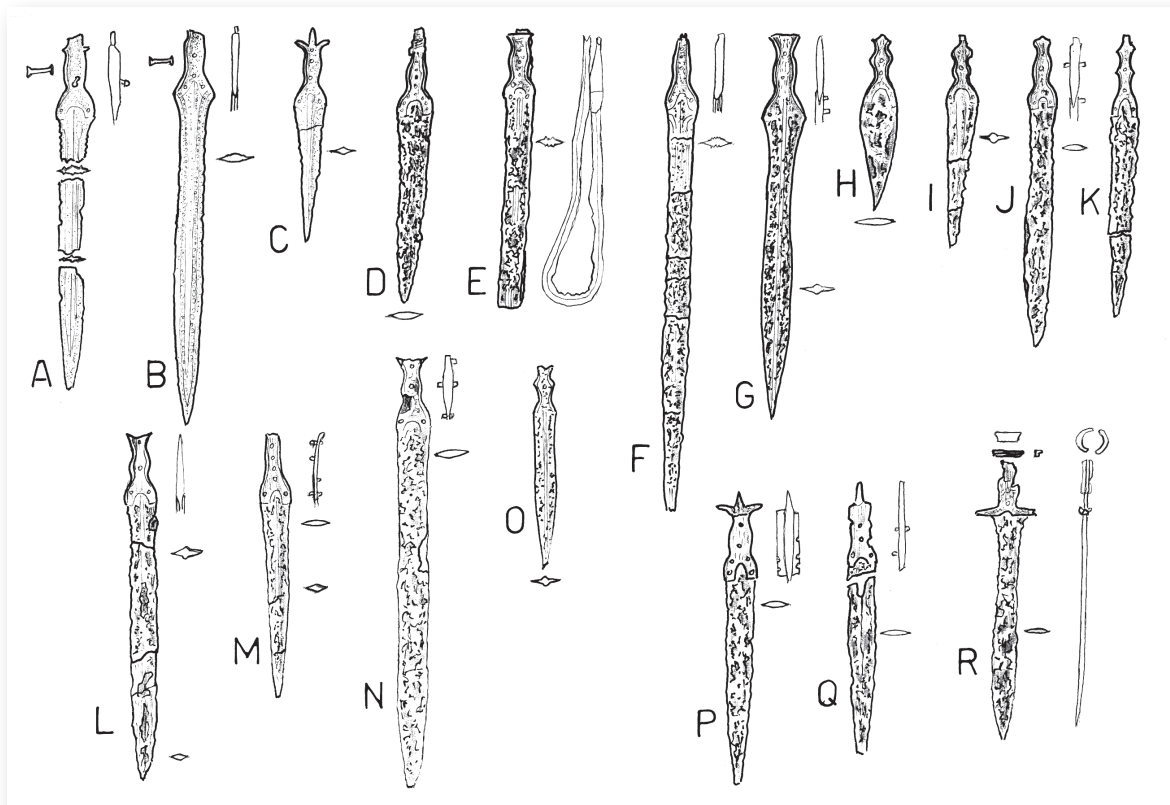
Snodgrass mainly assigned the Proto-Geometric swords to his Category I, i.e. those featuring a blade with almost parallel edges and a flat, elliptical cross section (e.g. the Marmariani sword). Kilian-Dirlmeier had divided Proto-Geometric and Geometric swords into four main types, according to the shape of the hilt and the shape of the blade. Her Type I is represented only by the example found in the grave of a warrior in Athens; her Type 3 is restricted to Cretan swords found in Iron Age graves; and other swords fall into her types 2 and 4, the former having a curved outline and angled end (sometimes with the blade tapering towards the point, as at Lefkandi), and the latter having pommel ears and a handgrip that swells out, corresponding to Snodgrass's Type I. With the exception of the three single-edged examples from Halos, all the Thessalian swords fall into Snodgrass's Type I, with parallel-edged swords coming from mainland Greece, Crete, Euboea, Samos, Rhodes, Cyprus and the Near East.

Although this can be taken as a basic classification, the three main scholars who dealt with Naue II swords agree in that the typology of swords established by Catling for the Bronze Age cannot be applied in an absolute way to iron swords with the same shape, mostly due to their poorly preserved state, which does not allow us to discern sufficient detail to be able to assign them to types. For instance, the midrib on some swords is very hard to make out due to corrosion.

As far as sword usage is concerned in the Geometric Period, the Homeric evidence (born of Achaean oral tradition) indicates that there were three different words used to refer to a (cut and thrust) sword: ξίφος (a word not of Greek origin, whose source is unknown), ογ (Arcadian origin) and φάσγανον (Cypriot origin). Bekker relates the last two to the ancient Achaean language spoken by the communities in the Bronze Age.

Usually, the difference between a dagger and a sword lies in the length: blades over 50cm are considered swords, with those shorter than this as daggers. At the tail end of the Late Helladic and early Iron Age, a new type of dagger appeared, whose general shape and design (as witnessed at Athens, Tiryns, Lefkandi and Argos) was similar to the Naue II swords. Mostly these daggers were made of iron and have been found on the Greek mainland,

Iron sword and spearhead from Argos, Geometric Period, 9th century BC. (Archaeological Museum of Argos; authors' photos)



Crete and the Aegean Islands. The examples in Tiryns Grave XXVIII dated c.1050 BC are all-iron daggers of the *Griffzungendolch* ('handle tongue') type; these are noted for their relationship to the predominant sword types in the Greek Dark Age. In contrast to the daggers of the Naue typology, the Cypriot models derived mainly from local forerunners, and were very different in shape according to the finds in early Cypro-Geometric cemeteries. In Kamini (Naxos) an example of an unknown type was found, dated to the Late Helladic Period IIIC. The dagger with an ivory pommel found in a female burial at Lefkandi (near Eretria in Attica) is unique.

Knossos (Crete) has revealed beautiful examples of Naue II Type iron daggers, 17.5cm long, dated around 1000 BC. Other interesting examples of this type dated c.1000–900 BC have been found in the settlements of Praisos, Fortetsa and Arkades, and a possible warrior's knife has been found in Khaniale Tekke Tomb II. The average length of these daggers is 23–28cm.

The earliest iron items to become widespread in the 12th century BC were knives with bronze-riveted hilts of ivory or bone; one example even has rivets capped with gold or silver. During the Proto-Geometric Period, most knives are of simple form with a concave edge and convex-shaped blade. The hilt was usually in ivory or bone secured with bronze rivets, and some of them show the remains of a scabbard with traces of wood or bone on the butt. Their size varies from 10 to c.15cm, although there are exceptions such as the example from Kerameikos (PG28) and the one from Lefkandi (T3, found in the same grave as the famous centaur), which measure almost 28cm long. Single-edged knives might have served as tools, but the shape of many of them points to use in warfare. In Athens they are mainly found alongside

other weapons, suggesting that they were part of the warrior's kit, as were the examples found at Locris, Thessaly (Atalanti, Marmariani, Magnesia, Chloe and Krannon), Rhodes (Ialysos) and on the Dodecanese (Kos).

Developments in iron production are clearly visible in a group of knives with narrow hafts and curved or offset blades; mostly in iron, they have bronze rivets preserved in the haft, for the attachment of a hilt plate made of some perishable material. Bronze rivets could be more easily set by hammering when cold, whereas iron rivets are commonly set when red hot. These items could have been used in ceremonial gift exchange with some ultimate commercial motivation. It is surely no accident that the earliest examples in the Aegean appear at key sites: 11th century BC Knossos (Gypsades Chamber Tomb VII, length 15.9cm), Perati and Lefkandi in Euboea. Similar specimens come from Enkomi and Kalloriziki in Cyprus (made within or shortly after the 12th century BC), and even Hama in Syria. The suggestion that these knives were all Cypriot is not archaeologically supported and some elements suggest production in different regions. These knives also appeared in later periods, like the sample from Vrokastro (Crete) dating probably to the 9th century BC, and another from Kakavi in Epyrus. Other iron items of probable Cypriot origin are not particularly common in the Aegean, although a find from Cyprus suggests that the first Aegean iron daggers and short swords could have been based on a Cypriot prototype. It is also perfectly possible that the Cypriot parallel forms of early Aegean iron items reflect the movement of Cypriot-trained smiths rather than trade, and some pieces may have already been locally made by such people in the 12th century BC.

Many Cretan battle knives of the final phase of the late Bronze Age and the Greek Dark Age show a general shape subject to heavy influence by external models, far from the local tradition. Of particular note is a group of Cretan knives, variously dated between 1250 and 950 BC, whose grips are clearly influenced by Central European models, or perhaps manufactured by the new conquerors of the island during the early Iron Age. Some of them show similarities with the Hallstatt knives conforming to Schwung typology, others had their grip not shaped like a flat plate but decorated with a double line, a further characteristic of the middle Bronze Age European knife. The grip tongue ends in fish-tail form, and the folded edges of the grip tongue, the number of nails and their distribution, the well-formed space separating the blade from the handle and the shape of the blade, with its groove along the back, remind us of eastern Central European knife types, making coincidence seem unlikely. The Middle European influence is even more visible on a specimen from the Cave of Psychro on Crete. The tail-shaped grip is linked with various other specimens from Crete, where it is possible to see a wide variety in shape. Its grip with lateral ribs is very distinctive, as well as the shape of the cutting edge with its S curvature. The ornamentation of the blade is the most Middle European element of this knife; the two lines engraved under the back of the blade are also visible on other specimens from Crete, but the dotted half-moons are exclusively Middle European in style (Urnfelderzeit culture, like the similar specimen from Estavayer), a clear sign as to the origin of the knife. Linked with this knife are two further specimens, one undecorated from Phaistos, and another with concentric circles and spiral lines on the blade, again from the Cave of Psychro. Milojević has evidenced the linking of this ornamentation with the Middle European style of the *Wasservogelprotomen* (waterfowl head) singled out by Kossack on daggers, knives and swords of European origin.

OPPOSITE

A selection of Greek early Iron Age swords and daggers. A: Knossos, 1050 BC (bronze). B: unknown provenance, 1050 BC (bronze). C: Barc, 1050–1000 BC (bronze). D: Athens, 1000–900 BC, Kerameikos, Tomb PG, short, with a tapering blade and a narrow hilt. E: Athens, 1000 BC. F: Athens, 900 BC, Tomb N, Agora. G: Lefkandi, Tomb T, 900 BC. H: Fortetsa, 900–850 BC. I: Fortetsa, 900–850 BC. J: Fortetsa, 850 BC. K: Knossos, 850 BC. L: Athens, 800 BC. M: Athens, 800 BC. N: Eretria, 800–750 BC. O: Philia, 750 BC. P: Vitsa 750–700 BC. Q: Vitsa, 650–600 BC. R: Vitsa, 600–500 BC. The main swords recall the Bronze Age specimens with ears. There are only a few variations in the form of the hilt and the shape of the grip which allow us to distinguish a few sub-types with regard to the Snodgrass Type I typology: the swords whose hilts have a convex outline (G), for instance. Variations also occur in their length and in the relationship between the pommel's width and that of the handgrip. Sword F has a hilt with rounded shoulders and a long spur without 'pommel ears', and conforms to Kilian-Dirlmeier's Type 1. All the swords from Athens are of Snodgrass Type I and Kilian-Dirlmeier's types 2 and 4, with one of them (D) conforming to Snodgrass's IA variant, being shorter, with a tapering blade and a narrow hilt. The swords from Athens and Lefkandi show considerable similarity. Up to 2002, five swords from the Proto-Geometric period have been excavated and examined from Athens, compared to four from Lefkandi. Other swords came from Marmariani, Homolion and Atalanti Halos, Volos-Kapakli, Krannon, Sarantaporo and Pythio, as well as the tholos tombs at Nea Anchialos and Agioi Theodoroi. (Andrea Salimbeti)

Slings

Sling projectiles are rarely present in early Iron Age tombs. Three have been found in Marmariani Tholos V; the first is stone and measures 6.5cm in length, and is an ovoid with pointed ends, while the other two are made of clay and are of the same shape as the stone one. The sling was, as per the late Bronze Age, a typical weapon of the light infantrymen (*psiloi*) such as those mentioned by Pausanias when describing the bloody battles between Messenians and Spartans (4.7.2–6).

Axes

Axes have been found in graves alongside other weapons (spearheads, daggers and knives), indicating they probably formed a supplementary part of a warrior's equipment. Examples of iron double adze (a cutting tool) – echoing the Cretan Bronze Age – have been found at Cretan sites such as Khaniale Tekke Tomb III and Lefkandi Grave 54, together with a knife and a *fibula*. In the Proto-Geometric Grave 40 at Kerameikos a war axe and a shield boss have been found together. Fragments of a sample found in Khaniale Tekke Tomb II measure 16cm. Most of the axe heads so far found are made of iron and of the trunnion type, with a broad, single blade. Among the weapons in a warrior's grave at Lefkandi were two axes, one of the trunnion type and the other a double-bladed example. Axes were almost certainly used in battle, although the iconography provides little evidence for this.

