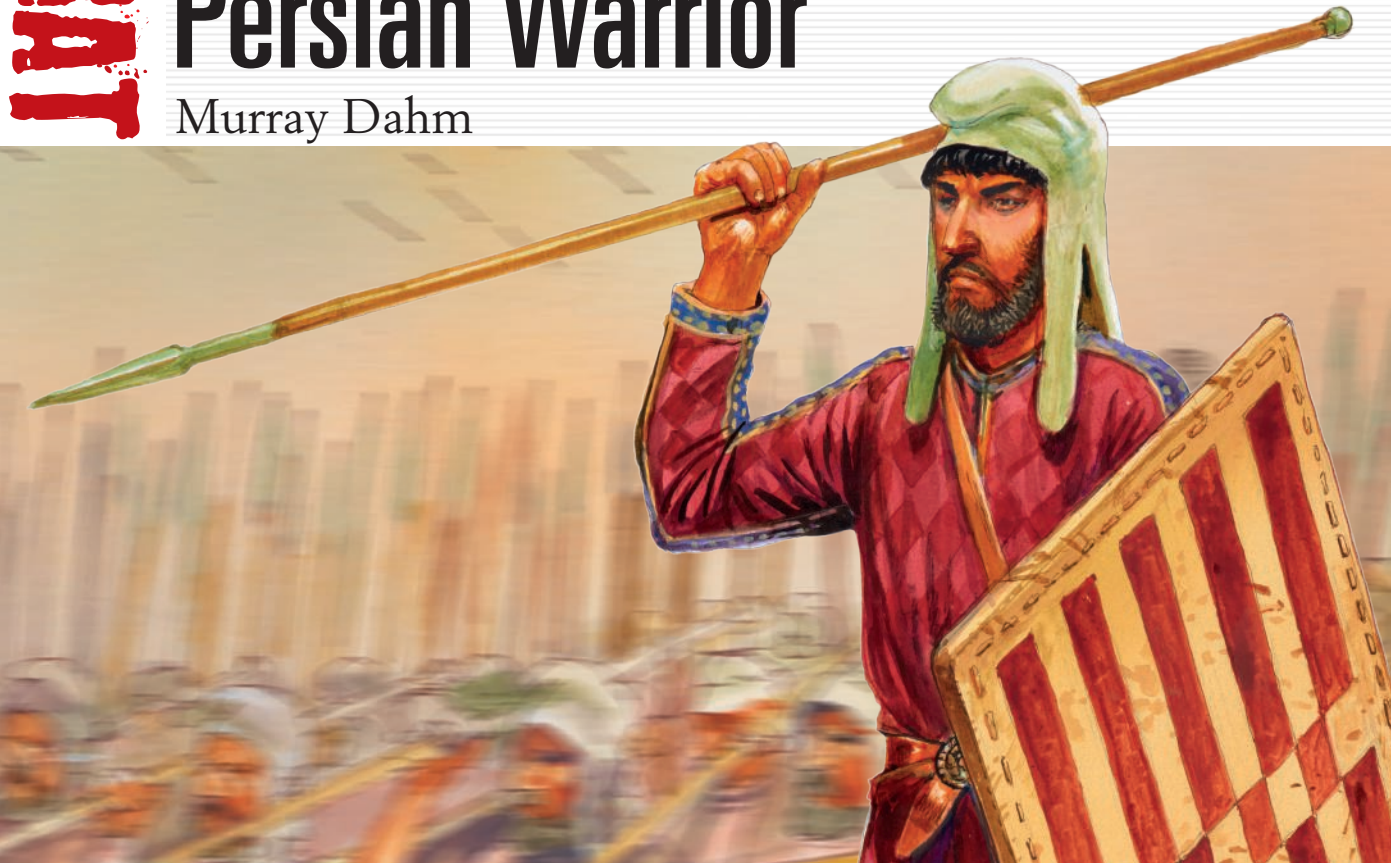
COMBAT

Alexander confronts the Achaemenids, 334–331 BC

Macedonian Phalangite
VERSUS
Persian Warrior

Murray Dahm



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Illustrated by Peter Dennis

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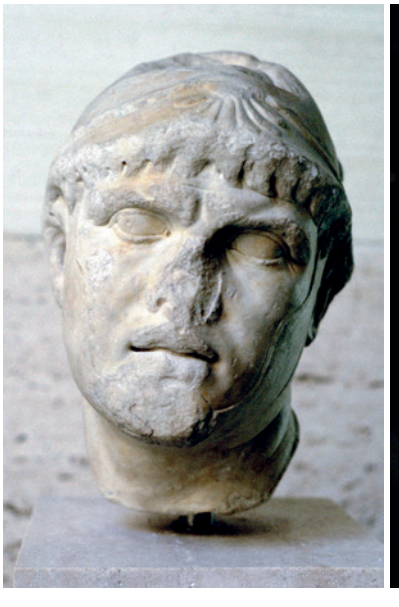
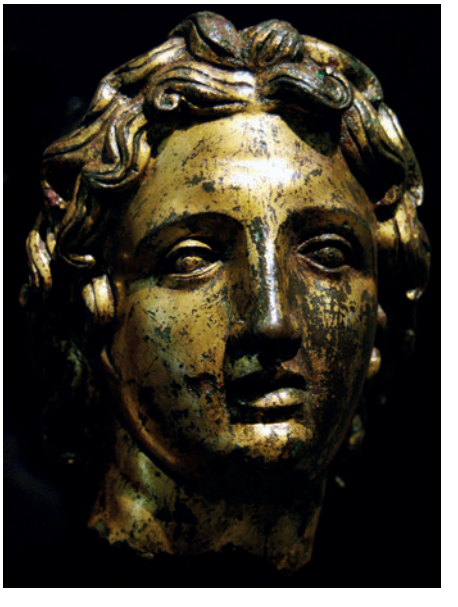
Introduction

In August 334 BC, the 22-year-old Macedonian king, Alexander III (r. 336–323 BC), invaded the vast Achaemenid Persian Empire with an elite army of some 30,000 veteran infantry and 5,000 cavalry. With this force Alexander intended to conquer the immensity of the Persian Empire. This conquest had been the dream of Alexander's father, Philip II (r. 359–336 BC), who had created a professional army of unsurpassed power and efficiency, combining new infantry formations, weapons and tactics with a devastating and mobile cavalry. The Macedonian phalanx was at the heart of this new army. It was designed to be able to charge and manoeuvre to where it was needed on the battlefield, and to absorb a great deal of punishment and thus provide time for





RIGHT
Alexander's father, Philip II of Macedon, shown here in a portrait bust, was more than likely the man responsible for the military reforms in Macedon which created the phalanx and the 'hammer-and-anvil' tactics which Alexander implemented so well. Philip's reforms of Macedonian infantry tactics are apparent in his and his son's accomplishments. (Ann Ronan Pictures/Print Collector/Getty Images)

FAR RIGHT
A bronze gilt bust of Alexander the Great, dating to the 2nd century BC and now in the National Roman Museum, Rome. We are told by Plutarch (*Alexander* 14.1) that the most faithful likeness of Alexander was made by Lysippus, Alexander's personal sculptor. No Lysippus original has ever been found, although in 2010 two men were arrested in Greece for possession of illegal antiquities and one of the items in their collection could be an original Alexander portrait by Lysippus. (Prisma/UIG/Getty Images)

Detail of the Alexander Mosaic from Pompeii but now in the National Archaeological Museum, Naples, depicting Alexander the Great. Alexander was already an accomplished commander when he succeeded his father Philip to the throne in 336 BC. In combat, Alexander took his place at the head of the *hetairoi* (Companions) cavalry in most of his battles. With this force he struck the killing blow, charging straight towards a vital weak spot deliberately opened up between an opponent's units or towards the enemy commander. Alexander should not be considered simply a commander of cavalry, however, and he did fight with the infantry on occasion, such as at Sagalassos in 333 BC (Arrian 1.28.3), where the terrain did not suit cavalry. Several of Alexander's generals commanded the infantry divisions and it was the Macedonian phalanx, the core of Alexander's army, which enabled him to achieve his victories; it was the anvil to his cavalry hammer, but it was no inanimate block waiting for the king's cavalry to strike. Alexander, his commanders and the phalangites themselves seem to have realized the importance of the role of the phalanx and taken pride in it. (Photo12/UIG via Getty Images)

Alexander to get his cavalry into the right position for his hammer blow. All phalangites knew they were vital to Alexander's battlefield plans; hence they were called the *Pezhetarioi* (Foot Companions), the parallel of Alexander's *hetairoi* (Companions) cavalry. The overwhelming importance of the phalanx is implied in the great lengths taken to ensure that its flanks were secured, usually protected by other close-order infantry units, lightly armed troops, or even cavalry.

Since the defeat of the Persian invasions of Greece in the Graeco-Persian wars of 490–479 BC, Persia had continued to be a presence in Greek politics, playing a vital role in the defeat of Athens in the Peloponnesian War in 404 BC, in later wars, and in Greek politics in general with the period of

This group of artefacts from the Oxus treasure, dating from the 4th century BC and now in the British Museum, includes a gold votive plaque depicting a Persian soldier. The sword, trousers and tunic correspond to depictions dating from more than a century earlier. (Universal History Archive/ Getty Images)

From the Granicus to Gaugamela, 334–331 BC

MAP KEY

Alexander crossed the Hellespont into Asia in the spring of 334 BC. Leaving his army, the Macedonian king visited Troy to pay his respects to the tomb of Achilles before advancing north-east along the coast. The Persian commanders met at Zeleia and advanced to the Granicus River (modern-day Biga Çay), where Alexander met and defeated them. Victory there permitted Alexander to advance to Sardis and then to various cities such as Ephesus where he installed democracies and left members of his Companions as the commanders of garrisons. Most cities welcomed him, although Miletus and Halicarnassus had to be besieged. Alexander advanced along the southern coast of Anatolia, even during midwinter 334/333 BC, as far as Phaselis in Lycia. From there he advanced to Perge and then Side in Pamphylia.

Having secured the coast, Alexander then headed inland into Phrygia. He marched on Sagalassos and took the surrender of the stronghold of Kelainai. From there he set out for Gordion in Galatia, possibly for propaganda purposes as much as anything else. At Gordion was the palace of Gordios and legend related that whoever undid Gordios' knot would rule Asia. According to Arrian (2.3.7), Alexander severed (or undid) the knot and then moved on to Ancyra in Galatia and then to the Cilician Gates, the main pass through the Taurus Mountains. The Persian defenders abandoned their posts and allowed Alexander to advance from Anatolia into Cilicia and towards the city of Tarsus.

Alexander again secured the coast around Tarsus, taking Soloi to the west before moving east towards Mallus. He learned of Darius' approach (depending on the source, at Gordion, Tarsus or Mallus) and marched south. Darius had come to a place named Sochoi, perhaps four days from Mallus (but not securely identified). Alexander moved through the Syrian Gates and down the Syrian coast before learning that Darius had marched behind him to Issus (crossing the mountains at the Amanic Gate). Alexander turned back and met Darius in battle at the Pinarus River, south of Issus. There Darius was defeated and the Persian king fled back to Babylon to regroup and summon a new, larger army.