Bows and arrows

Iron arrowheads are rarely present in early Iron Age graves certainly when compared to the large numbers found dating to the Bronze Age. Although excavations at sites such as Kerameikos in Athens, Lefkandi, Chloe (Ancient Persia) and the North Cemetery at Knossos have provided new material, both physical (an arrow tip was found in the shoulders of the skeleton of a young warrior at Kerameikos) and representative, it can still be assumed that archery played a relatively minor role during the early Iron Age. In the grave of the warrior at Toumba cemetery 35 iron arrowheads were found, along with one (smaller) bronze example. The hydria (water-carrying pot) in which the ashes of the warrior were placed also provides us with one of the few representations of Greek Dark Age archers. At Lefkandi, the arrowheads are barbed and tanged, without a boss at the tip. It should be noted that usually arrowheads found in graves are associated with swords,



Arrowheads of the early Cretan Iron Age, 10th–9th centuries BC. (Archaeological Museum of Heraklion; authors' photo)



Two beautiful examples of bronze shield bosses, 13th–11th century BC, from Moulana, Crete. Both measure about 190mm in diameter and feature an embossed decorative edge. (Heraklion Archaeological Museum; authors' photo)

but not spears. For example, one of the arrows at Athens was found with an iron sword, a knife and a shield boss.

Crete offers more evidence for martial archery activity during the transition from the late Bronze Age to the early Iron Age. In the Geometric Period, the presence of a bronze quiver, together with a bronze belt with representations of archers, found at Fortetsa, clearly indicates use of this weapon by a warrior elite. The bronze quiver is decorated with the head of a thick-necked lion. Archers are also abundantly represented on the bronze shield from the Idaean Cave on Crete.

We should however consider that the rarity of arrowheads dating from the early Iron Age may partly be the result of our almost exclusive reliance on grave evidence, where much of the Bronze Age material comes from occupation sites. After 750 BC we have more evidence for the role of archery in warfare, as bows can be seen in numerous battle-scene representations on Late Geometric Period vases.

Armour and protection

Shields

The archaeological evidence for Greek Dark Age shields comprises bronze bosses or discs (*phalara*). They are of varying sizes, but most feature a raised centre and a wide flat rim. Early Iron Age bronze bosses probably related to shields have been found in several settlements on the Greek mainland, Crete and the Aegean Islands. For example, a bronze shield boss has been found in Tomb XXVIII at Tiryns dated c.1060 BC, 105mm in diameter with an elongated central part 50mm high; it was found together with weapons and a decorated bronze helmet. Three interesting shield bosses dated 11th century BC have been found in Grave 40 in Kalorisiki on Cyprus. Similar bronze shield bosses dated around 1050 BC have also been found at Kerameikos in Athens and large numbers of them have been excavated in several settlements (Pherai, Philia, Olympia, Patras, Karagiorgos, Skyros, Atalanti and in fragmented form at Lefkandi in tombs I and II) dating from the Sub-Mycenaean Period through the Geometric Period. The reason for this is their use in covering cinerary urns found in warrior graves. Some scholars, however, have also argued that some of these items could have been protective elements of perishable material

(Above and centre) warriors with Dipylon and round shields, and (bottom) a warrior wrestling with a lion, on a vase from Athens, 740–730 BC. (Kerameikos Archaeological Museum, Athens; authors' photos)





Warriors depicted on a pot with Dipylon shields, javelins and bow, 8th century BC.
(Archaeological Museum of Vravrona, authors' photo)

corselets and belt attachments (like those, found in a pair, in the Vergina female grave). Others have supported the thesis that they are cymbals or parts of horse harnesses. However, according to Snodgrass, who has convincingly rejected the two latter hypotheses, most of the Aegean examples belong to shields, considering that their dimensions are inconsistent and that they, particularly the larger ones, are associated with weapons in the graves. They may have been the central bosses of shields made from perishable material, but the presence of several bosses in a single grave, as at Kaloriziki, indicates shields may have featured more than one boss, like the shields of the Sea Peoples.

Regarding how they were attached to the shield, Snodgrass suggests a thong passed through the internal ring securing the boss to the wooden part.

Dipylon shields

The aristocrats of the Greek Dark Age and Geometric Period fought with military accoutrements similar to those of the late Achaeon Period: shield, armour and helmet. One of the most commonly used shields was the circular or oval one with cut-outs on both sides to improve fighting with sword and spear. This shield, which originated in the late Bronze Age, was now widely used during the Geometric and Archaic periods and is generally known by archaeologists as the Dipylon shield due to its frequent depiction on Dipylon pottery. This large shield was probably made of several layers of hide sewn to a wicker frame and sometimes reinforced with metal bosses or plates placed on the shield's external surface and edge. It is the shield form most represented on pottery and in sculpted art during the Geometric and Archaic periods. A variant of this shield – shown in depictions down to the 5th century BC – was the Boeotian shield.



EUBOEIAN WARLORD WITH RETAINERS AND WAR CHARIOT, 950 BC

The Lefkandi Chieftain, recreated here (1), was found in his heroon (shrine) in 1981. He was cremated with his weapons. The long, narrow building (50m x 10m) in which the burial was found has been reconstructed in the background as his palace. The wounded warrior wears a thick quilted linen and scale corselet, the shape of which is inspired by the terracotta Lefkandi Centaur. His iron weapons – a spear, a sword in a wooden scabbard and his bow and arrows – are all from the burial, but his conical helmet is copied from the early specimens depicted on Proto-Geometric pottery.

The distressed princess who rushes to meet him (2) is adorned with gold jewels, gold coils in her hair, rings, gold breast plates and an heirloom necklace (an elaborate Cypriot or Near Eastern necklace made some 200–300 years before her burial).

Also shown here are Euboeian retainers of the chieftain (3). The bones of one of the retainers at Lefkandi were placed in a bronze jar from Cyprus, with hunting scenes on the cast rim, and it is the later that informs the reconstruction here, in addition to other material found in the area (including no fewer than ten Naue II swords). The retainers are armed with bows, Naue II daggers, spears, axes and cut-and-thrust swords, all in iron, which are mostly covered in perishable natural material.

In a grave near the chieftain's one, four horses, and what seems to be the remains of a war chariot (4), were found. The horses appeared to have been sacrificed, some with iron bits still in their mouths. The chariot reconstructed is a two-wheeled, early Geometrical vehicle, based upon the wheel types found at Lefkandi.





Warriors with round shields leading horses, depicted on pottery, 750–700 BC. (Kerameikos Archaeological Museum, Athens; authors' photo)

Three examples of shield *umbos*. Left: this was used as a lid for a cinerary amphora, 1100–1000 BC. It measures 340mm in height and 114–174cm in diameter (Kerameikos Archaeological Museum, Athens). Upper right: from Crete, 10th century BC. Lower right: from Tiryns Grave XXVIII, 1050 BC. Similar well-preserved bronze shield bosses, dating from around the 10th century BC, have also been found in Crete and Cyprus. (Authors' photos)



Artistic representations seem to indicate that further forms of this protective equipment existed. One category of shield seems to be made entirely of interlaced wicker, reinforced at the edges with leather or even bronze strips, sometimes extended on the sides of the shield cut-outs; its dimensions differ, with one example being very large and oval, covering the hoplite from the neck to the knees, and another more rounded and smaller, protecting the warrior from the neck down to his upper legs. A further form appears to contain a wicker frame completely or partially covered with hide.

Round shields

It is not true that round shields, like those described in the *Iliad*, appeared much later in Ancient Greek history. During the early part of the Iron Age the small- or medium-sized round shields shown on pottery of the Late Helladic Period were still in use. These shields were probably made of wood or several layers of ox hide sometimes covered with a decorated thin bronze plate or with one or more bosses.

The 9th century BC embossed and decorated round shields seem to be a continuation of traditional Achaean craftsmanship in this field. A good chronological comparison exists with the description of the shield of Cygnus by Hesiod (*Shield of Heracles*, 223–25). John Boardman suggests, basing his analysis on comparative decorations of a bronze belt and plaques from Crete, that the early examples of Cretan embossed round shields could date to around the end of the 9th century BC, as Emil Kunze originally did. Also, James Brock noted the lion head shield-lid at Fortetsa on the pithos (large storage vessel) that contained the bronze belt, and its relationship to the examples of bronze circular shields. This important class of bronze shields of Near Eastern 'Phoenician' pedigree dated around the 9th century BC have been found at the Idaean Cave, the sanctuary at Palaikastro and a single piece from a sanctuary at Phaistos, as well as at tombs at Afrati and Eleutherna.

The shield boss from Amnisos has ivory and bone eyes inlaid in a bronze, decorated lion-head motif. In Tomb II of Khaniala Tekke some bronze relief bands with bosses or cable could be fragments of a shield. Although all scholars agree that these artefacts were manufactured in Crete, some attribute them to Cretan artists, while others suggest that immigrant masters transmitted the technical expertise to local apprentices or actually

produced the earliest pieces. Boardman in particular suggests that at the end of the 9th century BC and during the 8th, metalworkers arrived in Greece from the Near East; they then settled, practised and taught their craft, and created various armour workshops. Boardman suggests that these craftsmen came from Tell Halaf, in Syria, in about 808 BC, when their city was conquered by the Assyrians. Gradually, though the process of Hellenisation was slow, decoration on the shields assumed local characteristics more akin to Greek taste.

The large round bronze shield (*hoplon*), developed around 700 BC, was oriental in origin, as were many helmets, although round shields were probably used without interruption from the late Bronze Age. The *hoplon* derived from 9th–8th century Assyrian bronze circular shields; Plutarch called it the ‘Argive shield’ because Argos was considered the place of its invention (*Life of Romulus* 21). The main shield of the new citizen warrior, the hoplite, was circular, between 0.9 and 1.2m in diameter, and built around a wooden core initially covered in leather and rimmed with bronze, though later the entire shield tended to be faced with bronze. It was markedly convex in shape. The means of holding it was a Greek innovation. The shield had a detachable central armband, the *porpax*, through which the left arm was normally thrust up to the elbow. The left hand then grasped the second element, the *antilabe*, normally a leather thong which ran around the periphery of the shield’s rim. This allowed a firmer and more rigid grip than was possible with a single central handle and it distributed the weight of the shield more evenly between the elbow and the hand, allowing it to be held more securely and for a longer time in front of the body. However, it created problems in protecting the right side of the body.



Warriors with round shields depicted on pottery, early 7th century BC. (Archaeological Museum of Vravrona; authors’ photo)

Other shields

During the very early Iron Age the square or rectangular medium- and large-sized shield, already in use during the final phase of the Late Helladic Period IIIC, appears to be still employed on the Greek mainland and the Aegean Islands. The larger version of this shield also shows lateral cut-outs.

Bronze shield parts, 8th century BC. (National Archaeological Museum of Athens; authors’ photos)



This type of shield, almost a full body shield, is represented on a krater fragment from Voudeni dating from the second half of the 11th century BC. This shield was probably covered with a bronze embossed and decorated sheet, similar to those found on some round shields originating in Central and Northern Europe.

A smaller square shield probably made of wicker is clearly depicted on a krater from Crete dating to the 11th century BC. This shows some similarity with shields used by Anatolian peoples like the Hittites. The employment of such shields in Late Geometric Greece is confirmed on Dipylon pottery.

Helmets

Late Achaean helmets

The so-called ‘hedgehog’ helmets seen on several examples of Late Helladic Period IIIC pottery were probably still in use during the early Iron Age. This kind of helmet has been interpreted as being made of leather, sometimes reinforced with bronze elements and with a small central crest. Some examples of this low profile, cap-shaped helmet might also have been made of bronze, with embossed decorative elements like the Tiryns helmet or other examples from Central Europe. A simple cap-shaped uncrested helmet dating from the 12th century BC, probably made of leather, is also shown in an ivory carving from Cyprus.

An extraordinary five-piece helmet was found in the 11th-century BC layers of Tiryns (Grave XXVIII, dated 1060–1050 BC). This specimen is composed of four elements for the conical cap and two long cheek guards; all these parts have an average thickness of about 1mm. The two conical parts which together form the shell are 17cm high and 22.5cm wide at their lower parts. A decorative triangular motif follows the shell profile and in the middle of each part a circular embossed decoration is also present. Two bronze bands roughly 30.5cm long and 5cm wide are placed in the central area between the two conical shells. These elements have three holes in both ends, probably for attaching a wooden crest holder. The two cheek guards are 16cm long and 9cm at their widest; a central embossed decoration is also present on these components. All the elements of this helmet have small holes along their edges for attaching a lining to the inside of the helmet. This internal perishable padding was intended both as a protective liner and as an inner structure used to fix together the various parts.

A Late Achaean helmet from Tiryns, Grave XXVIII, 1050 BC. (Archaeological Museum of Nafplio; authors' photo)



Dark Age and Geometric Period helmets

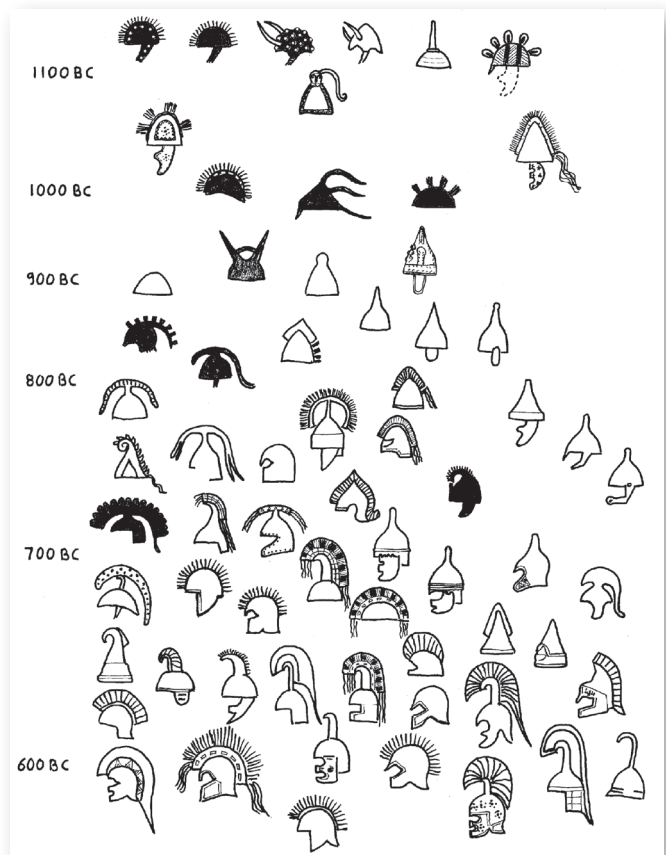
Greek Dark Age helmets are less easy to categorise. They were probably either made of organic material or bronze, and depictions from Crete show that the Illyrian prototype began to appear in use from at least the 10th century BC, together with the Near East high conical type originating from Asia Minor. It is probable that some helmets used between the 11th and the 9th centuries BC by contemporary warrior cultures in Central Europe were also used in Greece. For the moment, however, the only archaeological find between the Tiryns helmet – the last known specimen of the Bronze Age – and the new typologies of the 9th century BC is the helmet from Grave 40 in Kaloriziki, Cyprus, dated 11th century BC. The surviving parts of this conical helmet have previously

been wrongly interpreted as decorative parts of a trapezoidal shield. New analysis has instead shown that these parts are cheek pieces and fragments of the upper crest of the helmet.

Several scholars believe that a new type of Greek helmet was developed under the influence of the Anatolian and Syro-Assyrian tradition. Oriental forms of helmet exercised a strong influence on Dark Age Greece. However, while the regions of the Near East demonstrate a high level of standardisation in helmet form and decoration, in the eastern Mediterranean (Cyprus and the Aegean) the tendency from the middle of the 8th century BC until the last quarter of the 7th century BC was towards a liberal combination of different elements of basic Near Eastern helmet types and local inventiveness. It is thus possible to discern different types of crests, cheek pieces and even facial masks on the same helmet type.

The oriental influence on the development of Greek helmets could derive from the import of original models or from copying and formal reinterpretation of eastern examples.

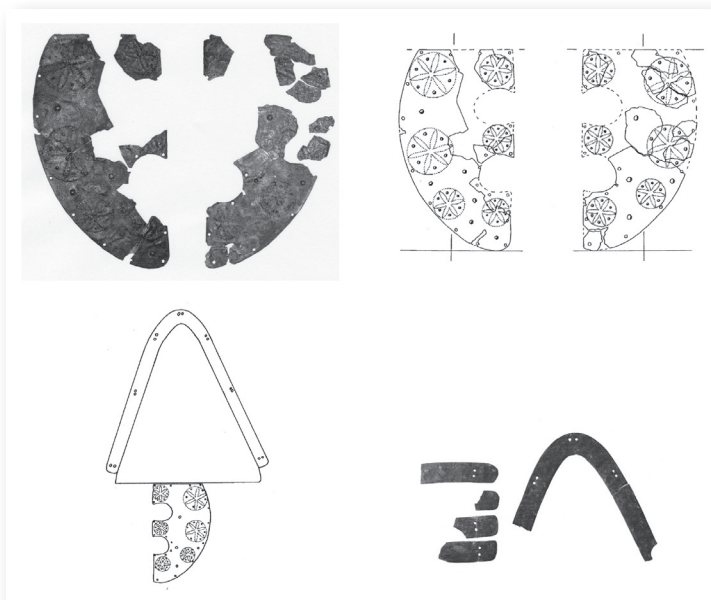
Some regions, like Cyprus – one of the most significant centres of eastern Mediterranean maritime trade – and Crete, must have played an important mediatory role in the diffusion of oriental helmet types. In Cyprus the direct import of helmets from the east is clearly evidenced, as are local and Greek forms inspired by Syro-Assyrian helmet types. Crete is the only place in the Aegean where two chronological phases of orientalisation can be clearly identified: the first from the late 9th–early/mid-8th century BC, and the second from the second half of the 8th–7th century BC. We can isolate three different levels of influence on the development of the Greek helmet between the 9th and 8th century BC: (a) direct import from the East; (b) the copying and reinterpretation of oriental patterns; and (c) local helmets (Cypriot and Greek) inspired by Syro-Assyrian helmet types. Dipylon ceramics show the use of oriental helmet types, as well as local examples, and ‘mixed’ types of five-piece pointed



A selection of early Iron Age helmets from the Greek mainland, Crete, the Aegean Islands and Cyprus. (Andrea Salimbeti)



Proto-Corinthian helmet, from Olympia, early 7th century BC. (Archaeological Museum of Olympia, inv. no. B2185; authors' photo)



A bronze helmet from Grave 40 in Kalorisiki, Cyprus, dated 11th century BC. These elements, previously wrongly interpreted as parts of a decorated shield, actually comprise the cheek guards and the upper crest holder of a conical bronze helmet which show similarity with the early Iron Age specimen from Tiryns and some late Bronze Age helmets represented on Hittite reliefs. (After Hartmut Matthäus and Gisela Schumacher-Matthäus)

A conical helmet from the Geometric Period, from Olympia. (Archaeological Museum of Olympia, inv. no. 10533; authors' photo)

Two pottery models of possible conical pointed helmets have been found at Lefkandi dating to 1000–900 BC; both these helmets have decorative motifs and one seems to feature simple cheek protectors. A male terracotta head from Amyclae (Laconia) dated late 8th century BC shows a tall conical helmet with a forward-curving crest that hangs down at the back. This has a possible Cretan connection; this form of helmet has been identified as one of the earliest Greek examples of a type derived from Uartian forms. Close examination of its faded paint shows that the decorative meander extends only along the sides; a plain circle is centred above the forehead. This feature recalls a discoid projection on helmeted early Iron Age Cretan figurines of bronze and terracotta



helmets with earflaps. These helmets feature different types of crests, profiled cheek pieces and face masks. The chequered-pattern helmet crest and broad patterned belt have Cypriot parallels.

The conical pointed helmet

This helmet type most clearly demonstrates the influence of Syro-Assyrian helmet design on Greek forms. Its use was widespread, but principally on Cyprus and the Aegean Islands. Sometimes these helmets were directly imported, like the helmet from Palaepaphos (Kouklia, Cyprus), which was probably made in the Near East or brought to Cyprus by the Assyrian army of Sargon II.

thought to be *omphalos* (navel) discs designed to deflect sword blows. Some archaeologists have also proposed that bosses found in warrior graves on Crete and elsewhere might in some cases have come from helmets rather than shields.

The tradition of the conical helmet was not a new one on the Greek islands. Worth mentioning is a type of conical helmet represented on a Cypriot rod tripod dating from around the 12th century BC. On this are sphinxes wearing bell-shaped helmets that appear to be metallic, surmounted by round balls from which rope-like plumes ending in tassels are dangling. Another sphinx wearing such a helmet with long dangling plumes appears on the Hunt shield from the Idaean Cave in Crete;

this dates from about the 8th century BC, and since its surface is smooth, it would appear to represent a metal helmet. It may thus indicate a long survival of this type of helmet in Crete. Such helmets are also represented on the Hunt shield from the Idaean Cave as well as on a thin bronze plate from a beehive tomb at Kavousi, also dating from the 8th century BC.

The Kegel type and the Illyrian helmet

One of the first helmets to combine direct oriental influence with local workmanship comes from Argos, highlighting the role the latter played in the process of orientalisation. It is one of the best preserved examples of the *Kegel* (cone) type, the component parts of which (a conical top, separate plates for the forehead and the back of the neck and two cheek pieces) were hammered onto a circular core, and riveted together. The helmet is crowned by a cast support for a horseshoe-shaped crest holder, worn fore and aft. Although the cheek pieces have Achaean antecedents, the immediate models for the conical top and the fore and aft crest must have come from Assyria, probably the Anatolian kingdom of Urartu. In Late Geometric Period pottery paintings the backward-drooping helmet crests worn by warriors provides a link to this typology. Fragments of a similar helmet were also found in Athens.

A Variant B of the Argos helmet is visible on another specimen, also from Argos, found in Odos Diomidous. It comes from a grave also dating to the end of the 8th century BC; its cheek pieces are narrower than the one in Grave 45, while its crown is clearly conical. Various fragments of *Kegel* helmets have been found at Olympia, Lindos and Kalapodi. A further variant, C, was identified at Ortona in southern Italy. A final example of a contemporary Greek *Kegel* helmet (Variant D) recently came to light in an international auction from the collection of Axel Guttman. Constructed with five sections riveted together, it presents a cone-shaped crown, back piece, cheek pieces and brow piece all with raised ridged decoration above piercing for an inner lining. Interestingly, the cheek pieces feature semi-circular cut-out eyeholes. The use by warriors of similar helmets around 670 BC appears to be indicated on two specimens of Trojan horse pottery from Mykonos.

From the *Kegel* helmet, or from local variants, developed one of the longest-lasting types of Greek and Balkan helmet, known as the Illyrian helmet. On this, the cheek guards were now incorporated into the bowl, which assumed a round shape. Between the 8th and 7th centuries BC two variants have been identified, one made of a single piece and another made of two pieces. Both are well represented in finds from Olympia.



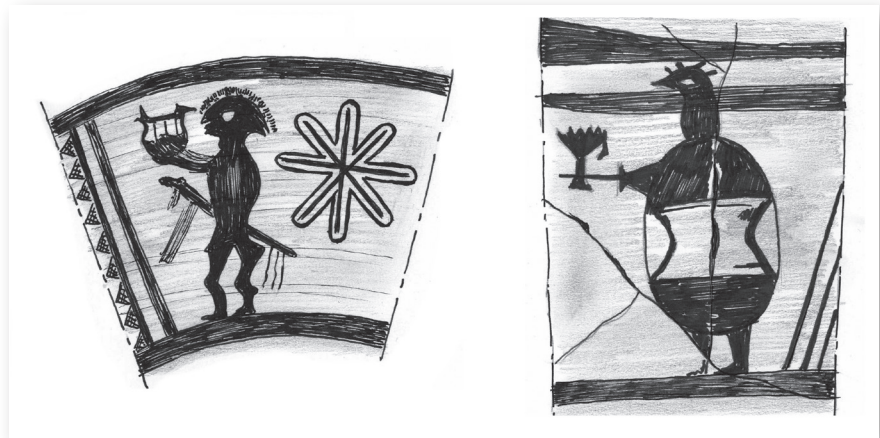
A conical helmet of the Geometric Period with the tubular support for the crest still in place, from Olympia. (Archaeological Museum of Olympia, inv. no. B51+B96; authors' photo)

LEFT An Illyrian helmet of the early type, from the Peloponnese, 8th century BC or early 7th century BC. (Archaeological Museum of Olympia, inv. no. B155; authors' photo)

RIGHT Proto-Corinthian helmet, from Olympia, early 7th century BC. (Archaeological Museum of Olympia, inv. no. B56; authors' photo)



A warrior lyre-player (left), depicted on a kalathos of Proto-White Painted Ware, from Palaepaphos-Xerolimni, Cyprus. Right: a warrior with Proto-Dipylon shield depicted on a pyxis of Proto-White Painted Ware, from Nicosia, Cyprus. Both examples are dated 11th century BC. (Andrea Salimbeti)



Hemispherical helmets

Hemispherical helmets, sometimes with small crests or separate plumes, are represented in late Achaean pottery dating to around 1100 BC from the Greek mainland, the Aegean Islands and Cyprus. On the latter, a simple hemispherical cap or helmet was also worn by warriors, as shown on statuettes and on pottery.

A piece of Proto-White Painted Ware pottery dated 11th century BC from Palaepaphos-Xerolimni in Cyprus shows a lyre-playing warrior equipped with long sword in a fringed scabbard and wearing what seems to be a hemispherical helmet with a small crest similar to the late Achaean ones known as hedgehog helmets. A further 11th-century BC Proto-White Painted Ware piece, also from Cyprus, shows a warrior holding a small dagger, a large Proto-Dipylon shield and wearing a simple hemispherical helmet with four separate plumes. Among the pictorial motifs on Cypriot pottery worth mentioning is a White Painted Ware piece dated 1000–900 BC on which a male figure with raised arms seems to be wearing a hemispherical headdress with long horns, possibly reminiscent of the Horned God statuette from Enkomi.

Proto-Corinthian helmet of the early type, from Olympia, end of 8th century BC or early 7th century BC. (Archaeological Museum of Olympia, inv. no. B55; authors' photo)



The 'hollow-eyed' helmet

The early history of Corinthian helmets shows a parallel development of different traditions, which resulted in different versions. Their origins lie in the Greek eastern Mediterranean as a local development from ancient Achaean models in antithesis to the open face helmet of oriental origin.

In Geometric Crete some helmets are represented with a round crown and hair or bristle crests, which probably links to the introduction of this to Greece for use by hoplites. The importance of Crete in the early development of the full hoplite panoply has been recognised by Snodgrass. An earlier date for the introduction of some elements should probably be considered, possibly even giving priority of introduction to the Cretan helmet type over the Corinthian. The early proto-Corinthian specimens are well represented by those on display in the Archaeological Museum of Olympia, while an early representation of them appears on Proto-Attic pottery from Athens.

Composite helmets

The lack of appropriate iconography and written sources means there is no clear evidence for Greek Dark Age helmets made of perishable material. However, a few images on pottery suggest that at least during the early Iron Age a degree of continuity existed in the use of certain types of non-metal helmets. The latter were probably made of leather or tightly interlaced straw, typical of the late Achaeen Period 'hedghog' helmets.