Alexander did not pursue Darius but continued along the coast, securing it as far as Egypt and taking cities such as Sidon, Tyre, Damascus and Gaza to secure his rear before heading to Egypt in 332 BC. Returning from Egypt in the spring of 331 BC, he retraced his steps to Gaza and then Tyre, before marching inland to Damascus and then Thapsacus (the location of which remains uncertain), crossing the Euphrates River there. Alexander then marched on to the Tigris River, perhaps drawn on by Persian forces which withdrew before him, marching quickly to meet Darius at Gaugamela, somewhere near the ancient city of Nineveh.

the King's Peace following 387 BC. The Persian army or *spada* which faced Alexander's forces had conquered and maintained the Persian Empire since the 6th century BC. The flexibility of units within its armies to fight in their own style also allowed the army to expand unhindered as the empire grew, the troops of each new acquisition being incorporated into the army. Perhaps the most famous element of the Persian forces was the king's infantry bodyguard, the 10,000-strong unit called the 'Immortals' or 'Apple Bearers'. This unit formed an elite bodyguard and also provided the kernel of the Persian infantry formation when the king, Darius III (r. 336–332 BC), was present.

The growing dominance of the northern Greek kingdom of Macedonia in Greek politics began in the 350s, but reached its culmination when Philip's Macedonian army defeated an alliance of Greek city-states led by Athens and Thebes at the battle of Chaeronea in 338 BC. Following that decisive victory, Philip was the master of Greece and soon turned his attention to the invasion of Persia, claiming that his intention was to avenge the desecration of Greek temples by the Persians in 480 BC. Philip was assassinated in 336 BC and this cut short invasion plans, but his son, Alexander, inherited the same desires; securing his position in Greece, Alexander led his father's army across the Hellespont and into Persian territory in 334 BC. What transpired in the decade that followed remains one of the most impressive military conquests in the history of warfare.


Black Sea
THRACE
The Granicus (334 BC)
Troy
Granicus
Zeleia
Sangarius
Ancyra
Gordion
Aegean Sea
ANATOLIA
GALATIA
Sardis
LYCIA
Thebes
Athens
Ephesus
Maeander
Kelainai
PHRYGIA
TAURUS MOUNTAINS
Amanic Gate
Cilician Gates
Miletus
Sagalassos
PAMPHYLIA
Sparta
Halicarnassus
Perge
Side
Tarsus
Issus (333 BC)
Sochoi (?)
Soloi
Mallus
Pinarus
Xanthos
Phaselis
CILICIA
Syrian Gates
MESOPOTAMIA
Gaugamela (331 BC)
Nineveh
Thapsacus (?)
Rhodes
Crete
SYRIA
Euphrates
Tigris
Cyprus
Mediterranean Sea
Sidon
Damascus
Tyre
Babylon
Gaza
EGYPT
Shrine of Ammon
N
0
200 miles
0
200km
Alexander's route
334 BC
333 BC
332 BC
331 BC

The Opposing Sides

ARMY COMPOSITION

Macedonian

The Macedonian army was made up of several troop types, mixing cavalry, several types of infantry and lightly armed troops. The wealthy noble class formed the army's cavalry, the *hetairoi*, an elite unit and an important part of the Macedonian hierarchy. Thus Macedon was already different to other Greek city-states which had focused their resources on heavy-infantry hoplites for several centuries. Even the aristocracies of city-states such as Sparta, Thebes and Athens fought as hoplite infantry. Macedon used hoplites, too, recruited as mercenaries and who served alongside the elite infantry battalions, the hypaspists, who may have been armed as hoplites. Macedonian armies also included specialist lightly armed missile troops such as Cretan archers and Agrianian and Thracian peltasts, as well as slingers and javelin-armed units. Macedonian cavalrymen were armed with the *xyston*, a long spear used for both thrusting and throwing, as well as javelins for throwing and the *kopis*, a longer sword for slashing; the *xiphos*, a thrusting sword, was also used. There were other varieties of cavalry available, both heavy and light. We know, for example, that the *sarissophoroi* or lancers were armed with the *sarissa*, a feared long spear wielded with both hands (such troops controlled their horses with their legs); the *prodromoi* cavalry also carried *sarissae*. There were also units of cavalry such as the Thessalians and Paeonians, who may have been armed in a manner according to their culture.

The warriors who remained the most recognizably Macedonian soldiers, however, were the phalangites. Each equipped with a *sarissa*, they made up the core of the Macedonian infantry. They were organized into six *taxeis* (battalions) of roughly 1,500 men each. This mode of fighting was probably an innovation introduced by Philip, although it is possible it had its origins with earlier Macedonian kings or in the reforms of the Athenian Iphicrates

in the early 4th century BC. Each *taxis* was divided into six *syntagmata* (sub-units), each *syntagma* fielding 256 men and usually 16 ranks deep. Thus each *taxis* was its own phalanx in miniature, with six sub-units. The 9,000 veteran phalangites that made up the core of the Macedonian army were probably the single most numerous troop type, but in order to operate effectively they relied upon the other elements of Alexander's forces to protect their flanks and to deliver the hammer blow for which the phalanx could be the anvil.

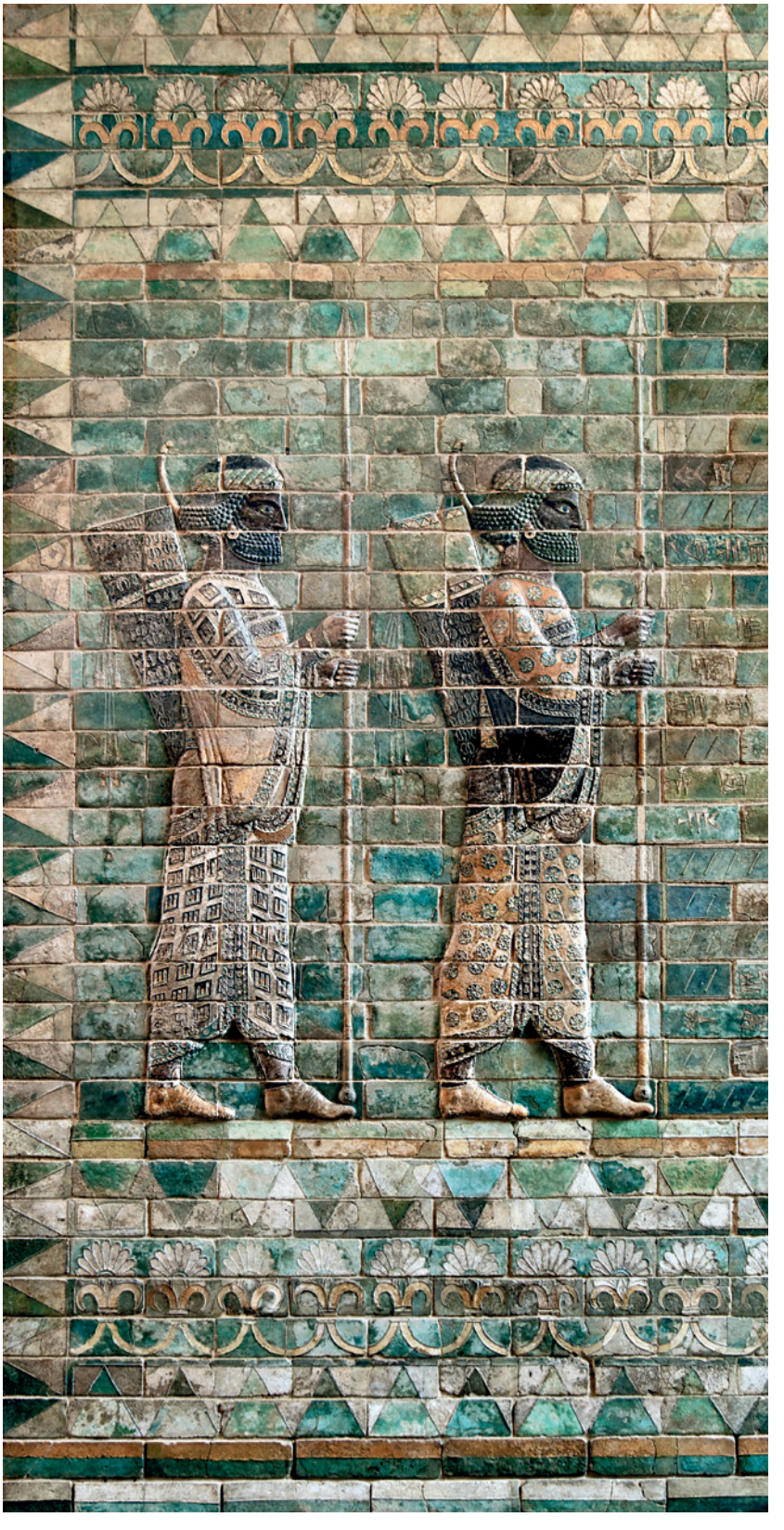
Plutarch (*Alexander* 15.1) provides a range for the size of Alexander's army: the lowest estimate puts its strength at 30,000 infantry and 4,000 cavalry and the highest at 43,000 infantry and 4,000 cavalry. Modern estimates give Alexander additional cavalry. Diodorus' even more in-depth breakdown (17.17.3–5) puts the numbers of Macedonian infantry at 12,000 and the total infantry contingent at 32,000, with 4,500 cavalry.