These helmets may also have been reinforced with bronze elements. In fact, according to many scholars, notably Berthold Fellmann, some smaller bronze bosses (*phalara*) found at several early Iron Age burial sites and usually interpreted as parts of shields, could actually have been reinforced elements of helmets made of leather, wicker or other perishable material. These helmets were probably similar to the later beautiful specimens from Šmarjeta in south-eastern Slovenia. Some of the bosses probably were part of helmets, but others were undoubtedly parts of shields, such as the Tiryns, Kerameikos and Kaloriziki specimens.



Proto-Corinthian helmets, from Olympia, early 7th century BC. (Archaeological Museum of Olympia, authors' photos)

Body armour

The absence of any complete suits of armour from Greek Dark Age and Geometric Period excavations has led many scholars to discount the use of bronze armour throughout the whole period. However, this is in contrast with developments in armour in the regions around Greece, as well as the use of items such as greaves and helmets. Bronze suits of armour probably existed, but were too precious to be consigned to graves.

In some Post-Palatial warrior graves near Patras and Liatovouni dated around 1200–1100 BC, round bronze plates and bronze buttons have been found among weaponry. Some scholars have suggested that these could have belonged to a perishable material corselet probably made of linen or leather.

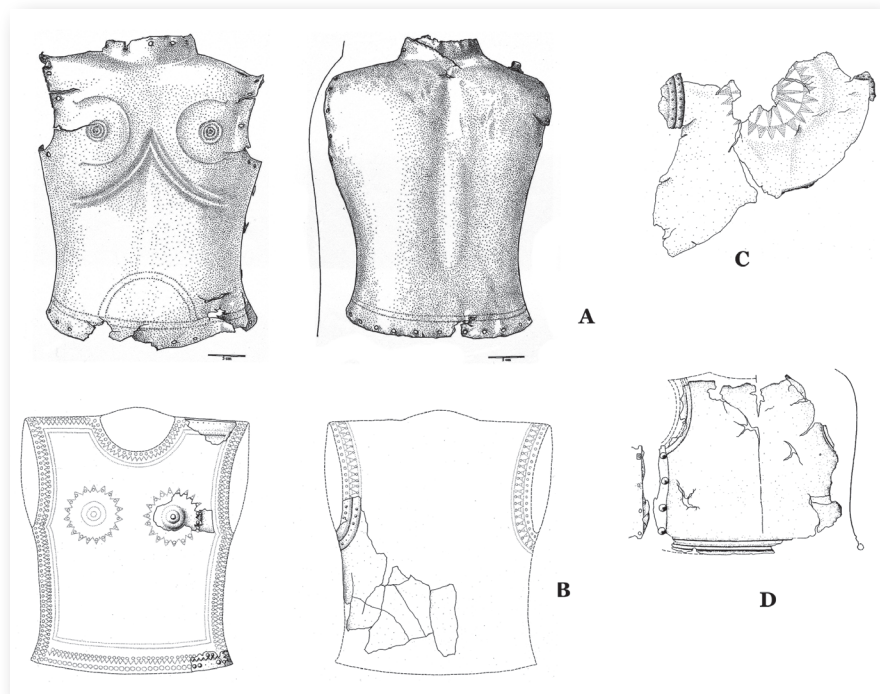
Proto-Geometric Period war belts have been found in Crete in aristocratic warrior graves. Among the best examples are the embossed bronze belt at Fortetsa, and the gold plaques found at Fortetsa and Kavousi. The Fortetsa belt was in a pithos of the Proto-Geometric B Period. These belts recall the belly protectors of the late Bronze Age Achaeans, as visible on pottery fragments from Tiryns. These war belts, whose protective function probably derived from Uartian influence, were sometimes worn in double or even triple form, as shown on a statuette of a horse-mounted warrior dated 700 BC from an unknown northern Greek location (now in the Glyptotek Museum, Denmark).

The earliest complete suit of armour found is the Argos Panoply (700–675 BC), a direct descendant of late Bronze Age corselets. In Grave 45 at Argos a bronze bell-shaped plate corselet was found, composed of two sections, a breastplate and a back

Proto-Corinthian helmet, from Olympia, early 7th century BC. (Archaeological Museum of Olympia, authors' photo)



Central European cuirasses:
 (A) complete decorated bronze cuirass from Hungary (the Danube area near Pilismarót) dated about 1300–1100 BC;
 (B) fragments of a decorated bronze cuirass from Slovakia (Kaka Okr Levice) dated around 1250–1100 BC;
 (C) fragment of a decorated bronze cuirass from Slovakia (Ducovè Okv. Trenčin) dated around 1250–1100 BC;
 (D) fragmentary bronze cuirass from Slovakia (Čierna nad Tisou) dated around 1050–950 BC. On account of their general design and decoration, these late Bronze Age–early Iron Age cuirasses from Central Europe have been linked by several scholars to Aegean armour of the same period. (Drawing by Andrea Salimbeti after Petres–Jankovits)



plate, like its Achaean prototypes. Its earliest antecedents are the early Achaean panoplies from Dendra and Thebes. The intervening stages, however, can be identified in a series of corselets belonging to the Urnfield Culture of Central Europe, which offers precedents for the bell shape, and the semi-circular breast markings. The most likely route of transmission of the concept from Central Europe back to Greece was via Italy and the Balkans. The Argos corselet is unlikely to have been an early example of the local school, and it shows a sculptural quality similar to another Argive masterpiece, the monumental Archaic statues of the twins Cleobis and Biton.

In figurative art, the earliest known representation of a metal corselet is on an Attic amphora dated c.720 BC. Bronze corselets were originally the property of the rich and powerful only. Such armour would soon become an essential piece of equipment for the hoplite, despite its expense, and would continue in use until the time of the Persian Wars when lighter forms were adopted.

Possible representations of scaled corselets are seen in late Bronze Age–early Iron Age pottery from Cyprus and Syria – although the lack of definition leaves open the possibility that these may be decorated or quilted protective equipment, made of linen or other perishable material. A single bronze scale has been found at Lefkandi in a female burial; some have interpreted this as merely the gift of an old object, while others see it as possible proof of the employment of such armour by the continental Greeks during the Dark Age.

Greaves

Bronze greaves to protect shins and calves evolved from the greaves of the preceding period, and in the earliest phase of hoplite

A Geometric greave, from Olympia. (Archaeological Museum of Olympia; authors' photo)



warfare protected not only the front part of the lower leg but enveloped it completely. The earliest examples so far discovered in Greece were found in a chamber tomb dated c.1100–1000 BC excavated in the southern slope of the Athens Acropolis. They are decorated with several embossed circles, similar to Central European greaves of the same period.

Similarly embellished greaves continued to be used in Greece during the Geometric Period, as proved by the beautiful example on display in the Archaeological Museum of Olympia. Another interesting pair of bronze greaves has been found in the Geometric Period tomb of Skouriasmenos in Kavousi. These greaves have edges decorated with small shells showing a closer similarity to Bronze Age style. In Grave 45 at Argos fragments of gold sheets, possibly from greaves, were found alongside the armour.



Achilles and Penthesilea on a votive pottery shield, from Tiryns, early 7th century BC. Both warriors are heavily armoured, but while Achilles is clad in what seems to be a linen or other perishable material corselet, the armour worn by Penthesilea is clearly a bronze cuirass similar to contemporary Argos armour. (Archaeological Museum of Nafplio; authors' photo)

Chariots

The chariot and horse are the prerogative of the aristocrat in the *Iliad*. After about 1200–1100 BC, however, neither textual nor representational evidence for the chariot appears in Greece until the 8th century BC, save for the model of a pair of chariot wheels from Lefkandi. Because of this lack of evidence in art, some scholars have often disregarded the possibility of widespread use of chariots during the Greek Dark Age. Nevertheless, because the same type of chariot-related evidence occurs in both late Bronze Age and early Iron Age contexts, it can be argued that between the 11th and 8th centuries BC chariots were used more than initially thought. It seems likely now, especially in view of the burials at Lefkandi and Salamis in Cyprus (750–600 BC), that the chariot survived the Greek Dark Age. The extant artistic representations from this period confirm that the rail chariot described in the Homeric poems and visible in late Bronze Age depictions was still in use, together with a kind of squared-box four-wheeled chariot well known from Dipylon pottery and illustrated – for the late Bronze Age – only in one piece of pottery from Patras. The status value of the horse among Greek aristocrats around and after 900 BC is clear, as demonstrated by the luxurious grave discovered at Lefkandi where the master's four horses were buried with him.

Further evidence for chariotry comes from two tombs on the Greek mainland where two horse bits were found among the grave goods, and from another tomb in Crete. The Athenian Agora also produced two bits in iron dated 900 BC which are very similar to the ones found at Lefkandi.



Bronze greaves (left), and bronze and iron daggers and swords from the late Achaean Period site of Enkomi, Cyprus, 12th century BC. (The British Museum, London; authors' photo)

Horse breeding clearly continued as an aristocratic activity. Many aristocratic names were derived from words related to horses. War chariots are depicted on Geometric Period pottery and they clearly continued to play an active role in combat, although they were also used in ceremonies.

Representations of chariots and charioteers in bronze and clay from the sanctuary at Olympia support the idea of some scholars that the early sanctuary at Olympia functioned as a meeting place of the *aristoi* or *basileis* of western Greece. Chariot racing was also one of the earliest Olympic disciplines, and after a victory the winner offered his prize to the gods in gratitude. This was not merely an event for the population living around Olympia, but a festival for visitors from

the entire Peloponnese and perhaps from even more distant parts.

The rail-chariot

The Proto-Geometric Period chariot known as the rail-chariot differs significantly from any contemporary Near Eastern chariot. It is, however, reminiscent of the late Achaean type. The only possible explanation for the similarity between the late Bronze Age Achaean rail-chariot and the Iron Age chariot is that the chariot survived through the Greek Dark Age; this is also confirmed by finds of horse bits in some early Iron Age tombs (e.g. the four-wheeled horse model at Lefkandi). The rail-chariot was very light and characterised by an open frame featuring a grab rail, from which it derives its name. The rail probably came up to the hip and ran horizontally over the front of the box. Variations in representations of this chariot suggest that the rail may have curved upwards at the front corner.

The Helladic chariot

A further chariot type to appear in the Geometric pictorial record is called the Helladic chariot or high-front chariot. This is the most frequently depicted

D

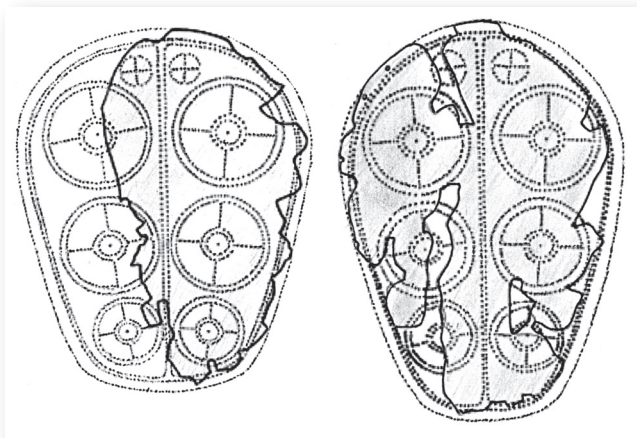
EQUIPMENT AND WEAPONRY, 1100–900 BC

The Cretan warrior shown here (1, c.1100–1000 BC) is based on a pottery fragment from Heraklion, which shows various fighters engaged in hunting wild animals. He is wearing a triangular quilted corselet, made of linen or other organic material, reinforced with bronze bosses. On his head is a hypothetical conical bronze helmet fitted with three plumes. His square shield is made of woven wicker, and he carries a bronze spear.

The warrior from the Areopagus grave was found alongside the bodies of his staff, and he has been reconstructed here as an Athenian warlord (2, c.900 BC). Note the elaborated *chiton*, typical of the Proto-Geometric Period, and the linen corselet, forerunner of the *linothorax*. The bronze helmet is based on pottery representations from the same period.

Also shown here are reconstructions of helmets from Enkomi (3, 1100 BC), Kos (4, 1100 BC), Kition (5, 900 BC) and Lefkandi (6, 950 BC); iron (7) and bronze (8) Naue II swords and a typical scabbard (9) of the period, from Cretan finds; (10) early iron spearheads, from Tiryns and Crete; details of a small round (11) and a large Dipylon (12) shield. The latter shield was the most typical of the period; it is shown here covered with layers of ox hide, continuing the tradition of the Bronze Age.





Bronze greaves, from the Acropolis, Athens, 1100–1000 BC. The greaves, decorated with embossed circles, are from a chamber tomb dated to around 1100–1000 BC excavated in the southern slope of the Acropolis. (Drawing by Andrea Salimbeti after Mountjoy)

Two bronze statuettes of warriors on chariots. Left: Geometric Period, second quarter of the 8th century BC (Archaeological Museum of Olympia; authors' photo). Right: Geometric Period, second quarter of the 8th century BC. (National Archaeological Museum of Athens; authors' photo)



form in the Iron Age, and is the standard type found from the 8th century BC. Numerous variants on this form of chariot appear in Geometric vase painting, but they share common characteristics in terms of general structure.

Usually the wheels have four spokes, though at times six and eight spokes appear in vase painting or the archaeological record. The high-front chariot also has the same traction system as the Proto-Geometric rail-chariot.

The Helladic chariot differs from the Proto-Geometric rail-chariot with respect to its body structure. The box again is

lightly constructed, but is formed from three rails – one at the front and one each on either side – rather than a single continuous rail. All three rails are partially covered by either linen or leather. The front rail rises to hip height or slightly above and is supported by a central strut. The side rails are lower than the front, rising to about mid-thigh, and are curved backwards behind the floor and have a vertical support. The side rails probably served as handrails for mounting.

The four-wheeled chariot

At Voudeni, near Patras, a huge krater dated around 1100 BC shows a clear example of a four-wheeled chariot. It features a wicker structure, and is driven by warriors equipped with swords, spears, embossed cuirasses, embossed and crested helmets and medium-sized round shields.

Both the rail-chariot and the four-wheeled form continued to be used until the end of the Geometric Period. One model – the chariot represented on the Attic Middle Geometric Period krater (770–760 BC) in the Kerameikos Archaeological Museum, Athens – shows a box structure probably also made of wicker, but with the addition of a closed protective structure to the front, and two rear grab-rails. The wheels are still the four-spoke version of the late Bronze Age, but this kind of chariot is pulled by three horses. The draught pole, connecting the box to the horses and decorated with geometric motifs, ends with a raised yoke.

On the same krater there is depicted a lighter version of the four-wheeled chariot, probably intended for a single warrior's use. It shows a smaller wicker platform with two open grab-rails on the front and on the back. In this example the wheels have eight spokes and the chariot is pulled by two horses.

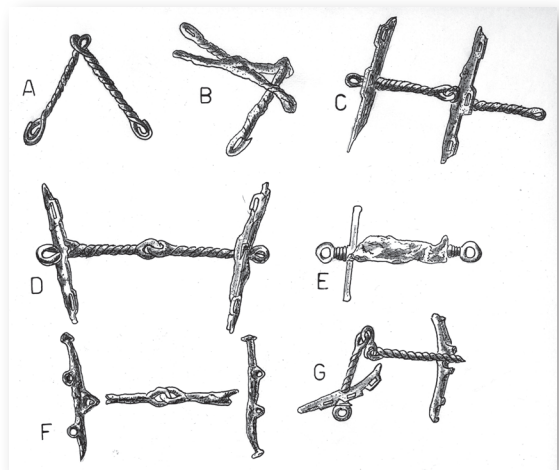
Although restricted in its movements due to the absence of practicable roads (a difficulty that all chariot types faced), the four-wheeled form was more robust than the lighter rail-type. Provided it had an articulated front axle, the

four-wheeled version would find greater use as part of the settlement-based activities of the aristocratic household. One such activity would involve the pomp and splendour of the aristocratic funerary procession depicted on the later Attic vases. The setting is usually funerary, either explicitly or by inference, since the often large vases on which such scenes are represented were themselves designed as grave monuments.

Very often the single drivers of the Geometric Period are represented dressed in a simple *chiton* or even naked on the chariot save for a bronze belt and helmet, and are shown armed with javelins, spears and sword. In other depictions the driver is merely driving the chariot, with a heavy hoplite in full armour shown beside him. Four-wheeled chariots are not found in early Iron Age Cyprus.

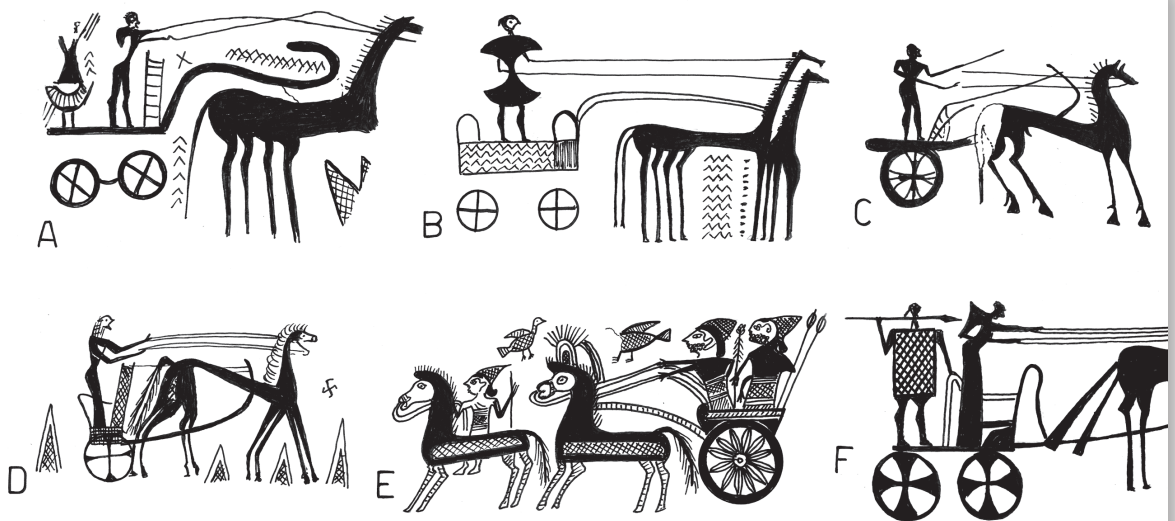
The Cypriot chariot

The sources that provide evidence for Cypriot chariot usage are extensive, deriving both from representation and from remains of actual vehicles. The representations are mainly terracotta models in the round, most of them dating to the 7th and 6th centuries BC and two-dimensional representations, such as two stone sarcophagi with relief sculpture of a similar date, vase painting of the 8th and 7th centuries BC, embossed gold plaques and seal engravings of the 7th–6th centuries BC. In addition, chariots as well as carts have been identified among the remains of actual vehicles buried along with their draught teams and their harnesses in tombs of the 8th–7th centuries BC. The wooden parts of the vehicles have decayed but have left a partial impression in the soil; some metal parts have been preserved together with other horse accoutrements. In some cases the identification of the vehicle as a chariot is in part based on the absence of iron bearing shoes for revolving



A selection of Greek and Cypriot early Iron Age horse bits. A: Athens, 900 BC. B: Athens, 8th century BC. C: Salamis (Cyprus), 8th century BC. D: Salamis (Cyprus), 8th–7th century BC. E: Samos, 8th–7th century BC. F: Kalapodi, 700 BC. G: Salamis (Cyprus), 700 BC. (Andrea Salimbeti)

A selection of Greek and Cypriot early Iron Age chariots. A: Crete, 1100 BC. B: Athens, 8th century BC. C: Athens, 8th century BC. D: Athens, 8th century BC. E: Khysochou (Cyprus), 700 BC. F: Boeotia, 7th century BC. (Andrea Salimbeti)





Fragments of a krater depicting warriors, horses and a chariot, from Argos, 8th century BC. (Archaeological Museum of Argos; authors' photos)

axles which are typical of many carts but not of chariots. Finds of similar metal parts from funerary contexts at Tamasos, Amathus and Palaepaphos, dating to between the 8th and 6th centuries BC, suggest that such burials were not confined to one site.

Based on artistic representations and archaeological finds, the typical Cypriot chariot of the 8th–7th centuries BC includes both *bigae* with a single, central draught pole and *quadrigae* with two poles. They have a more or less rectangular floor made of interwoven straps, a wooden partition running front to back through the centre and at the rear a vertical wooden board. In some finds a brown leather stain suggests the presence of a side screen made of this material.

As attested to by some actual chariot remains, both ends of the draught poles were protected by bronze caps. At the rear of each pole, on the part projecting beyond the chariot box, a decorated ovoid bronze plate was emplaced, allowing the bronze cap on the end to show through. On top of the yoke at regular intervals were four bronze rings for the reins, and normal decorative additions were also made.

The wheels on Cypriot Iron Age chariots are shown with eight or more spokes but fully decorated wheels were probably also used. The horses associated with these richly decorated vehicles had bronze blinkers and headbands, the upper part of the latter decorated with prominently curving crests, bronze breastplates and side pendant ornaments. The bits were made of iron.

Several representations of warlike and hunting scenes show the chariots mounting a driver and a fully armed warrior equipped with one spear or two javelins, a round shield and a helmet. In some cases on the lateral side of the chariot box a quiver with arrows and a bow are also represented. Mounted warriors are sometimes also shown together with the chariots.

Mounted warriors

Mounted warriors appear on Greek vases from the late Bronze Age and in very few examples (like for instance the battle scenes on vases from Paros) appear on late 8th- and 7th-century pottery. These are more likely to have been mounted heavy infantry rather than true cavalry. The idea of mounted hoplites is an interesting proposition because it may help demonstrate that, at that time, the chariot was in fact used primarily as a transport vehicle. Some scholars have proposed that mounted hoplites rode into battle only to then dismount and fight on foot. The latter notion is reinforced by the fact that vase painting never depicts mounted warriors actually fighting from their horses.

Horse tack was reduced to the essential: a simple coloured cloth for a saddle, a simple leather or rope bridle and, sometimes (as shown on the Pixys horse from Grave 69 at Kerameikos, Athens, dated 775 BC) a broad decorated fabric or leather collar.

Some scholars have suggested that mounted warriors would have ridden to battle in pairs, each on his own horse. One of them would have dismounted to fight and the other, a squire, would have stayed back and held the horse.

The squire would have kept the warrior's horse nearby in case he needed to remount quickly and get away.

CONDITIONS OF SERVICE

The aristocratic warlord

The Greek and Aegean political and military system was characterised by smaller states and armies based on the military power of the social elite. The influence of the weaponry invented for the standing armies of the Near East (mainly the Assyrians), and originally conceived for the heavy infantry of those armies, was visible in the creation of the hoplite. However, in the Greek world heavy weaponry (and the chariotry of the 8th century BC) was for a long time the sole prerogative of the social military elite and was used differently, namely in single combat.

A feature typical of early Iron Age burial customs in particular, and material culture in general, is the lack of clear evidence for an established elite. There are, indeed, burials and buildings whose features can be attributed to important people, but it is not conclusively clear that they represent an elite whose position was stable and supported by a long tradition. Social standing was not only determined by birth and provenance, but also by merit and achievement. However, material evidence for identifying an individual of high status, who might have been a *basileus*, has been found in some tombs (mostly of warriors) with prestige goods and status symbols, notably bronze cinerary urns.

There are good reasons to view them as more or less direct inheritors of the Achaean *qasireu*. A good example of a possible tomb of a *basileus* is the burial site of the 'hero' at Lefkandi dated around 1000 BC, which may well have been the first attempt in early Iron Age Greece by a local elite to lay claim to hereditary status. This is in fact a lavish example of an aristocratic warlord's burial with his female companion and four horses. The warrior's cremated remains were stored in a large bronze amphora. Apart from their high value, the objects in the tomb were interconnected with the male's social personae. The offensive weapons found – such as the iron sword and spearhead found together with a whetstone to keep them sharp – and the four horses make it clear that the man belonged to the dominant warrior group and underline the owner's capacity for using violence. While the weapons symbolise aggression connected to a distinct warrior ideology, the drinking equipment found represents the social and political aspects of his activities, which presumably included ritualised leadership, sacrifice and social negotiation.

Leisure activities

The tradition of singing poets entertaining the courts of aristocratic warriors was linked to the period of Achaean migration, notably in Ionia. Lyre-playing warriors are represented on Cypriot pottery from the 11th century BC onwards, and on a few Cretan bronze statuettes from the Geometric Period



A warrior depicted on pottery holding onto two horses, from Athens, 750–740 BC. (Kerameikos Archaeological Museum, Athens; authors' photo)



A bronze decorated shield from the Idaean Cave, Crete, 9th–8th century BC. (Andrea Salimbeti after Hencken)

the players are sometimes accompanied by a small boy; both could be representations of musicians or bards. Musicians of any kind are uncommon in Geometric sculpture, although they are frequently represented on Late Geometric Period vases. Unlike the representations on vases, where lyre-players and flautists are sometimes shown accompanying dancers or in other settings, most bronze statuettes lack an internal narrative context which would enable us to understand their particular meaning and if these actually represent musicians accompanying dancers or ‘Homeric’ bards. Nevertheless, the Geometric Period representations show that one of the most common leisure activities in the Aegean Iron Age was a feast with dancers and acrobats moving to the music of the lyre and the flute.

Listening to the epic events of ancient myths, especially that of the Trojan War and the return of the Achaean heroes, being narrated by a singing bard was certainly one of the main leisure activities during the early Iron Age in Greece and the Aegean. Homer’s audience would have mainly consisted of aristocrats who had won their position in society by virtue of their own prowess and probably hoped for their own feats to be preserved after their death in the same way in which Homer preserved the memory of the deeds of their Bronze Age ancestors.

If the passages in the *Iliad* can sometimes help us understand warfare in the Greek Dark Age and the Geometric Period, it is not because they describe these ages, but rather because the model of late Bronze Age warfare was adopted and maintained by the aristocratic warlords of the Post-Palatial Period until the advent of hoplite warfare. The *Iliad* is not an 8th-century BC text, but a combined text formed by an unbroken oral tradition directly descending from the late Bronze Age, and then transcribed in written form during the 8th or 7th century BC. Thus the *Iliad*, although highly consistent in its description of warfare and armour, refers to the late Bronze Age and to techniques of war and weapons that were developed and modified during the Greek Dark Age and Geometric Period. The use of closed formations of infantrymen was already well known to the Achaeans, as the ‘proto-phalanx’ formation of the fresco of Thera shows very well. So it is unsurprising that in the *Iliad* we find the Greek word for phalanx and mention of rows of troops. The description of ‘the blazing bronze from gleaming helmets, corselets newly burnished and shining shields’ (*Iliad* 13.340–43) does not refer to the phalanx panoply but, as is most logical and natural, to the panoply of the late Bronze Age.