Persian

The army's core remained the Persian infantry, made up of levies of troops from the homelands of Persia and Media in Iran. Along with the same number of cavalry, the famous 10,000-strong Immortals probably also represented the permanent Persian army. The Persian Empire also employed Greek mercenary hoplites, warriors whose fighting style had inflicted such telling defeats on the Persian army in the 5th century BC, and were used by the Persians in increasing numbers in the 4th century BC. The Persians had a strong cavalry arm and many of the empire's commanders are mentioned as commanding cavalry contingents (Arrian 1.15.7–8; 1.16.3–4). Many of the Persian armies described to us in the sources include a large number of units named for the nationality of their contingents. It is most likely that these units, whether cavalry or infantry, fought in the style of their nations and there seems to have been little effort to make them conform to one style of fighting. In some cases these units are designated as cavalry or infantry (sometimes both); sometimes they are specified as archers

ABOVE LEFT
Alexander's lightly armed troops included peltasts, missile troops who usually carried several javelins (*palta*, sing. *palton*) and a small shield, somewhat confusingly also called a *pelte*, the same name as the Macedonian phalangite shield, although they were different in appearance. This Attic red-figure amphora of the 5th century BC depicts a Thracian peltast with a *pelte* shield. The appearance and fighting styles of the Thracians changed little between the 5th and 4th centuries BC. (Ashmolean Museum/Heritage Images/Getty Images)

ABOVE RIGHT
A funerary stele in the Louvre depicting a Macedonian cavalryman. He wears a typical Phrygian helmet and *linothorax* armour, items his infantry counterpart would also have worn. There is some debate among scholars regarding the Macedonian use of long thrusting spears from horseback. (Tangopaso/Wikimedia/Public Domain)



Persian Immortals from the Palace of Darius I (r. 522–486 BC) at Susa, now in the Louvre. Even though this frieze was created in the previous century, there is no evidence that Persian arms and armour changed to any great degree in the intervening period. It is known as the frieze of the archers, but each is armed with a spear. The name of the Immortals comes from Herodotus (7.41.1 and 7.83.1), writing about the Persian invasion of Greece in 480/479 BC. Herodotus tells us of the elite units in the Persian army accompanying the king; the members of these units had golden or silver pomegranates (or apples) on their spears (presumably to signify their rank). The historians of Alexander, however, do not mention the Immortals by name and some include no elite unit among the Persian infantry. We are only told of 30,000 mercenaries and two units of 60,000 Persian infantry – Cardaces – at the battle of Issus (Arrian 2.8.5–8). Even so, there is no reason to assume that the unit ceased to exist, and both Arrian (3.11.5; 3.13.1; 3.16.1) and Diodorus (17.59.3) mention an elite Persian unit at the battle of Gaugamela which they call the 'Apple Bearers'. This unit is reconcilable with the Immortals. We are not told the strength of this unit, but it is clear that its members form a royal guard, as they flee with Darius. (Jebulon/ Wikimedia/Public Domain)

FAR LEFT
Detail of another Immortal from Susa. Note the details of dress and footwear, and the combination of spear and bow. No swords are shown on these figures, and it is possible that the rectangular panels were armour rather than just decoration. Interestingly, the anecdotes in Aelian (*Varia Historia* 9.3) and Athenaeus (12.539.e–f) that were probably taken from Phylarchus' *Histories* provide the colours of Persian uniforms: purple and yellow for the Apple Bearers, flame-coloured, dark blue and scarlet for the archers, and purple for the Susians. Xenophon (*Cyropaedia* 8.3.3) mentions purple, sable, red and dark walnut-red. (Pierre André/Wikimedia/ CC BY-SA 4.0)

LEFT
More guards from Darius' palace at Persepolis. The reliefs of the guard seem to match those we find in Susa although details of uniform (especially the different types of helmets) and arms differ slightly. All are armed with spears and none wear any discernible armour or swords. When we look at the reliefs at Susa and Persepolis we see that the intricate patterns and colours of each figure may well have represented that unit's place of origin. The depictions of headdress and hairstyles may have aided in distinguishing units from one another. (Diego Delso, delso.photo/Wikimedia/CC-BY-SA 4.0)

or axe-men, but at other times they are simply named (Scythians, Indians or Bactrians, for instance). We also have some exotic inclusions, such as the scythed chariots and elephants included at Gaugamela.

The Persian troop numbers mentioned in the sources are very often excessively large, but this is an issue across all accounts of ancient battles. At the Granicus, the commanders were 14 named satraps (provincial governors) from the western provinces and other aristocrats but did not include the king himself. According to Arrian (1.14.4), the Persian army at the Granicus was made up of 20,000 cavalry and slightly fewer foreign mercenaries; Diodorus (17.19.4) gives a more likely higher total of 100,000 infantry (and has 10,000 cavalry). Even though the Greek mercenary commander Memnon of Rhodes is named (Arrian 1.12.9), not all of the 20,000 mercenaries in Persian service would have been Greek hoplites. Some would have been among the men supplied by each satrap, especially if they could not fulfil their obligations with levies from their province or holdings. The satraps at the Granicus and from other regions of Persia did not have many Persian troops, however. The commanders at the Granicus included several Persian nobles as well as Mithridates (Darius III's son-in-law), and so it is probable that they had some infantry levied in Persia. Levying such men en masse, however, was reserved for the king's army, for which the satraps of Persia and Media were required to levy troops.

When Darius' army came up against Alexander at Issus and Gaugamela, it came in full splendour. Arrian (2.8.8) and the Oxyrhynchus Historian (fragment 44) give the strength of Darius' army at Issus at 600,000 men, Justin (11.9.1) and Diodorus (17.31.1) only slightly less at 400,000 (that is just infantry; there were 100,000 cavalry too). There must have been a veteran core of experienced Persian troops, perhaps the 10,000 members of the Immortals. Other elements of the Persian levy from all over the empire would probably also have had some military experience.

Macedonian *Iochagos*

This file leader of the Elimiotis *taxis*, deployed on the right flank of the Macedonian line, is 22 years of age and clean-shaven, as per Alexander's advice not to give the enemy something to grab hold of (Polyaenus, *Strategemata* 4.3.2). A veteran, he is keen, and leads his file into battle. He is sweating as he carries 27kg of kit.

The Granicus, 334 BC

Weapons, dress and equipment

He carries a *sarissa* (**1**), 5.5m long, with a long point and weighted butt-spike. *Sarissae* were transported in halves and connected before battle via a coupling device (**2**), only one of which survives. This made transportation much easier and also meant that the shafts were stronger and bent less in combat. Replacement of broken halves was probably also easier; cornel wood was common in Greece and in coastal Anatolia but not available in the inland regions of the Persian Empire. Under his shield, on his left hip, he wears a *kopis* (**3**), its scabbard carried on a baldric which crosses diagonally over his right shoulder.

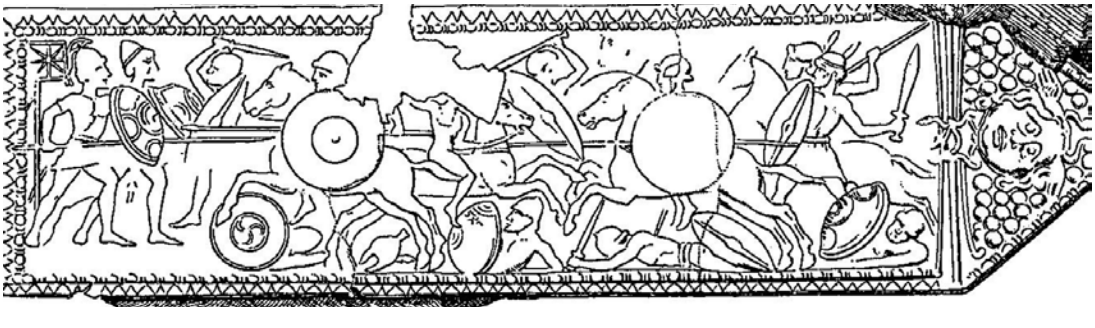
He wears a *linothorax* (linen armour; **4**) with *pteruges* ('feathers'; **5**) and under it an *exomis* (short tunic; **6**). Front ranks of phalangites were probably more heavily armoured than those in the middle of the file; we even have some evidence of half-cuirasses which only protected the front (Polyaenus 4.3.13). Phalangites had a variety of *kranos* (helmet) styles to choose from; the Thracian helmet without a plume shown here (**7**) seems to have been most common. This man wears bronze greaves (**8**) to protect his shins and his feet are clad in tough leather sandals (**9**). On his left forearm, held by a *porpax* ('handle'), is affixed his *pelte* (shield; **10**), 45cm in diameter; an *ochane* (neck strap; **11**) aids in holding the shield in place. The shield decoration shows the Macedonian eight-rayed star, the Macedonian royal symbol.

TACTICS

Macedonian

The mix of troop types fielded by the Macedonians seems to have permitted Alexander to employ combined-arms tactics where cavalry and infantry or cavalry and lightly armed troops coordinated their manoeuvres. In several of Alexander's battles, the cavalry, in combination with a single *taxis* of the Macedonian phalanx, the hypaspists and sometimes other units, would deliver the decisive blow, the hammer in 'hammer-and-anvil' tactics, with the anvil being the phalanx. The phalanx was precisely drilled to be able to adopt various formations and this gave it remarkable battlefield versatility. The phalanx is sometimes described as a 'pike-block' with the inference that it was unwieldy or immobile, but this was far from the case. It was indeed immovable when it needed to be, to hold its ground, but it was also a highly mobile and responsive formation when required. This manoeuvrability is attested to in the vast number of drills each phalanx would have been trained to carry out, contained in the *Tactica* manuals which describe the formations and manoeuvres of the phalanx. These manuals were first written either in Alexander's lifetime or in the years immediately following his death in 323 BC and at a time when the phalanx dominated the warfare of his successors.

The origins of the reforms to the Macedonian military system are complex and still cause divisive arguments. The most common idea is that Philip copied or adapted the reforms from the Thebans when he was a hostage in the city of Thebes during the 360s, during the period of Theban domination (after they had smashed the Spartans at the battle of Leuctra in 371 BC). Philip was a teenager during this period, and so it is hard to establish with certainty just how much he was influenced by all this reform. There is also no evidence that the Thebans had adopted spears of greater length than usual. What the Thebans had done, however, at Leuctra and elsewhere, was adopt a formation up to 50 men deep (the mass this provided was what had allowed them to succeed so spectacularly at Leuctra). Another part of the Theban success at Leuctra and at the battle of Mantinea in 362 BC was the idea of drawing up their forces in echelon, and advancing to battle on an oblique front. This was something that the design of the Macedonian phalanx allowed for far more than did the traditional hoplite phalanx (and something which, as we shall see, which Alexander executed at



This sketch of a bronze plaque from Pergamon, probably depicting a much later battle (Magnesia in 190 BC) is one of the very few depictions of Macedonian or Hellenistic phalangites in combat. Note also the flag at the extreme left, which may represent a unit flag. Approximately the front five ranks of the phalanx extended their *sarissa* points horizontally beyond the front rank as the offensive front of the phalanx. Behind them the remaining ranks raised their *sarissae* at a roughly 45-degree angle and the rearmost ranks held them vertically, in readiness (and possibly to pass forward when forward ranks' shafts broke in combat). The rear ranks also added mass to the phalanx's advance. This formation has often been described as a 'hedgehog' or 'porcupine' of spears and it has always been assumed that the raised *sarissae* of the rear ranks disrupted enemy missile fire. The low casualty numbers in the phalanx reported in all of the accounts of Alexander's battles may reveal that the usefulness of this aspect of the phalanx has been underestimated. (Alexander Conze/Wikimedia/Public Domain)

Housed in the Istanbul Archaeological Museum, the Alexander Sarcophagus, from the acropolis of Sidon, Lebanon, offers remarkable details of both Macedonian and Persian dress. Even when allowing for artistic licence, it provides the historian with much to ponder. This is a reconstruction of how the colours on the Alexander Sarcophagus may have appeared originally. Once you have got past the vivid hues, they do tally with what we know from written and other archaeological sources. (ANA BELÉN CANTERO PAZ/ Wikimedia/CC BY 2.0)

the Granicus, Issus and Gaugamela). The idea (and effectiveness) of a deep formation and one which could be drawn up in echelon may have struck Philip while he was held in Thebes.

It is debated whether the Athenian Iphicrates' reforms were enacted among light infantry/peltasts, or among the heavy, hoplite infantry. Diodorus specifically states (15.44.2–3) that Iphicrates' reforms were applied to the hoplites. Interestingly, both the Theban and Iphicratean reforms resulted in Athenian successes against Spartan hoplites and were, perhaps, designed with that foe in mind. To the Greeks, the Spartans remained the most powerful hoplite force in Greece until their defeat at Leuctra; they never recovered from the loss of manpower they suffered during that battle. Recent scholarship has explored the idea that the Spartans were not invincible, but for contemporary Greeks in the 5th and 4th centuries BC, the Spartans were the superior hoplite state even after Sparta suffered defeat. It was the loss of manpower at Leuctra which rendered Sparta impotent. In many ways the humbling of Sparta, and the success of Theban tactics in defeating the Spartans, facilitated the rise of the Macedonian phalanx.

There has been a tendency recently to divest Philip of responsibility for the reforms to the Macedonian army despite both Diodorus (16.1.3–6) and Arrian (7.9.2) giving him credit, as well as many modern military historians. Philip's ambition to make Macedon the dominant force in Greece may help explain his adoption of two reforms (the length of the spear and the depth of the formation) which would help to ensure his victory over traditional hoplite forces. His vengeful destruction of the Thebans and their elite Sacred Band at the battle of Chaeronea in 338 BC might also be explained in this way (the pupil defeating the master). Whatever the source of his inspiration, it seems clear that Philip created an unprecedentedly powerful Macedonian military machine which was different from anything that came before it. No other reformer combined the length of spear with a massed and deep formation.

The Persians had been defeated by traditional hoplites using traditional tactics and weapons in the 5th century BC and if Philip's phalangites could defeat such hoplites then, surely, his formations could defeat the enemies the hoplites had bested. This idea may have provided the germ from which Philip's (and Alexander's) plans for the conquest of Persia grew.

Persian *dathapatis*

This 'commander of ten' from an *arstibara* unit from Susa is 22 years old. A veteran of two campaigns, he has reached the first rank of promotion in the Persian command structure. He waits, fresh, at the battle of the Granicus, eager because of his promotion to impress his *satapatis* ('commander of a hundred').

The Granicus, 334 BC

Weapons, dress and equipment

He is armed with a spear (**1**) approximately 6 cubits (2.5m) in length; the Persian spear was generally shorter than the typical hoplite spear, also of 6 cubits, but the archaeological depictions of troops from Susa show longer spears than those from Persepolis depicting Median and Persian troops. He wears an *akinaka* (**2**) on his right hip, on a belt cinched at his waist.

He wears trousers (**3**) and a tunic (**4**) decorated with geometric patterns to signify his Susian origins. The various *hazaraba* of the Persian army seem to have been clothed in distinctive colours which may have differentiated units or indicated their origins. We have descriptions of purple and yellow for the Apple Bearers, flame-coloured, dark blue and scarlet for the archers, and purple for Susians. We also have descriptions of purple, sable, red and dark walnut-red. These colours are borne out by the archaeological record.

This man's headdress (**5**) is typical and his hair is also dressed. Helmets and headdress or hairstyle may also have differentiated units; there are several distinct types of helmet depicted. He wears soft leather shoes (**6**) and carries a rectangular wicker shield (**7**) which reaches from ankle to neck and is approximately 90cm wide. A further distinguishing feature may have been the geometric patterns on clothing and shields we know from various depictions in art.

Persian

We are not so lucky as to have treatises similar to the *Tactica* for the Persian army. There is some evidence of Persian tactics within our sources, but since they were writing in Greek or Latin, they may simply have used terminology with which they were familiar. For example, at the battle of the Granicus we find Mithridates charging with a cavalry wedge (Arrian 1.15.7). The term used by Arrian, *embolon*, is a Greek one, but may reflect Persian practice.

Persian infantry were predominantly divided into units of *arstibara* (spearbearers) and archers, although in the archaeological record we see spearmen who also each have a bow and quiver. Shields are much less common in artistic depictions and men could not wield shields and bows at the same time. It is possible that only the front man in a *dathabam* of ten men carried a shield, while the remainder used their bows or spears as required. The *arstibara* were, however, a specific unit. A single line of shields behind which archers fired might help to explain the superiority of the Macedonian phalanx against Persian formations and also the disproportionately high Persian casualty numbers in battles against the phalanx. For the most part the Persians seem to have relied upon missile weapons – archery and javelins, used both on foot and from horseback – to try to break their enemies. Where we have the information (such as for Gaugamela) we also know whether each national contingent was made up of archers or of other types of troops. It is likely that in battle, the Immortals stood in front of the king (and not necessarily in the centre of the line as it seems that Darius actually favoured a position on the left wing). We are probably safe in assuming that such a polyglot force with different fighting styles characterized the Persian armies at Issus and the Granicus. An author such as Diodorus can imply variety in the Persian ranks without giving much detail, mentioning how the commanders of the Persian army at the Granicus brought in forces from far and wide.

Unfortunately, sources such as Arrian usually provide very little detail about the units attacked by Alexander's army. For the most part Alexander's opponents are simply called infantry, cavalry or mercenaries. The exception to this is in Arrian's account of Gaugamela, in which he reports (3.11.3–7) that he used a precise Persian order of battle found in one of his sources, Aristobulus.

Conversely, Arrian tells us (1.14.4) that at the Granicus the Persians had 20,000 cavalry drawn up in front of the infantry, who numbered slightly less. Diodorus provides a little more detail – like Curtius Rufus, he probably used Cleitarchus as a source – but his version of events at the Granicus has not been favoured. Diodorus claims (17.19.4–5) there were 10,000 cavalry and 100,000 infantry; he names the cavalry contingents, and notes that the infantry, though strong in number, remained behind the 10,000 cavalry, the latter force being deemed strong enough in number to defeat the Macedonians. Diodorus has Memnon of Rhodes commanding a cavalry contingent on the left flank. The idea of having the cavalry in the front rank is an interesting one. At the Granicus the Persians certainly outnumbered the Macedonians in cavalry, and so probably expected to be able to win with that arm. At Issus, according to Curtius Rufus (3.11.1), Darius, aware of the

strength of the Macedonian phalanx, decided to focus on a battle between the rival cavalry forces.

According to Arrian (2.8.5–10), at Issus the Persians employed a screen of 30,000 cavalry and 20,000 lightly armed troops so that the Persian infantry could deploy in two 60,000-man blocks, one on either side of a contingent of 30,000 Greek mercenaries. Arrian tells us (2.8.8) that 20,000 men were posted on the mountainous terrain threatening Alexander's right flank, and that the deployment in depth of the 'national regiments' which made up both light and heavy infantry rendered them ineffective behind the Greek mercenaries and Persian infantry.

At Gaugamela, for which Arrian follows a precise plan from Aristobulus, he tells us (3.8.3–6; 3.11.3–7) of various different national contingents and their fighting styles. According to this detailed listing, Darius had 40,000 cavalry and one million infantry (not to mention 200 scythed chariots and 15 elephants). The sheer variety of Darius' contingents is dazzling. It is worth noting, however, that several contingents probably fought in the style of the Persian infantry. Arrian records (3.8.4–5) Albanians, Cadusians and Sacesinians being aligned with Medes or Persians and Carians and Sittacenians alongside Babylonians, and it stands to reason that these troops fought in the same way. Other named contingents may also have fought in a similar fashion to the Persian infantry. Our other sources for these battles make it far from straightforward to piece together Darius' deployment, however.

ABOVE LEFT
A Persian archer from the Alexander Sarcophagus. The weapons, which would have been made of wood and metal, have all been lost. Clear traces of paint on the sarcophagus allow historians to reconstruct what some of the uniforms may have looked like originally. (G.dallorto/Wikimedia/CC BY-SA 2.5)

ABOVE RIGHT
A detail from the Alexander Sarcophagus showing a Macedonian stabbing a fleeing Persian infantryman. The Macedonians are nearly all depicted heroically (that is, naked); the figure at left is marked out as Macedonian by the Phrygian helmet (note the cheek pieces) and cloak. (G.dallorto/Wikimedia/CC BY-SA 2.5 IT)

RECRUITMENT AND MOTIVATION

Macedonian

Each of the six *taxeis* of the phalanx was levied in a different part of Macedon, which gave the personnel of each *taxis* cohesion. Each was referred to by its territorial name, e.g. the *taxis* of Elimiotis, the *taxis* of

the Orestae and the Lyncestae, and the *taxis* of Stymphaeans. Macedonia did not contain large numbers of cities and its peasants did not farm; they generally tended their flocks and herds in the harsh mountain terrain, meaning they were hardy and not tied to the land in the ways that other Greek farmers were in the south. These circumstances meant that it was much easier to recruit from the shepherds of the mountains and transform them into a full-time army which was more professional than the forces fielded by the Greeks, making it possible for Alexander to keep his forces in the field for extended periods.

The army with which Alexander invaded the Persian Empire was already composed of veterans. It had served Philip and fought at Chaeronea in 338 BC as well as fighting in Alexander's campaigns in Thrace and Illyria and against Thebes in 336 BC and 335 BC. Alexander's forces therefore embarked for Asia confident in their abilities and tactics. In the Macedonians' first encounter with the Persians at the Granicus River and with each successive victory – especially at Issus and Gaugamela where they faced the might of the Persian king's army – their confidence would grow until the *esprit de corps* of the 'Macedonian phalanx', the *Pezhertarioi*, was unparalleled. The army was highly motivated from the outset of Alexander's invasion and they (quite remarkably) remained so until 326 BC. New recruits (*Epigonoi*) arrived from Macedon to fill the ranks, but in 324 BC, Alexander had an additional 30,000 recruits from his new cities in Asia – all armed and trained in the Macedonian manner – brought to him at Susa. The members of the phalanx were angry that they were being replaced (Arrian 7.6.1–2; 7.8.2). A further 20,000 recruits, Persians this time, arrived in 323 BC (Arrian 7.23.1–4).

Persian

Just like the Macedonian army, the core of the Persian forces consisted of infantry, drawn either from the levies of the local satraps or from the Persian homelands themselves. Each Persian noble was obligated to the king and the population of the empire's provinces was obligated to a particular noble. Thus the king, or a noble, could call upon men to serve him militarily as their obligations required. When Darius mustered his army in Babylon in preparation for the battle of Issus, the satraps and others in turn gathered their levies. Friends and family members Darius considered suitable were given commands, while others were ordered to accompany him into battle in the role of his personal staff (Diodorus 17.31.1).

It is difficult to assess the motivation of the Persian infantrymen. Given the defeats inflicted by Alexander, it would be easy to assume that, as levies, they were not motivated to fight. There are examples of determined fighting by Persian infantry, however, which belie the view that their motivation was inferior to that of their Macedonian opponents. Darius' commanders would have wanted to provide the king with good service and no doubt had sound men in their individual levies. Those men too would have wanted, to some degree, to serve their lords well. We are told that the Immortals as a unit always had a full complement of 10,000 men and that any casualties were replaced from the ranks of the rest of the Persian army on a merit basis.