Training and discipline

According to some scholars, in Geometric art the presence of terrifying masks representing ugly goddesses, demons or gorgons relates to the initiation ritual that dramatised a boy’s accession to manhood according to a heroic model, perhaps as a monster. The boys who emerged victorious from the contests would graduate from childhood to adolescence, the first of two ceremonially recognised stages of pre-adulthood. It is no accident that the

monstrous adversaries embodied in the gorgon masks were female, nor that the Bronze Age Achaean hero Perseus was the initiate model. The slaying of a female figure could symbolise the boy's readiness to leave the female-dominated household and join the male community.

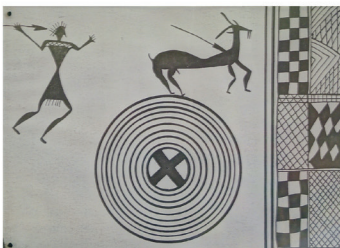
In some locations the dedication of a votive shield to the goddess Hera – decorated with scenes of Amazonian battles, centaurs and Achaean heroes such as Heracles or Achilles – may similarly mark the occasion of a youth's advancement towards adult status in the community, and might even have been used in ritualised combat. The shield's 40cm diameter (scaled accordingly as a votive offering) may well have been determined by the size of its intended bearer. The association of specific local mythological tradition puts the final piece of the puzzle in place with regard to the votive shield and mask. A boy, led towards adulthood for instance at Mycenae or Tiryns through role-playing Perseus, Heracles, or a similar epic hero, was intimately identified with a specific heroic genealogy and its divine patronage under Hera.

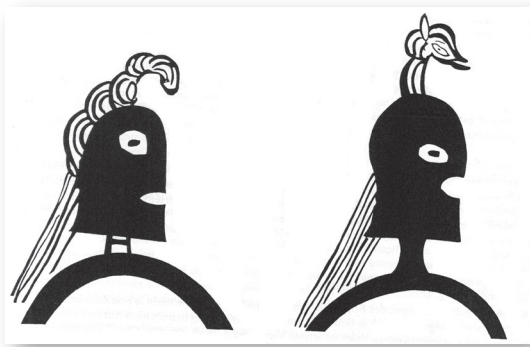
Other specific local rituals, contests and training games were performed in various communities, like for instance the '*aspis* (shield) games' in Argos; these games were part of the great procession from Argos to the Heraion temple, in which the winner of a race in armour bore the bronze shield of Hera. This ritual should be understood within a wider phenomenon of military displays and offerings at sanctuaries beginning in the later 8th century BC that originated in concern for protecting sovereign territories.

In the early Iron Age, hunting seems less related to training activity for prestigious warriors than it was in the preceding Bronze Age. The treatment of hunting in Geometric art stands in marked contrast to the Achaean tradition in which the hunter was the 'most popular masculine power metaphor in all Late Helladic art' (Counts and Arnold 2010). Geometric hunting is generally a solitary pursuit in which a hunter may be aided by his dogs; the clear emphasis is on the individual rather than a group. The relative lack of interest in lion hunts in the Geometric Period contrasts with Bronze Age Achaean art, where this activity played an important role in the construction of power. Perhaps the lion's rarity in that period had something to do with it. It might be supposed that a more common quarry, the boar, took over this role in the early Iron Age. In this light, it is perhaps surprising that boar hunts are absent from Attic Geometric art, and are known in only two Boeotian *kantharoi* (drinking vessels) and possibly on a pottery fragment from Tiryns.

For the most part, Geometric hunt scenes focus on small and benign quarry, like foxes, hares and deer. The hunting of small, less dangerous animals involves skill and specific practice rather than risk-taking, courage, war-like ability and strength.

Warriors in hunting scenes, from a krater dated 11th century BC found at Knossos, Heraklion. (Archaeological Museum of Heraklion; authors' photo)





Early Hoplites marching with Proto-Corinthian helmets, a painting on an amphora from the Passas collection, 700 BC, Athens. (Andrea Salimbeti after Bottini)

BELIEF AND BELONGING

The period under discussion seems to show a consolidation in the religious dominance of the Olympian gods, already venerated in the Bronze Age, with the warlike Ares (called *rinothoros*, i.e. shield-piercing) and Pallas Athena being now the main divinities of bravery and war horses. Hesiod called Athena *Athevai Agheleie* – leader of the war-host (*Theogony* 318, 934). Hesiod's work, dated to the middle of the 8th century BC, shows that in the Late Geometric Period the cult of the Cronian

divinities had fully developed into the form known by the Greeks of the Classical Period (510–323 BC). Herodotus expressly states that Hesiod and Homer are the ones who established a theogony for the Greeks, gave the gods their names, distributed their honours and skills and explained their forms.

It is now widely acknowledged that even if continuity of cult activity between the late Bronze Age and early Iron Age can be demonstrated in some places, the problem remains of trying to piece together a detailed picture of the transformation mechanisms and the developments of cult activity that took place in the Greek Dark Age. Indeed, these periods mark the beginning of a new phase characterised by the formation of new regional settlement patterns and changes in the economy, by the ethnic problem regarding the new emerging class of 'Doric' people and by the development of different forms of early states. In this new socio-political and economic context emerged a novel cult system and practices that can no longer be defined in terms of the late Bronze Age and that, even in their diversity, represent at least chronological precedents of the Greek religious system. What is particularly interesting is the reduced use of urban cult centres with an increase in the construction of rural sanctuaries situated in areas intended to serve a number of sites, or in clusters. Such natural shrines, which arose at particular sites as the result of mythological tradition around a special event or special natural phenomenon popularly connected with the place, were eventually associated with one or more particular gods or divine beings.

E

CRETAN WARLORD AND RETAINERS, 9TH–8TH CENTURIES BC

Clay and bronze representations of warriors in Crete often feature conical pointed helmets. The three warriors shown here are based chiefly on the Idaean Cave shield depictions. The warlord (1, c.850–750 BC) is clad in elaborate equipment, strongly influenced by the Near East. His bronze conical helmet, very similar to contemporary Anatolian examples, features a high hair crest, as noted on numerous Cretan representations of the period, like the bronze plate from a tomb in Kavousi. His panoply comprises a padded tunic, a bronze belt and greaves. He also wears the rich gold ornaments and carries the sword found in the Khaniale Tekke tombs, together with the highly decorated bronze shield from the Idaean Cave. The iron sword, with three bronze rivets for the bone hilt plate, measures 47.3cm in length.

The retainers of the warlord carry two different shields. The round one (3) is of beaten bronze, echoing Northern European forms. The Dipylon shield (2) is made of wood and leather and is covered in bronze; it is held together with bronze nails. The elite archer is using an Assyrian-type composite bow, and he wears a padded tunic with geometric patterns. The donkey bears the supplies of the warriors, a detail copied from a terracotta pot of the Post-Palatial Period.



Typical of the sanctuary for many centuries, however, and indeed representing elements of continuity with the preceding phases, were the deposition of offerings, the ritual meals consumed and animal sacrifices. During recent excavations, dramatic evidence of human sacrifice on funerary pyres has been revealed at Eleutherna on Crete.

In 8th century BC sanctuaries, the dedication of weapons and armour was common practice, in the context of the formation of archaic *poleis* and the rise of the hoplite phalanx. The adoption of cremation, itself another form of single burial, also provides a notable contrast with all earlier periods. This practice may have spread from Anatolia and been introduced into the southern Aegean Islands via Muesgebi on Halicarnassus Peninsula. Achaean late Bronze Age cremations and cinerary burial are indeed attested to not only in some areas on the Anatolian coast near Troy but also in the Dodecanese, Crete and near Mycenae. The individual ritual of cremation adopted by the late Bronze Age Achaean community of Ahhiyawa in Anatolia was in fact also reflected in some passages from Homer's *Iliad*. On the Greek mainland, cremation occurred mainly in the Post-Palatial Period as a rite for individuals, who were generally buried in the same tombs as people inhumed in the traditional fashion; it was then adopted as a majority rite by some communities of the early Iron Age. The regions where this happened were most often those which maintained connections with the Near East, and the choice of cremation may therefore reflect the desire to display exotic contacts, as well as the wish to make a show of the funeral, perhaps to emphasise status. In early Iron Age burials there were appeals to a Bronze Age heritage, as witnessed by the continuing use as burial goods of figurines, relief beads, seal stones and seal rings; but there were also appeals to the new and exotic, in the use of Near Eastern types of beads, seals, amulets and iron knives (which may have been direct imports from Cyprus) and metal dress-fasteners, jewellery and weapons (especially swords, which have closer links with Italic and Central European models than Aegean ones).

THE WARRIOR AT WAR

Siege warfare

There is neither evidence for nor description of major siege warfare on the Greek mainland or Crete during the Iron Age. Although in some places, such as Athens, cyclopean fortifications from the Achaean period still remained, most of the new settlements expanded beyond the confines of former (in many cases relatively untouched) Achaean citadels or along roads, rivers and other watercourses. Such sites therefore had limited protection systems, or were certainly less well fortified than Bronze Age palaces. Siege warfare thus must have been on a limited scale and have consisted mostly of rapid raids on the new urban areas.

In Cyprus, however, many of the settlements and citadels built during the first Achaean migration, such as Palaepaphos, did suffer siege and destruction in the same manner as key late Bronze Age sites. These raids were carried out by the final wave of Aegean peoples and sea raiders who continued to ravage the eastern Mediterranean coast and islands during the early Iron Age period.

Naval warfare

The pictorial record suggests that much continuity existed between Bronze Age and Iron Age ship types and ship building, as elites continued to express their status through seafaring. The construction of galleys and their depiction continued after the fall of Achaeans palatial society. The more primitive bow design of the Tragana ship was still being reproduced as late as Middle Geometric I Period at Lefkandi. The same area has also produced contemporary Sub-Proto Geometric Period evidence for a slightly more advanced design with greater integration of the stem post into the bow, already seen in other Bronze Age types from the Greek mainland and Cyprus. Fragmentary images on some Late Helladic IIIC to Proto-Geometric kraters and the vessels depicted on some Early Geometric krater shards further underline this continuity. The deck remains in use, as illustrated by one Lefkandi ship and on the Middle Geometric krater now in the Metropolitan Museum. It was to constitute the crucial element in the development of hulls with the rowers on two levels as illustrated by the Dipylon ships. The late Archaic/Classical triremes eventually developed from this.

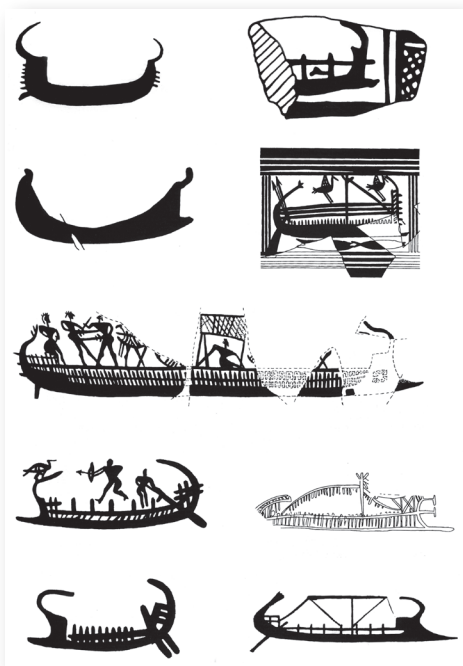
One of the most recognisable differences between the late Bronze Age long ships and some of the Geometric ones is the presence of the long bow projection, which cannot necessarily be identified as a ram. In fact, if it is assumed that the bow projection is a ram, it must satisfy the minimal criteria that governs the positioning of this weapon, namely its relationship to the keel, post and gunwales in order to be able to absorb the shock of collision.

Ram-equipped ships can be identified in some depictions dated post 850 BC, like those pictured in pottery from Khaniala Tekke Tomb II. It is also suggested that the date at which ramming becomes the salient feature of naval warfare is intimately related to the invention of the trireme and to the prerequisite economic context, causing the date to be brought forward even further, perhaps, even into the 6th century BC.

Some scholars argue that most Iron Age ships were multi-purpose craft, allowing shorter bursts of higher speed as well as movement irrespective of wind conditions, while also featuring greater cargo-capacity due to the increased beam.

Fragments of Dipylon pottery representing a naval battle, from Athens, mid-8th century BC. (National Museum in Warsaw, Poland, inv. no. 142172 MNW; authors' photos)





Examples of Proto-Geometric to Mid-Geometric ships. From top left to right: Fortetsa, Tomb VI; Lefkandi, Skoubris cemetery; Halikarnassos, krater; Lefkandi, Tomb 61; Attic, krater; Eleusis cemetery; Khaniala Tekke, Tomb 3; Anavyssos, cup; Anavyssos, hydria. (Andrea Salimbeti after Wedde)

Methods of warfare

The combination of different weapons found in Greek Dark Age graves may provide evidence of methods of warfare (including localised forms), or simply different burial customs. In general terms, we can assert that the warrior was provided with a sword or dagger for cutting and thrusting, and a spear as a complementary weapon. This suggests that close combat was the most common fighting method, and the presence of axes, spears and daggers in grave finds would support this theory – although the effectiveness of archery and of long-range fighting weapons is indicated, in the Proto-Geometric Period, from finds at Athens and Lefkandi. The illustrations on Dipylon pottery often show archery and thus imply that in the early Iron Age it held a similar importance to the position it held during the late Bronze Age.

A plausible method of warfare during the Greek Dark Age and Geometric Period, according to available evidence, appears to begin with an initial phase of massed long-range fighting with the casting of spears. Following this, the units broke up into smaller groups and engaged in close combat with swords, a thrusting spear and one or more daggers or knives. The less powerful individuals seem to have possessed only a spear and a knife. Although direct evidence for any metal armour is lacking, we would expect some sort of defensive equipment to be used, such as a perishable-material corselet, helmet and shield, based on the evidence from pictorial representations and figurines.