An Attic red-figure plate showing a Persian archer on horseback from the later 6th century BC. As can be seen, the design and decoration of the Persian's clothing look much as they would have in the time of Alexander. (Ashmolean Museum/Heritage Images/Getty Images)

It was therefore a great honour to be selected for promotion to this elite unit. This movement of personnel between units suggests that there was the opportunity for promotion and advancement within the Persian army itself, and so we can say that there were highly motivated cadres throughout the Persian forces.

ORGANIZATION AND COMMAND

Macedonian

The Macedonian phalanx was organized by files (sing. *dekas* or *lochos*), each of 16 men. This could be halved to eight or even doubled to 32 as and when needed. Even greater depths are recorded, such as 120 men (Arrian 1.6.1). It would seem that on campaign, tents were organized by half-file and contained eight men. Each file was commanded by a file leader, or *lochagos* (there are several alternative names for each officer, which may reflect the multi-period nature of the *Tactica*). The file leaders served in the front rank; the second-in-command was the file closer, or *ouragos*, who was the 16th

man. There were also half-file leaders and half-file closers. Above the rank of file leader there were two-file leaders (who commanded 32 men), and four-file leaders (who commanded a *tetrarchy* of 64 men). A *taxiarch* commanded two *tetrarchies* – that is, eight files of 128 men – and two *tetrarchies* made up a *syntagma* of 16 files (256 men) commanded by a *syntagmatarch*. The *syntagma* was the basic tactical unit of the phalanx, with two *syntagmata* making up a *pentakosiarchy* (512 men), two *pentakosiarchies* making up a *chiliarchy* (1,024 men), and so on. One of the criticisms of the *Tactica* is just how mathematical they are (a 'phalanx' equalling 16,384 men in 1,024 files, all divisible by 16). For Alexander's phalanx of six *taxeis*, which is usually thought to have had an approximate strength of 9,000–10,000 men, each *taxis* probably contained six *syntagmata* of 256 men each (giving each *taxis* 1,536 men). The issue with numbers in our ancient sources is constant – they are either too vague or too specific. In battle, casualties, illness and other forms of absence would have meant that the army in the field never had a full 'mathematical' complement, but could have continued to operate effectively even if its strength was depleted.

The command of Alexander's six *taxeis* seems to have fallen to members of the aristocracy from the same region in which the *taxis* was recruited. For command at lower levels, the *Tactica* call for a meritocracy in which the file leader and file closer were qualitatively superior to others in the file (Aelian, *Tactica* 5.4). Given that command could be of as few as four men within the phalanx, there were probably ample opportunities for promotion. Individual men below the commander of a unit are very seldom named in our sources. Arrian and our other sources do give quite precise details on the drawing up of Alexander's line for battle, giving the place of each battalion of the phalanx as well as other units. Thus at the Granicus we know from Arrian (1.14.2–3) that the phalanx was drawn up (right to left) with Perdiccas' *taxis*, then those of Coenus, Amyntas, Philip, Meleager and Craterus (who is strangely named twice and in two locations, a mistake Arrian did not correct although Craterus' position on the left seems secure). The precise position of each *taxis* in the battle line could be organized on a daily rotation, Arrian tells us (1.28.3). Nevertheless, the order of the *taxeis* in the battle line seem to be very similar for each battle and not dependent on any kind of daily rotation. Thus at Issus the order of *taxeis* right to left was Coenus, Perdiccas, Meleager, Ptolemy and Amyntas (Arrian 2.8.3–4). Craterus' *taxis* is not mentioned by Arrian, but we get the detail from Curtius (3.9.8) that Craterus was in command of the left wing of infantry and his *taxis* was on the left at both Granicus and Gaugamela. Thus it is most likely that his *taxis* was on the left at Issus also. At Gaugamela the order was Coenus, Perdiccas, Meleager, Polyperchon, Simmias (Amyntas' brother) and Craterus (Arrian 3.11.9–10). In all three battles the right flank of the Macedonian phalanx *taxeis* was protected by the hypaspists and/or the Macedonian Royal Guard. Arrian's point about daily rotation was perhaps intended to avoid any issues within the army of arguments about precedence or preferential treatment of individual *taxeis*. In the traditional Greek hoplite phalanx the rightmost position was the most prestigious, but there is no evidence to suggest that this remained so in Macedonian armies. The Thebans had placed their elite troops on the left flank and the Macedonian Royal Guard and hypaspists, technically, were the

rightmost of the infantry, so it is possible that the phalanx had left such ideas of precedence behind.

Diodorus' account of Gaugamela (17.57.2–3) includes details not only of the battle line, but also of the territorial names of each of the divisions; so we know, for instance, that one *taxis* was from the region of Elimiotis, another from the area of Orestae and Lyncestae, and another consisted of the people called Stymphaeans.

Persian

Some documents which discuss Persian organization have survived, although often they are not specific for the time of Darius III, but rather for earlier periods of the Achaemenid Persian Empire. That said, there is no reason to assume that there were any radical changes in the organization of the Persian military machine across the period. In this regard the source which is closest in date and which provides the most information on the Persian army is in fact Xenophon (in his *Cyropaedia* and *Anabasis*), but we must also use earlier sources such as Herodotus in some cases. When we do have evidence from the time of Alexander, however, the continuity of Persian military organization is striking.

The *spada* was organized into *hazaraba* of 1,000 men each, with each *hazarabam*, led by a *hazarapatis* ('commander of a thousand'), being further divided into ten *sataba*. Each s*atabam*, headed by a *satapatis* ('commander of a hundred'), was in turn divided into ten *dathaba*, each *dathabam* being led by a *dathapatis* ('commander of ten'). There is no reason to think that

ABOVE LEFT
Bronze Macedonian Phrygian-style helmet in the National Museum of History of Moldova, Chisinau, Moldova. This example lacks cheek pieces but matches sculptural depictions. (CristianChirita/Wikimedia/CC BY-SA 3.0)

ABOVE RIGHT
Found in the village of Pletena in south-western Bulgaria, this Thracian helmet with cheek pieces is now in the National History Museum, Sofia. Note the *sarissa* head behind it. Alexander's Greek mercenary hoplites were armed with the *dory*, the traditional hoplite spear, plus the *xiphos* (a thrusting sword) or the *kopis* (a longer sword for slashing). Carrying the *aspis*, a round shield, and wearing helmet, greaves and cuirass, the hoplite would have been more heavily armoured than the phalangite. (Ann Wuyts/Wikimedia/CC BY 2.0)

units which did not employ a strictly Persian fighting style were not also organized into such divisions. Certainly, other contingents are named in corps of thousands in the sources, and it may have been a requirement that Persian senior commanders provided so many thousands of troops to fulfil their obligations (such as the 14 named commanders at the Granicus).

It may, therefore, be possible to suggest a file depth of ten men in Persian units. Xenophon (*Cyropaedia* 2.1.22–26) provides Persian ranks, although in their Greek equivalents, such as a *chiliarch* for the 'commander of a thousand'. (Confusingly, a *chiliarch* commanded 1,024 men in Macedonian armies, a situation not necessarily helped by modern translations which use terms such as 'battalion',' brigade' and 'division'.) Xenophon also mentions a commander of five and one of 50. Like the command for lines in the Macedonian phalanx, there may have been other positions too, such as that which commanded the rear of the file, the *pascadathapatis*, or rear *dathapatis*, similar to the file closer of the Macedonian phalanx.

Ten *hazaraba* formed a 10,000-man unit, the *baivarabam* (*myriad* in Greek), commanded by a *baivarapatis*. Even in the basic Persian formation Arrian gives us for Issus (2.8.5–8), it is possible to see that each 60,000-man 'wing' of the Persian infantry consisted of 60 *hazaraba* or six *baivaraba*. Again, the exact numerical symmetry of such numbers would not have been reflected in reality and we do have records from Persepolis which show that a s*atabam* could fall below half-strength and consequently there would, presumably, be fewer *dathaba* in each unit.

There was, of course, one famous exception to units which would operate below full strength: the *baivarabam* of the 10,000 Immortals. The golden-pomegranate units mentioned by Herodotus (7.40.1–41.2) each contained 1,000 men (equating to a *hazarabam*) and there were 9,000 men with silver pomegranates (so presumably nine *hazaraba*). Neither Arrian nor Diodorus provides a strength for this unit of Apple Bearers, but it could be a *hazarabam* or *baivarabam*. We can be relatively sure that the pomegranates of Herodotus and the apples of the Alexander historians are the same device, and when we look at the reliefs from Persepolis and Susa, the reason for the confusion as to what fruit these may depict becomes clear.

Two relatively obscure sources may help, however. Following Heracleides of Cumae, Athenaeus notes (*Deipnosophistae* 12.514b) that there were 1,000 Apple Bearers, all of whom were Persian by birth and selected from the 10,000-strong Immortals. Their name derived from the apple decoration that adorned their spears, presumably as an indicator of rank. Heracleides was probably writing around 350 BC, but there is reason to accept his information for the time of Alexander. Polyaenus of Macedon records the proceedings Alexander held for court cases among the Persians (*Strategemata* 3.24); in attendance were 500 Persian Apple Bearers and 500 Macedonian Silver Shields, the equal split between them, and their organization into a *hazarabam* of 1,000 men, intended to show Alexander's status as king of both the Macedonians and the Persians. Also outside the royal tent were 10,000 handsome and tall Persian infantrymen. With slight variations, this description of their physical prowess occurs in Aelian (*Varia Historia* 9.3) and Athenaeus (12.539.e–f). The source of this description is probably book 23 of Phylarchus' *Histories*, written in the 3rd century BC. All of this

From the Hall of One Hundred Columns at Persepolis, here we have Darius III surrounded by guards. In this column, however, different arms and armour are depicted. (Bernard Gagnon/Wikimedia/ CC BY-SA 4.0)

This detail from the Alexander Sarcophagus shows some variation in shield design for the Persian infantry. (Dave Proffer/Wikimedia/CC BY 2.0)

is enough to suggest that Darius' army probably did have an elite unit of 10,000 infantry (a *baivarabam*) and that from it 1,000 men were drawn to be the *hazarabam* bodyguard of the king. The continuity of the description of the Persian elite infantry between Herodotus (writing in the 450s and 440s, 120 years earlier) and the later sources means we can use such details with care.

EQUIPMENT AND TRAINING

Macedonian

The main armament and distinguishing feature of the Macedonian phalangite was the *sarissa*, a long spear weighing approximately 7kg and made of cornel wood, with a long-bladed point and a weighted butt-spike. The *sarissa* was described as being between 10 cubits or 4.5m (Asclepiodotus, *Tactica* 5.1) and 16 cubits or 7.3m (Polyaenus, *Strategemata* 2.29.2) in length. (A cubit itself varied from around 44cm to 53cm.) The source closest in date to Alexander (Theophrastus, *Historia Plantarum* 3.12.2) states that the *sarissa* was 12 cubits or 5.5m long.