Based on both artistic representation and archaeological finds, the most widely accepted theory today is that the conflicts of the early Iron Age comprised nothing more than small-scale skirmishes between neighbouring

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WAR CHARIOT, WARRIORS AND A YOUNG WOMAN, DYPHILON, ATHENS, c.850–750 BC

The Athenian aristocratic warrior at centre (1) is based on the famous Aktorione Vase, a late Geometric oenochoe (wine jug) showing scenes from the *Iliad*. The helmets represented in Dipylon pottery are mainly examples of conical ones (*Kegelhelmen*) fitted with a tube for the crest support. His armour comprises a leather corselet fitted with bronze bosses and plates, while his lower legs are protected by a mixture of linen and bronze. The Aktorione Vase confirms the employment of rectangular shields made of wicker and leather, and painted with chequered patterns.

The Dipylon shield, on the back of the chariot driver (2), is the form most often represented in Attic pottery of the period. The man wears no body armour but sports a cone-type helmet variant. He is armed with a sword.

The young woman (3) is reconstructed according to the fashion of the period. Pins in Proto-Geometric graves are often found in pairs, sometimes in larger groups and it has been commonly assumed that arrangements of pins in the grave represent the manner in which they were commonly worn in life to fasten a basic *peplos*. Pairs of *fibulae* are usually found around the shoulders area, sometimes combined with pins. The disposition of goods in some graves also suggests more complex arrangements, including a third *fibula* on the chest, several arranged across or down the body as if to fasten a dress or shroud, and even one or more around the head to secure a veil or other head-covering. Finger rings of metal wire or sheet metal (bronze, gold or silver) were also common in the early Iron Age, as well as spiral twists of wire worn in the hair or as earrings, dress ornaments of gold sheet or foil, necklaces, and ornaments worn around the wrist or arm.





Detail of a warrior, on a votive pottery shield, from Tiryns, early 7th century BC. (Archaeological Museum of Nafplio; authors' photo)

settlements. The main aim of these relatively disorganised operations must have been plundering, although annexation of land is also possible. We can envisage small bands of men, armed with javelins, spears, knives or daggers and probably non-metal shields and corselets, who followed the leading men of their communities into battle; the latter would have been borne on chariots, and were better armed with metal helmets, greaves and both sword and spear or two javelins. These more heavily armed warriors were possibly accompanied by archers and sling throwers.

The javelin seems to be used more than the thrusting spear, and during the early Iron Age it became the most popular spear type. In graves of this period, two to three spears of identical size are often found. The burial of multiple spears probably implies that these spears were meant to be thrown. Occasionally in graves of the 9th century BC we find the pairing of one larger and one smaller spearhead. The size difference may imply that one spear would have been thrown while the other would have been used to thrust at the enemy when man-to-man combat ensued.

The earliest fighting scenes on Geometric vases depict single combat, with few representations of fighting military formations. We do not definitively know when the transition from *oikos*-based early Greek society ruled by a warrior aristocracy to *polis*-based society of the citizen hoplites took place. It is clear that the process was gradual and not identical in all areas of the Greek world. But it happened, and it brought, together with developments in Greek political life, drastic changes in the way in which war was waged. The first representation of warriors fighting like later hoplites, in close order, can be dated to the middle of 7th century BC (the Chigi olpe – a pitcher – from Corinth, today in the Museo Nazionale Etrusco di Villa Giulia, Rome); by this time the Greek *poleis* had fully developed the military system of citizens equipped as hoplites, fighting together for their city-state.

In the age of the hoplite, the heavy weaponry of the fully armed warrior was of greatest use in close order, inside the phalanx (*Theogony* 935) formed

by compact lines of armed men. When the lines of the phalanx broke, the weaponry of the individual hoplite was sometimes too heavy to allow him to fight efficiently and also hindered him in escape. With the thrusting spear as his main weapon, the short stabbing sword was a secondary weapon useful for close fighting.

With regard to the use of chariots in Iron Age warfare, it seems plausible that, considering their light construction and the scenes represented on pottery, they fulfilled a variety of functions, including acting as vehicles for processions, racing and warfare. Even if only a few vases show the chariot involved directly in fighting, the military function of Iron Age chariots should be very similar to that of the late Bronze Age period, i.e. primarily as transportation for high-status warriors to and from battle or to different places on the battlefield. When necessary, the chariot could also have been driven in close enough to throw a javelin at the opposing warriors. More frequently, warriors would dismount to fight and remounted when facing trouble, either by being outnumbered by the enemy or when wounded. Thus there was neither organised manoeuvre nor massed attacks using chariots. The latter would be used only in pursuit of a fleeing enemy, after which the warriors would once again dismount to fight. Significantly, the bow is never associated with the chariot in Geometric art; archers are always depicted standing on the ground.

There is also a strong likelihood that by the late 8th century BC chariots were rarely used in battle because around the late 8th or early 7th century BC the hoplite phalanx began to develop. The development, however, was slow, and the transformation of a mass of combatants into the more traditional phalanx required a long evolution in warfare tactics. Analysing the army formation described by Pausanias in the First Messenian War (735–715 BC), the famous hoplite phalanxes of late Archaic and Classical Greece do not yet appear to be present, given that crucial defining elements such as the round *aspis* shield do not seem to have been in use during this period. The earliest depiction of the latter comes from the Chigi pitcher, which is dated to the mid-7th century BC, some two generations after the war. Furthermore, the bronze cuirass and helmet found in Argos and dated to around the late 8th century BC are not accompanied by a round hoplite shield. Even if some form of proto-hoplite *aspis* did exist, what was definitively absent during this period was the presence of political equality amongst the infantry, a prerequisite for the formation of a hoplite phalanx. Both Spartans and Messenians in the late 8th century BC had a constitution based on the primacy of the aristocracy; warriors thus followed the aristocrat warlords in mass formations, but not in the ordered phalanx of the later age. The heavy infantry would have fought in formations, but with each man for himself with sometime daring warriors moving out of formation and heading into the enemy on their own, an inconceivable event in a Classical phalanx. This was similar to late Bronze Age Achaean methods of fighting as described by Homer in the *Iliad*, where in a few cases only a generic close formation of infantry warriors followed their warlords, not a phalanx. The latter formation was not even in use when the *Iliad* was presumably ‘composed’. Also reminiscent of Bronze Age warfare are the duels between the heroes of each side, as in the First Messenian War when the kings themselves broke from their line to hunt down their opposing counterparts.

It was probably only during the Second Messenian War (685–668 BC) that the Spartan army began using hoplites deployed in close formation. This tactic, in which coordination and discipline – not individual initiative – were essential, profoundly influenced Spartan culture. Much of the organisation of the Spartan state in the Classical Period stems from that of the hoplites.

The First Messenian War (735–715 BC)

No specific campaigns or major armed clashes are documented on the Greek mainland and Crete during the Dark Age and the beginning of the Geometric Period. The most important event of the Late Geometric Period is the First Messenian War described by Pausanias in Book 4 of his travels. The expansion of Sparta in Laconia began in the 8th century BC, under the leadership of King Archelaus (r.c.770–760 BC), who conquered the territory along the northern Eurotas River. During the reign of Archelaus' son Teleclus – not long before the First Messenian War – the expansion continued with the colonisation and the rapid annexation of the entire southern valley of the Eurotas, which was further consolidated post 740 BC under the rule of Teleclus' son Alcmenes.

Any expansion of Sparta towards the east and the sea would have to confront the power of Argos, so the Spartans opted to conquer the Plain of Messenia in the west. Under the pretext of the assassination of King Teleclus (c.740 BC – attributed to the Messenians with the complicity of Cretan and Corinthian mercenaries), and while the Messenians benefited from the support of the Arcadian tribes of Argos and Sicyon, Sparta began (c.735 BC) a 20-year war that ended with the fall of the last Messenian bastion of Mount Ithome around 715 BC. The war began with the Spartan crossing of the Taygetus mountain range into Messenian territory and a surprise night attack on the Messenian border village of Ampheia. Having conquered this settlement, the Spartans continued to raid Messenian farms but avoided cutting down olive trees or demolishing buildings since they considered these their future property. At the same time they attacked any town they came across. Three years after the capture of Ampheia, the Messenian King Euphaes ordered his

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SPARTAN HOPLITE FIGHTING ARGIVE WARRIORS BEFORE A TEMPLE, ARGOLIS, 720 BC

The Spartan hoplite (1, copied from one of the warrior figurines from the Menelaion Sanctuary) is equipped with a large round shield decorated with a petal motif. His corselet is made of quilted linen reinforced with bronze studs. He also wears a bronze belt, a typical crested Proto-Corinthian bronze helmet and greaves. The latter barely cover the height of the shin, and as yet there is no attempt to show any musculature. He is armed with two javelins or dual-purpose spears, which can be used either as javelins or for close-quarter fighting.

A fragment of late Geometric pottery from Argos shows a hoplite (2) wearing an early Proto-Corinthian helmet, topped with a round, plumed crest. His armour consists of bronze body armour, bronze greaves and a *Herzsprung* bronze shield. Examples of bronze-faced shields have been found at shrines such as Delphi and Idalion in Cyprus. The V-shaped notch in the centre reflects, according to Nick Sekunda, the original leather construction of this type of shield, considered of Central European origin. His armament is that of the typical early hoplite, with two spears and a short sword.

The warrior on the ground (3) is copied from the votive shield from Tiryns. He wears a bronze helmet of clear Urartian influence, with a bronze crest and chequered plumes. Of note is the Dipylon shield variant he has dropped, his painted baldric, which echoes those of the Homeric Bronze Age heroes, and his multicoloured linethorax.





Votive figurines of warriors, from the Menelaion Sanctuary, Sparta, 8th–7th century BC. The warriors represented here are among the earliest depictions of the Lacedaemonian military elite. On their circular *hoploi* the shield devices (*episemata*) of ancient Sparta can be identified, including a sun with spiral rays or radiant crescent, a sun with straight rays, floral patterns and a star – all symbols linked with the heavenly cosmogony. (Archaeological Museum of Sparta; authors' photos)

army of about 500 men to meet the Spartans on the battlefield. Euphaes thus drew up his army – composed of cavalry, heavy infantry and light infantry – on one side, appointing Cleonnis as his general.

As the battle began, the ravine dividing the two armies prevented the heavy infantry on each side from engaging in close contact. The only sections that came into meaningful contact were the cavalry and light infantry units fighting beyond the ravine. During this engagement Euphaes ordered a palisade to be built to the rear, the flank and eventually along his front, thus creating an entrenched camp that successfully kept the Spartans out. Frustrated by their opponent's tactics the Spartans were unable to besiege the Messenians and they departed from the field. The first real engagement of the war thus ended in a stalemate.

A year later the Spartans returned to the battlefield with both their kings: Theopompus, who commanded the right, and Polydorus, who commanded the left wing. The Spartan centre was commanded by Euryleon, who was of Theban origin. Pausanias describes the battle in vivid detail. Just before the initial clash of infantry, both sides taunted each other. Shields were brandished, fierce looks and words exchanged; then at last the attack began. The Messenians were inspired alike by desperation and readiness to face death, the Spartans by their better training and

professionalism. They employed a deeper formation, hoping that attrition would help defeat the Messenians. The fighting continued all day long, until night fell. The next day neither side celebrated victory, but instead collected and buried their dead.

Over the course of the following five years, both sides continued the struggle with small parties raiding the other's territory with no decisive result. In the fifth year of Aristodemus' reign, the largest battle of the war took place, with both sides marshalling all their forces along with many allies as well. The Corinthians joined the Spartans while the Messenians were aided by a full array of Arcadian soldiers and two contingents from Argos and Sicyon. The Spartan attack was absorbed by the first line of handpicked men while the mobile Messenian second line enveloped the Spartan army, flanking them and hitting them hard with every kind of projectile. Furthermore, the mobility of the Messenian light infantry would not allow the Spartans to catch up and fight at close quarters. The Spartans would eventually break their line and rout. This was the only battle with a definite result, although the victor would not be able to enjoy the consequences. Based on interpretations of the oracle, the Spartans dealt with the Messenians via espionage, sending 100 men as supposed defectors to Mount Ithome to spy on the Messenians as well as disrupting the Messenians' alliances – but without major success.



Iron weapons and implements from a warrior's cremation dated 900 BC from the Agora cemetery, Athens. In addition to a long iron sword, the equipment of this aristocratic warrior consisted of two spearheads, two knives, a broad axe, a whetstone, and two snaffle bits, the last two elements perhaps for use with chariots like those depicted on several Geometric vases. These items were found together with a large ash-urn (a neck amphora preferred for male cremations), which was covered with a stone and placed in a pit with other offerings that had been burnt on the pyre. The iron sword had first been heated in the fire and then wrapped around the urn. Carbonised figs and grapes were found in the upper part of the urn under the layer of stones. (Museum of the Ancient Agora, Athens; authors' photos)

As the war entered its twentieth year, the Messenians once more sent for a sign of hope from the oracle at Delphi, who now dictated: 'To those who first around the altar set up tripods ten times ten to Zeus of Ithome, heaven grants glory in war and Messenian land'. News of the oracle also made its way to Sparta, where a man named Oebalus created a hundred smaller tripods from clay – instead of the larger ones built, in time-consuming fashion, of wood by the Messenians. Oebalus then placed the tripods in the shrine when night had fallen. The following morning the Messenians were horrified to find the tripods.