By contrast, the *dory*, the traditional hoplite spear, was on average about 6 cubits (2.5m) in length. It was still in use in Alexander and Darius' armies, with the Greek mercenaries fighting for the Persians and Alexander's own mercenary hoplites and perhaps his hypaspists. The spear is said to have been doubled in length by Iphicrates as one of several reforms of the Athenian infantry, including the introduction of the Thracian *pelte* shield after which the lightly armed peltasts were universally named. It is unclear, however, whether the spear length was doubled or increased by half. If we accept Cornelius Nepos' doubling of length to 12 cubits, we have a spear the same length as the contemporary account of Alexander's *sarissae*.

The training, tactics and manoeuvres of the phalanx are outlined to us in the surviving *Tactica*, manuals of drawing up, equipping and training Macedonian or Hellenistic phalanxes. The remarkable thing about the three

surviving copies of these manuals (many others were also written, but are lost) is that all were written in the Roman period, long after the Macedonian phalanx had been superseded by the Roman legion, but it is entirely probable that the *Tactica* can be used as practical handbooks which offer a great deal of information about our historical narratives.

The three surviving *Tactica* manuals are by Asclepiodotus (writing in around 50 BC), Aelian (writing for Trajan's Parthian War in AD 113) and Arrian, the best and most famous Alexander historian, who wrote his *Tactica* in AD 136/37, possibly after he had used similar tactics against the Alans in AD 135. All three treatises provide a reliable insight into the organization, training and equipping of the phalanx, even though they do present information from all ages when the phalanx was in operation (thus they provide various names for the units and their commanders).

The *Epigonoi* that joined the Macedonian army in 324 BC had been recruited in 327 BC; the three years of training gives some suggestion of how long it took to train as a fully fledged phalangite, capable of performing all the battlefield drill which would be required. When we read the accounts of Alexander's battles it is actually quite simple to match the manoeuvres prescribed in the *Tactica* for various situations to what we are told happened on the battlefield. At the very start of the *Anabasis*, Arrian records that Alexander arrayed his phalanx and got its members to advance quickly and wheel, then form a wedge (1.6.1–2). This had the desired effect of dissuading the enemy from engaging and serves to illustrate that the drill of Alexander's phalanx was honed to a very impressive degree from the outset of his invasion.

Persian

Each infantryman was armed with either a spear and bow or a spear and shield. The 10,000 Immortals were armed with spears and were thus a unit of *arstibara* (spearbearers), although they are depicted at Persepolis with bows and quivers too. We do not know if each unit had designated spearmen and archers, or whether individual soldiers switched between the two roles as required, but the dual function seems more likely. The 'archer pair' (one man with a bow and another with a shield) is also a possibility. The Persian warrior also wore a sword, usually on his right hip, on a waist belt. Surviving depictions show the *akinaka*, a dagger or short sword, in a wooden scabbard; the swords which survive in the archaeological record reveal that they remained of the same design for several centuries. We also know of units armed with axes. Depictions show a variety of bows, as well as variations in the style of quivers and bow cases, and even the manner in which these were carried. Composite, recurve and asymmetrical bows are depicted in art, as well as more simple self-bows. It is probable that the various cultures from which the Persian army were raised kept the bow type typical of their nationality.

We do not know what proportion of men carried shields in a unit, but the archaeological record identifies various types, including large rectangular wicker shields, rectangular shields with curved tops, circular hoplite *aspis* shields, and round or oval shields with scallops cut into the sides.

RIGHT
A detail from the Alexander Sarcophagus showing a Macedonian in *linothorax* armour; note the shield, scabbard and traces of a baldric. The Persians around him are dressed in trousers and tunics; none has a sword, but several have shields and bows. (Soerfm/Wikimedia/ Public Domain)

FAR RIGHT
The gold rings decorating the ears of these Persian soldiers can be made out clearly. We do not know if decoration was banned in other units; our sources only tell us that the guards units were highly decorated. (Diego Delso, delso.photo/Wikimedia/ CC BY-SA 4.0)

Many of the depictions of Persian soldiers do not show armour, only trousers, tunics and robes, but Persian armour encompassed padded tunics, armoured plates and armour which copied the *linothorax* armour of the Greeks. It is possible that some geometric decoration on the depictions of Persian trousers and tunics was intended to represent armour. The various *hazaraba* in the Persian army seem to have been clothed in distinctive colours; among those identified are purple and yellow (Apple Bearers), flame, dark blue and scarlet (archers) and purple (Susians). Other colours identified include sable, red and dark walnut-red.

The sources reveal that the Persian cavalry also consisted of spearmen, javelin-men and archers. The Parthian shot – involving the warrior turning in the saddle and shooting behind him – was already in use in the period of Alexander's conquests. The sources also feature more heavily armed cavalry; two-handed lances were used and some cavalry had shields, usually round, although smaller square wicker shields are also known.

A detail from the Alexander Sarcophagus showing Alexander (in his lion-head helmet) engaging a Persian cavalryman and infantryman. Note that the Persians are dressed the same as one another in tunic and trousers. As with the details on the Alexander Mosaic, it seems that the artist deliberately mixed infantry and cavalry figures (and this coincides with the historical narratives we possess). (Ronald Slabke/Wikimedia/CC BY-SA 3.0)

The Granicus

334 BC

BACKGROUND TO BATTLE

Alexander crossed the Hellespont into Persia in the spring of 334 BC. He had already sent an advance guard across two years earlier to establish a foothold on the Asian continent under his father's reliable commander Parmenion. Parmenion was stalwart and determined, but he lacked imagination and flair. Alexander's advance guard did its job, although Parmenion encountered expert and determined resistance from Memnon of Rhodes, a Greek mercenary commander in the employ of the Persians.

Alexander entered Persia with an army of veterans rather than young, inexperienced men. They had campaigned in Greece and further afield under Alexander's father Philip and they had fought in Thrace and Greece under Alexander himself. Alexander had spent the previous two years ensuring that Greece and Thrace were pliant and loyal. This had involved the harsh step of razing the city of Thebes to the ground for daring to contemplate throwing off the Macedonian yoke. It was a highly effective strategy, and ensured that Greece was kept in line for the most part during Alexander's ten-year absence during the conquest of Persia.

It might be argued that Philip had honed his army, with its anvil and hammer of phalanx and elite cavalry, with Persian conquest in mind. Philip had devised a style of warfare which could defeat the hoplite phalanx; a style that had itself defeated the Persians. What is more, the satraps of Persia (and even Persia's kings) had begun using Greek mercenary hoplite forces in large numbers in their armies. By developing a formation which could effectively deal with both, Philip had tipped the balance in his favour. Alexander therefore had a finely tuned and well-drilled phalanx in addition to a combination of other units such as the hypaspists, his own

mercenary Greek hoplites and specialized lightly armed troops (Agrianian and Thracian peltasts who were mostly armed with javelins, Cretan archers and others) amounting to 30,000–43,000 men. Leading the elite cavalry arm made up of Macedon's young nobles was Alexander himself with 1,800 Macedonian cavalry as well as cavalry contingents from Thessaly and other parts of Greece.

Alexander's arrival was not a surprise to the Persian satraps of western Anatolia. Alexander's father Philip had made his intention of invading Persia plain and his pretext for undertaking it was to punish Persia for desecrating Greek temples as long ago as 480–479 BC. Soon after Philip's assassination in 336 BC, Alexander set about putting his father's plans in place. Thebes had a longstanding reputation for colluding with the Persians (a practice known as medism), and it could be argued that Alexander's extreme punishment of Thebes was partly meted out for this collusion. The punishment of Thebes should also have sent a clear message to the Persian satraps if not to the Persian king himself; but it was a message that was largely ignored in Persia. The satraps may have raised their levies, but they did not go on the offensive or try to expel Parmenion and his force with any energy. It is possible that the satraps may have thought that Parmenion's expedition was going to be the extent of Macedonian incursions, but they did little to stop Parmenion save employing Memnon of Rhodes to thwart him. Parmenion had been Philip's second-in-command, leading the left wing of the Macedonian army (a role he would fulfil for Alexander at the Granicus, Issus and Gaugamela) while his king led the right. Despite his experience, however, Parmenion showed he was no Alexander and awaited his king's arrival.

Strangely, after such inaction against Parmenion, the satraps wasted no time in preparing to meet Alexander in battle once he and his army had crossed the Hellespont. They summoned their levies and met for a council of war at the city of Zeleia (Arrian 1.12.8). We are given the names of 14 commanders among the Persians, ranging from the satraps immediately affected or threatened to wealthy Persian landowners, as well as Memnon of Rhodes. Alexander moved quickly, and Arrian records (2.11.3–5) all the places he reached and rivers he crossed within 20 days of setting out. Even if he was determined to wreak havoc on the Persians (and he was clearly confident in his ability to do so), Alexander had other agendas too. He travelled to Troy,

The pediment of the Panther hunt scene from the Alexander Sarcophagus. The figures on the right depict a Persian spearman attacking a crouching phalangite. The Persian is wearing a cuirass and carries a round shield. He may be a member of the Cardaces (Persian infantryman equipped as hoplites). On the left a crouching Persian wearing tunic and trousers is being attacked by a Macedonian infantryman and a cavalryman. (DEA PICTURE LIBRARY/De Agostini/Getty Images)

Although this image shows Median court dignitaries, note the sword worn on the right hip by the second figure from the right; he also wears a bow and quiver on his left hip. (Ziegler175/Wikimedia/CC0 1.0)

where he is reputed to have placed a wreath on the tomb of Achilles. From there he continued his rapid march.

According to Arrian (1.12.9), Memnon counselled his employers to avoid facing the new Macedonian king in open battle because his army included a greater force of infantry. Memnon and his brother had been exiles in Pella, capital of Macedon, in the 350s and 340s, and had seen Alexander as a young teen. We can only speculate about the insights into Alexander's character and potential that Memnon's stay in Pella may have afforded him. Memnon advocated the employment of a scorched-earth policy ahead of Alexander's troops, denying the invader fodder by burning crops. He warned that the 14 assembled Persian leaders, including himself, could not assemble the numbers of troops necessary to outnumber Alexander's infantry. Memnon's advice was ignored, however, and the Persian commanders sided with Arsites, satrap of Hellespontine Phrygia, in whose territory Alexander's force was present at this time. Alexander was marching along the northern coast of Anatolia and advancing towards the Granicus River. Arrian tells us (1.14.4) that the Persian army was made up of 20,000 cavalry and almost the same number of foreign mercenaries.

The Persians advanced from Zeleia and took up a defensive position on the far side of the Granicus. Plutarch (*Alexander* 16.3) refers to unnamed Macedonian officers expressing reticence about attacking in the month of Daesius (our May–June), a month during which Macedonian kings traditionally did not take the field; but surely Alexander intended to ignore such a convention by invading Asia in precisely that month. Plutarch has Parmenion express concern about attacking at too late an hour, instead advising that they camp for the night where they stood and attack at dawn. According to Arrian (1.13.6), Alexander rejected Parmenion's advice and began to deploy, saying that he would be ashamed if, having crossed into Asia, he was to be stopped by a little stream.

The Granicus, 334 BC

MAP KEY

1 The Macedonian army crosses the Granicus early in the day and deploys on the Persian side of the river. The Macedonians draw up their line (right to left): the Companion Cavalry (**A**); archers and Agrianian javelin-men (**B**); *sarissophoroi* (lancer cavalry armed with *sarissae*) and Paeonian cavalry (**C**); Socrates' squadron of Companion cavalry (**D**); the Companion Foot Guards (**E**); the six phalanx *taxeis* of Perdiccas (**F**), Coenus (**G**), Amyntas son of Andromenes (**H**), Philip (**I**), Meleager (**J**) and Craterus (**K**); Thracian peltasts (**L**); Allied cavalry (**M**); and, on the extreme left wing, the Thessalian cavalry under Parmenion (**N**). Opposite them, the Persians draw up their 20,000 cavalry in front of their infantry (**O**), who number approximately 100,000. The Persian cavalry are drawn up (left to right): Memnon of Rhodes (**P**) and Arsames (**Q**), each with 1,000 cavalry; Arsites, with 1,000 Paphlagonians (**R**); Spithridates, with 1,000 Hyrcanians (**S**); 1,000 cavalry from other nations (**T**); 2,000 Bactrians (**U**); 2,000 cavalry under Rheomithres (**V**); and 1,000 Median cavalry (**W**).

2 Alexander orders Amyntas son of Arrhabaeus forward with Socrates' squadron of Companion cavalry, Paeonian cavalry and one *taxis* of infantry (that of Perdiccas) before leading the remaining right-wing cavalry in an oblique charge. This charge is met by volleys of Persian missile fire. The troops on the Persian right wing charge into Parmenion's cavalry on the Macedonian left wing.

3 The Persians meet Alexander's charge with volleys of missile fire (both javelins and arrows). Only through sheer determination was Alexander able to push his charge through. The Macedonian cavalry then engage the Persian cavalry and force them to withdraw.

4 The Macedonian phalanx advances obliquely from the right. The phalangites engage with the larger body of Persian infantry, who can only engage with the units on the Macedonian right.

5 Parmenion's cavalry advance on the left.

6 The Persian infantry break and flee, leaving only the Greek mercenaries who withdraw to a small hill, but are surrounded by the returning Macedonian cavalry, who destroy them.

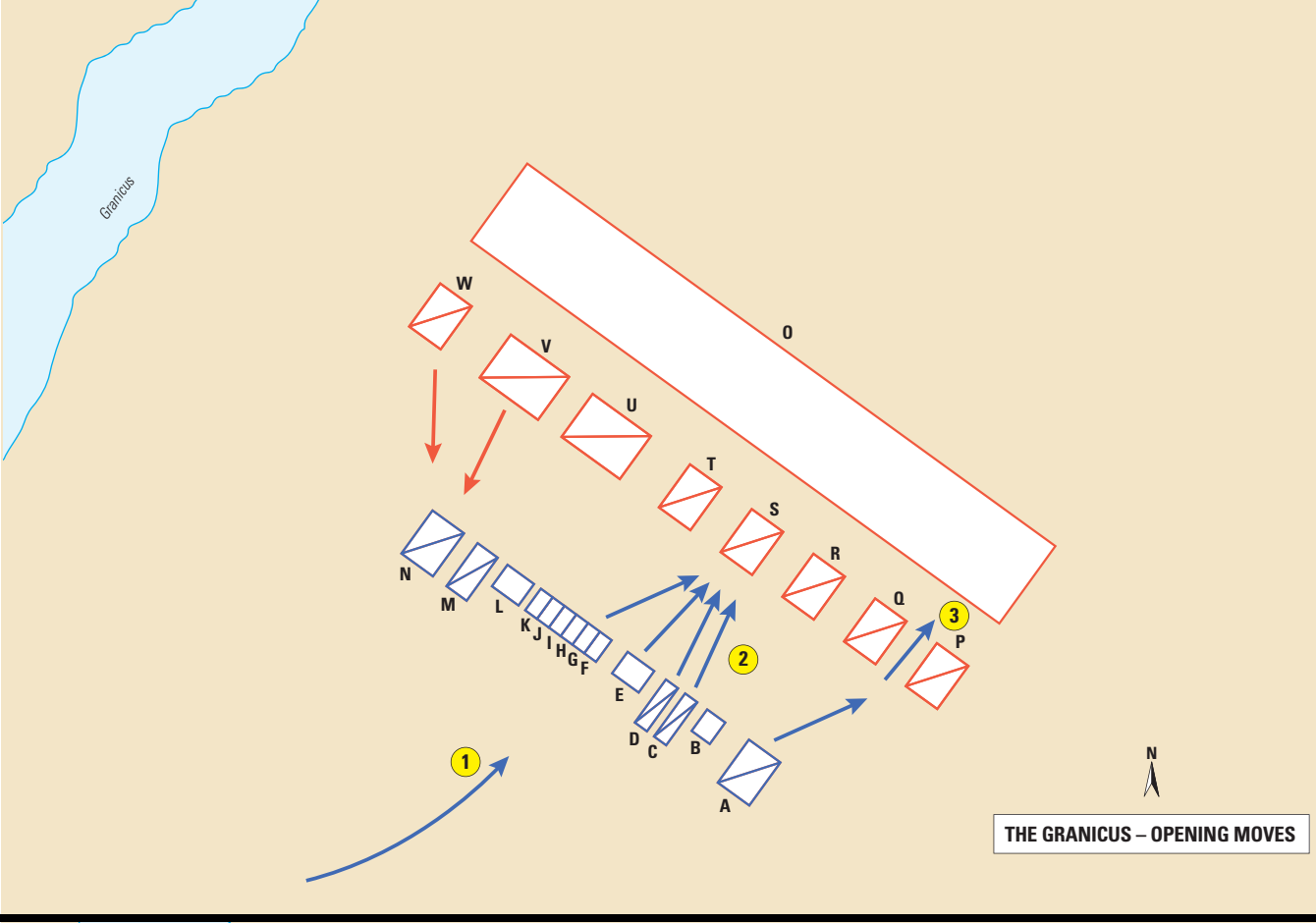
Battlefield environment

In the maps opposite we accept Diodorus' location of the battle across the river on the Persian side as well as his greater number of Persian infantry. The details of the battle are combined from all three accounts: Arrian's attack in echelon and the defeat of the infantry after the cavalry have been driven from the field. The discrepancy in casualty numbers common to all the sources can be more easily explained if Diodorus' version of events is accepted.

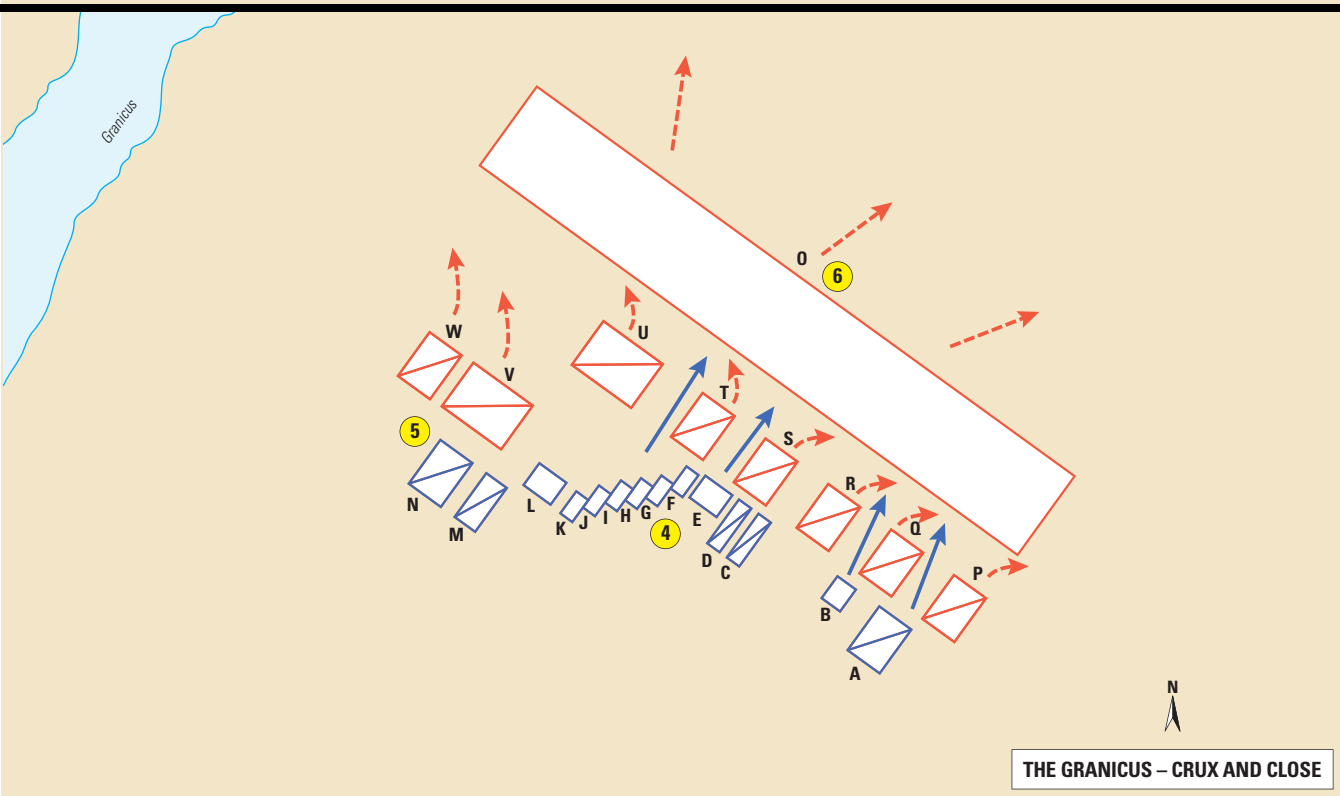
The best candidate for the Granicus, the river known today as the Biga Çay, lies just north of the town of Biga and flows roughly north–south into the Black Sea. Another possible candidate is the tributary of the Biga Çay, the Dimetoka. According to Plutarch (*Alexander* 16.2), the river alarmed the Macedonians because of its depth and the steep, cliff-like banks on each side which meant the Macedonians would have to scramble out in the face of fierce Persian opposition. Plutarch also states (*Alexander* 16.4) that the Granicus was swift-flowing, sweeping men off their feet mid-stream. According to Parmenion in Arrian's account (1.13.4), the river was very deep.

It was late in the day when the Macedonians arrived at the Granicus. The topography allowed the Persians to dominate the eastern side of the river and deny the Macedonians the ability to cross over to the Persian side easily. According to Arrian (1.15.2), the Persians rained down missiles on the Macedonian cavalry. The Macedonian *taxeis*, on the Macedonian right, chose this moment to start their advance and crossed the river relatively easily before engaging the Persian infantry. Diodorus says that Alexander's army crossed the river in the morning, but his account (17.19.3) implies that this was done at a more favourable part of the river.