After the death of their king Aristodemus, the desperate Messenians gave Damis the power of tyrant and gathered all their resources for the final battle, but all to no avail. In the latter, all the Messenian generals were massacred along with the most notable men. The war thus ended with Sparta as victor. Some of the Messenian aristocrats fled Arcadia while the mass of the population was forced to donate half of its agricultural production to their new masters.

The conquest of Messenia changed the course of Sparta's policy towards neighbouring city-states. Unlike other Greek cities, which overcame a lack of land by colonising territories overseas, Sparta – apart from colonising Taranto in 708 BC – devoted all its energies into the exploitation of this new wealth that would make it the most powerful city-state in the Peloponnese.

MUSEUMS AND FURTHER RESEARCH

Archaeological Museum of Argos: a must visit, notably to see the famous panoply of Grave 45.

Archaeological Museum of Chania, Crete.

Archaeological Museum of Eretria: the most important collection of material from the period, including the beautiful Lefkandi finds.

Archaeological Museum of Heraklion, Crete: a superb collection of Greek Dark Age and Geometric Cretan material plus many images of warriors and weaponry.

Archaeological Museum of Mycenae: among the excellent local finds are weapons and images of warriors.

Archaeological Museum of Nafplio: holds the treasure of Tiryns and much Geometric Period material, including weapons and pottery.

Archaeological Museum of Olympia: contains the best-preserved statuettes of warriors and helmets of the period.

Archaeological Museum of Patras: opened in 2009, this museum holds the most important finds from Achaea, with a special exhibition dedicated to weapons and armour.

Archaeological Museum of Vravrona: set in an idyllic landscape and built adjacent to the archaeological site of the Sanctuary of Artemis, the museum holds a great collection of Geometric pottery.

Cyprus Museum, Lefkosia: one of four archaeological museums on the island, and the most relevant to the topic of this work.

Kerameikos Archaeological Museum, Athens: the main source of Proto-Geometric and Geometric archaeological material. Next to the museum is the Dipylon Gate and an excavation of the funerary area.

National Archaeological Museum of Athens: contains many finds from the Proto-Geometric and Geometric periods, and weapons.

The British Museum, London: contains important military finds from Cyprus and from Geometric Thessaly.

The Metropolitan Museum, New York: a superb collection of Geometric pottery and material.

Further resources and information relating to weaponry of the Greek Dark Age, as well as links and a full bibliography, can be found on the authors' website at <http://www.salimbeti.com/micenei/index.htm>

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GREEK EQUIPMENT AND WEAPONRY, 850–700 BC

(1) This figure represents an Athenian warrior of the Geometric Period, typically represented on Dipylon pottery. He is carrying the Dipylon shield (2) with a baldric or telamoun. The shield, according to Attic pottery, sometimes appears to be made of wicker and leather and sometimes of solid wood. The bronze conical helmet with crest tube, from Argos, is clearly of oriental pattern, but made in a local style. Note his highly decorated *chiton* (3) and bronze belt (4).

(5) This figure represents an Argive hoplite c.700 BC; it is based on the earliest-known pre-hoplite equipment found at a burial site in Argos. The helmet is made of five pieces and furnished with a crescent-shaped crest; it is of the *Kegel* type, leaving the face open but protecting the cheeks and neck. He is armed with two double-headed iron axes (6), and wears three gold finger rings on his right hand. In the Argos burial, fire spits (7, *obeloi*) and traces of sheet metal (probably for greaves) were also found.

The Argos cuirass (8), like its Bronze Age forerunners, has a front and back plate. Both plates are simply decorated in the form of the anatomy of the human torso, with narrow embossed ridges around the arm holes, the waist and the hips. Around the neck, the arm holes and the hips, the bronze is rolled forward to strengthen the edge. The two plates were fastened to each other by two tubular projections placed on the right edge of the front plate (9), which fitted into corresponding slots in the back plate and held in position with two pins.

(10) Spearheads from Athens (900–800 BC) and Tiryns (700 BC). (11) Early Iron Age sword, from Kerameikos (820 BC). (12) Sword from Philia (750 BC) and scabbard. (13) Round shield. (14) Dipylon shield with cutaway construction detail. (15) A *Kegel* helmet Variant B from Argos. (16) Proto-Corinthian helmet.



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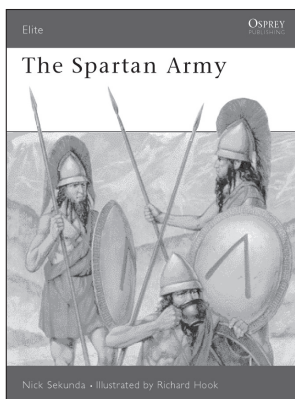
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INDEX

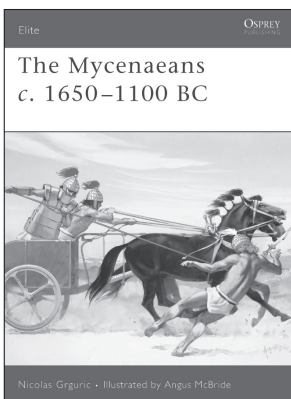
Figures in **bold** refer to illustrations.

- Achaea 5–6, **A** (13), **B3** (17)
 Agis I, King of Sparta 9
 Archelaus, King of Sparta 56
 Argos 9, 10, 47, 56, 58
 armour **H8–9** (61)
 chariots 44
 helmets 35, **H5** (61), **H15** (61)
 warriors **G2** (57), **H5** (61)
 weapons 23, 23, **H6** (61)
 Argos Panoply 37–38, 39
 armour 16, 37–39
 corselets **B3** (17), **C1** (29), 37–38, 39, **D1–2** (41), **F1** (53), **G1** (57)
 cuirasses 11, **A** (13), 38, 39, **H8–9** (61)
 greaves **B2** (17), 38–39, 38, 40, 42, **E1** (49), **F1** (53), **G1** (57)
 linen **A1** (13), **C1** (29), 37, 39, **D1–2** (41), **F1** (53), **G1** (57), **G3** (57)
 mitra 4, **A3** (13)
 neck protectors 11, **B1** (17)
 scale 11, **B1** (17), **C1** (29)
 Asine 10, 19
 Assiros 8–9
 Atalanti 12, 19, 25
 Athens 9, 10
 armour 39, 42
 chariots 39, 42, 43, 59
 helmets 36, 37, 48, **H1** (61)
 shields 27, 30, **H2** (61)
 ships 51, 52
 warriors **D2** (41), 48, **F** (53), **H1** (61)
 weapons 16–18, 19, 19, 23, 24–25, 24, 26, 59, **H10–11** (61)
 chariots and charioteers 16, 19, **C4** (29), 39–44, 42, **F2** (53), 55
 clothing 11–15
 bronze belts 27, 30, 34, 37, **E1** (49), **G1** (57), **H4** (61)
 charioteers 43
 pteryges 4
 pinned 12–15, 14, 15, **F3** (53)
 tunics 11–12, **D2** (41), **E1** (49), **H3** (61)
 Crete
 armour **E1** (49)
 chariots 39, 43
 Fortetsa 12, 24, 24, 27, 30, 37, 52
 helmets 32–33, 33, 34–35, 36, **E** (49)
 hunting 47
 Idaeon Cave 27, 30, 34–35, 46, **E1** (49)
 Khaniale Tekke tombs 11–12, 14–15, 19, 21, 24, 26, 30, **E1** (49), 51, 52
 Knossos 24, 24, 25, 26
 shields 27, 30–31, 30, 32, 46, **E** (49)
 ships 51, 52
 warriors **D1** (41), **E** (49)
 weapons 19, 20, 21, 21, 23, 24, 24, 25, 26, 26, 27, 40, **D7** (41), **E** (49)
 Cyprus 5, 50
 armour 11, **B1–2** (17)
 chariots 39, 43–44, 43
 Enkomi 16, 25, 36, 40, **D3** (41)
 helmets **B1–2** (17), 32, 33, 33, 34, 34, 36, 36
 Palaepaphos-Skales 11, 16, 20, 22, 34
 shields 27, 36, 36
 warriors **B** (17)
 weapons 11, **B1–2** (17), 22, 23, 25
 Diognetus, King of Athens 9
 Dipylon pottery
 chariots on 39
 helmets on 33–34
 naval battles on 51, 51
 shields on 28, 32
 as source 18
 weapons on 19, 22
 Dorians 6, 9, 12–13, **A2** (13)
 Euphaes, King of Messenia 56–58
 First Messenian War (735–715 BC) 10, 56–59, **G** (57)
 funerary practices 43, 50, 59
 government and leadership 7, 10–11, 45
 helmets and headgear **A1** (13), **B** (17), 32–37, 32–37, **D1–6** (41), 48, **E** (49), **F1–2** (53), **G** (57), **H1** (61), **H5** (61), **H15–16** (61)
 Hesiod 5, 6, 9, 12, 15, 30, 48, 54–55
 Homer and Homeric poems
 on armour 16
 audience 46
 on chariots 39
 on clothing 56
 on cremation 50
 Herodotus on 48
 iron technology in 15
 life dates 9
 on religion 48
 on shields 30
 as source 5, 6, 7, 46
 on swords 23
 on warfare and fighting style 19, 55
 weapons' function in 16
 hoplites 8, 36, 38–39, 44, 48, 54–56, **G** (57), **H2** (61)
 horses *see* chariots and charioteers; mounted warriors
 hunting 47, 47
 ironwork 15–16, 20–21, 25
 jewellery 14–15, 14, 15, **C** (29), **E1** (49), **F3** (53), **H5** (61)
 Kavousi 35, 37, 39, 48
 leadership *see* government and leadership
 Lefkandi
 chariots 39, 40
 clothing 12, 14, 15
 helmets 34, **D6** (41)
 shields 27
 ships 51, 52
 warriors 11, **C** (29), 45
 weapons 16–18, 20, 22, 23, 24, 24, 25, 26, **C** (29)
 leisure activities 45–46
 Locris 5, 15, 25
 Lycurgus, King of Sparta 9, 11
 manpower 11
 Marmariani 23, 25, 26
 mounted warriors 44–45, 45
 Mycenae 5, 9
 naval warfare 51, 51
 Olympia 33–37, 35, 36, 39, 40
 Olympic Games 9, 10, 40
 Patras 12, 27, 37, 39
 Pausanias 9, 10, 26, 55, 56, 58
 phalanx formation 8, 46, 54–56
 Pheidon, King of Argos 9, 10
 Philia 15, 24, 27, **H** (61)
poleis 7, 11
 Polydorus, King of Sparta 9, 10, 58
 religion 48–50
 Rhodes 15, 19, 23, 25
 rites de passage 46–47
 shields 27–32, 31, **D1** (41), **F1** (53), **G2** (57)
 aspis 55
 Dipylon **B3** (17), 27, 28–30, 28, 36, 36, **D12** (41), **E2** (49), **F2** (53), **G3** (57), **H2** (61), **H14** (61)
 round 4, **A** (13), **B2** (17), 27, 30–31, 30, 31, **D11** (41), 46, **E1** (49), **E3** (49), **G1** (57), 58, **H13** (61)
 votive 47, 54
 ships 51, 51, 52
 siege warfare 50
 Sparta 9–10, 10–11, 55, 56–59, **G** (57), 58
 Teleclus, King of Sparta 56
 Thebes 19, 38
 Theopompus, King of Sparta 58
 Tiryns 5, 9
 armour 39
 helmets 32, 32, 37
 hunting 47
 shields 27, 30
 warriors **A1** (13), 54
 weapons 19, 20, 22, 23–24, **D10** (41), **H10** (61)
 training and discipline 46–47
 Voudeni 4, 32, 42
 warfare methods 18, 52–56
 weapons 15–27
 axes 26, **C3** (29), 59, **H6** (61)
 bows and arrows 11, **B** (17), 26–27, 26, 28, **C** (29)
 slings 26
 spears and javelins 11, **A** (13), 16, **B** (17), 18, 19–20, 19, 20, 23, 28, **C** (29), **D10** (41), **G1–2** (57), 59, **H10** (61)
 swords, daggers and knives 11, **A** (13), 15–16, **B** (17), 20–25, 20–24, **C** (29), 40, **D7–9** (41), **E1** (49), **G2** (57), 59, **H11–12** (61)
 usage 43, 52–55
 women
 burial 24, 38, 45
 clothing 14, 14, 15, 28, **C2** (28), **F3** (53)
 and male rites of passage 46–47

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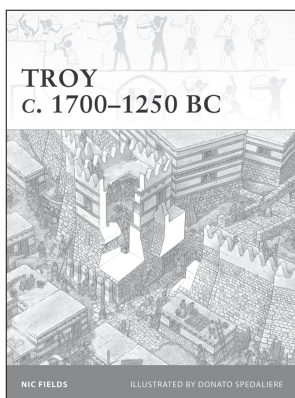
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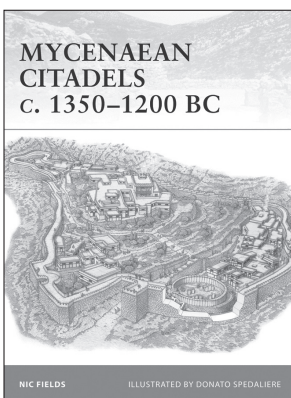
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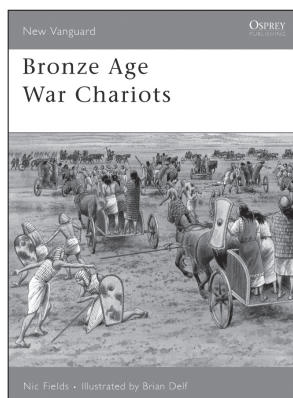
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