The best candidate for the Granicus, the river known today as the Biga Çay. Today the Biga Çay is neither deep nor swift, although its flow is different today than it was in antiquity. (Danbury/ Wikimedia/CC BY-SA 3.0)



THE GRANICUS – OPENING MOVES



THE GRANICUS – CRUX AND CLOSE

INTO COMBAT

Reconstructing the battle of Granicus is complicated by the fact that the surviving narratives (Arrian and Diodorus especially) offer very different versions of the battle. According to Arrian (1.14.6–7), following the discussion with Parmenion, Alexander immediately launched his attack. First to enter the river were the *prodromoi* (horse guards) and the Paeonians, commanded by Amyntas, along with one *taxis* of infantry and Socrates' squadron of Companion cavalry commanded by Ptolemy son of Philip. Amyntas and Socrates' attack was conducted by cavalry supported by 1,500 infantry – either the hypaspists or the rightmost *taxis* of the phalanx (that of Perdiccas). If the hypaspists were armed as hoplites, then the greater length of the *sarissa* made it more likely that the phalangites would be chosen for the attack. Alexander then led his right wing of cavalry across the river. The Persians were waiting across the river, their cavalry in front, and Alexander's predominantly cavalry force immediately came under sustained missile fire from the Persian cavalry stationed on the far bank, much of it in the form of javelins. According to Arrian (1.14.7), the entire Macedonian line advanced across the river obliquely from the right, in the direction in which they were being pulled by the river's current, while the initial Macedonian cavalry attack was engaged with the Persian cavalry. By doing so, Alexander ensured that these troops offered enough of a threat to the Persians on the opposite river bank that they could not all move to attack Alexander as he emerged from the river lest they leave the path open for the remaining Macedonian forces to cross, or come under attack themselves from the unengaged Macedonian troops.

Alexander's cavalry sought to push their way out of the river, but the Persian cavalry attempted to push back and keep the Macedonians in the water. The men of the Macedonian vanguard came off worst in their initial encounter and fell back on Alexander as he advanced. Alexander, therefore, led the Macedonian right wing (with these remnants of the vanguard attack) and charged into the Persian commanders. Alexander's men, using cornel-wood lances against short javelins, were eventually able to get the best of this encounter and push the Persians back from the river bank (Arrian 1.15.5).

Arrian provides anecdotes of Alexander's individual combat (1.15.6–8), noting how his lance broke, but that he fought on with the broken shaft. Alexander grabbed the lance of one of his companions and slew Mithridates, Darius' son-in-law, with a thrust to the face. A Persian commander, Rhoesaces, then rode at Alexander and stuck his helmet with his sword. This strike sheared off part of Alexander's crest, but the helmet parried the blow. Alexander hurled Rhoesaces to the ground and stabbed him through the chest with his lance. As he was doing so, another Persian commander, Spithridates, aimed a sword-cut at Alexander, but the Macedonian king was saved by Cleitus, who cut off Spithridates' arm at the shoulder.

The Persian cavalry were pushed back by the Macedonian cavalry who had been joined by lightly armed troops (the Agrianians and peltasts). The Persian cavalry broke and Alexander turned his attention to the mercenary infantry, numbering almost 20,000, who stood where they had first been drawn up.

Alexander brought his phalanx and cavalry down on them, massacring all except 2,000, who were taken prisoner (Arrian 1.16.2). These prisoners included a body of Athenians, who were kept captive for some time in a bid to keep the city of Athens compliant to Macedonian rule.

Arrian's narrative is exciting but, when compared to the other sources for the battle, several problems emerge. In his account of the battle, Plutarch argues that Alexander's attack was even more rash (*Alexander* 16.3–4). Thus, there is no mention of a vanguard, only Alexander charging into the river and persisting until he had forged a crossing. (It pays to remember that both Plutarch and Arrian used Aristobulus as a source, because the differences between the two accounts cannot be easily explained by the use of different sources.) Other aspects of Plutarch's account, such as Alexander's helmet being struck and the attacks by Spithridates and Rhoesaces, suggest a close adherence to the same source, although Plutarch (16.8–11) includes Alexander's breastplate being punctured (Alexander remained unwounded); Spithridates and Rhoesaces attack together in Plutarch, but it is Rhoesaces' axe which strikes Alexander's helmet. Cleitus again kills Spithridates, this time running him through with a spear (Rhoesaces is killed by Alexander's sword).

Plutarch's account (*Alexander* 16.12–13, 14) records that the Persian infantry were intermingled with the cavalry along the river bank to oppose the Macedonians. Having crossed the river, the Macedonian phalanx engaged the Persian infantry forces. The Persian infantry soon fled the battlefield, but the Greek mercenaries stood their ground and accounted for most of the losses suffered by the Macedonian phalanx in the battle. The desperate mercenaries asked for quarter, but this was refused.

Our other sources for the battle make gaining a clear picture more difficult. Justin (11.6.10) states that the battle took place in the plains of Adrasteia rather than at the Granicus, and so did not involve a river crossing at all. He also tells us that the Persians numbered 600,000 men. This number, though suspiciously large, is repeated by Justin and recurs in Plutarch and Arrian's accounts of the battle of Issus. The rest of Justin's brief account is not particularly useful and may be relatively safely discounted.

ABOVE LEFT
Here we see different types of Persian helmet, dress and kit next to each other on the relief on the stairs of the Apadna in the Palace of Darius at Persepolis. The rounded design is Median, while the fluted design is Persian. Note also here that the two bow designs are different; the two types of arrow appear to differ in length. (Taranis-iuppiter/Wikimedia/CC BY-SA 3.0)

ABOVE RIGHT
Currently in the British Museum, this Athenian vase shows a Persian cavalryman facing a (naked) Greek hoplite. It dates between 340 BC and 260 BC and shows that Persian attire had not changed from the period of the Greek and Persian wars in 480 BC. It also reinforces the idea that the attire of Persian infantry and cavalry did not differ. The designs of the tunic, trousers and headgear also correspond to those on the Alexander Sarcophagus, even if the geometric designs are no longer visible on the latter. (Author's Collection)

Perdiccas

Perdiccas, the son of Orontes, was a Macedonian nobleman approximately the same age as Alexander who would prove to be one of Alexander's best infantry commanders and one of the king's most trusted companions. Perdiccas was from the region of Orestis in western Macedonia and, as such, he was appointed commander of one of the six *taxeis* of the Macedonian phalanx: that drawn from men of Orestae and Lyncestae. Perdiccas commanded that *taxis* at the Granicus where he held the rightmost position in the Macedonian phalanx. When Alexander ordered Amyntas forward with the Companions and Paeonian cavalry, Perdiccas' *taxis* went with them and formed the infantry arm of the charge into the Persian lines. Perdiccas and his *taxis* therefore bore the brunt of the infantry fighting at the Granicus until they were eventually joined by the remainder of the phalanx *taxeis* advancing forward from the right. The majority of the Macedonian infantry casualties (although low in number) were probably suffered by Perdiccas' *taxis*.

Perdiccas would lead the same *taxis* at Issus and Gaugamela. Perdiccas had proven himself prior to the Persian expedition in fighting against Thebes in 335 BC and he went on to fight in all of Alexander's campaigns. In 324 BC he was appointed to succeed Hephaestion as commander of the Companion cavalry, proof of his close relationship to Alexander. Shortly before Alexander died in 323 BC, he gave Perdiccas his ring, thus indicating that he had appointed Perdiccas as his successor. Perdiccas soon fell out with the other infantry commanders, however, and was assassinated in 321 BC.

By contrast, Diodorus' account (17.19–21) offers much which is different, but represents a more cohesive story of the battle. His account of the battle is the longest that survives and bolsters the case for more attention being shown to his version of events. According to Diodorus, when Alexander reached the Granicus, the Persians were deployed on the high ground on the opposite bank. There is no reference to the advice of Parmenion or the other objections to battle; Diodorus simply states that Alexander and his forces crossed the river at dawn, before the Persians could challenge the advance (17.19.3). Alexander must therefore have camped for the night (just as Parmenion in Arrian's account suggested he should).

Arrian and Plutarch's battle takes place late in the day, Diodorus' at dawn. Diodorus states that the Persians deployed their cavalry in front of the Macedonian infantry (17.19.3). We are given a detailed deployment of the Persian cavalry left to right – Memnon and Arsamenes on the left wing, followed by Arsites, then Spithrobates. (Arsamenes is the same man as Arrian's 'Arsames', and Spithrobates is Arrian's 'Spithridates'.) The Persian centre was occupied by various national contingents and the right wing was composed of 1,000 Medes, 2,000 Bactrians and 2,000 more cavalry under Rheomithres, who is named by Arrian before the battle (1.12.8), but takes no part in Arrian's battle account. Diodorus tells us that the Persian forces were composed of more than 10,000 cavalry and at least 100,000 infantry (17.19.4). Given that Diodorus provides numbers for 5,000 cavalry, if 1,000 cavalrymen are assigned to each of the remaining named units – that is, a *hazabaram* for each – we arrive at the figure of 10,000 cavalry he mentions. This interpretation would include 1,000 mercenary cavalry under Memnon, 1,000 cavalry commanded by Arsames/Arsamenes, 1,000 Paphlagonians commanded by Arsites, 1,000 Hyrcanians under Spithrobates, and 1,000 cavalry from other nations. According to Diodorus, the infantry (as in Arrian) were posted behind the cavalry and did not advance, the 10,000 cavalry being deemed sufficient to defeat Alexander's forces (17.19.5).

Arsames

A Persian nobleman appointed by Darius as Satrap of Cilicia, Arsames was one of the Persian commanders present at the Granicus. He is the first-named commander in Arrian's account and this might suggest seniority. Along with Memnon of Rhodes with his cavalry force, Arsames commanded his cavalry contingent on the Persian left wing. These Persian cavalry units met the first charge of the cavalry on the Macedonian right and, according to the sources, inflicted heavy losses on those units until they were joined by Alexander himself. Alexander directed his attack at the Persian commanders and eight were killed. Arsames was one of the few Persian commanders to escape alive and he fled back to Tarsus, the capital of his satrapy.

Arsames then enacted a scorched-earth policy, burning and destroying the crops of his satrapy, but was surprised by the speed of Alexander's advance. According to Arrian, Arsames posted strong defences at the Cilician Gates, but the defenders abandoned their posts at Alexander's approach. Curtius Rufus contends, however, that the Cilician Gates were never intended to be defended. Both accounts suggest that Arsames' plan was to draw Alexander on, into Cilicia, where forage and stores had been destroyed. Arsames possibly intended to plunder Tarsus, but was caught off-guard by Alexander rushing forces to the city; Arsames left Tarsus untouched and fled to Darius in Syria (who was perhaps already at Sochoi, having already begun his march to face Alexander). Arsames fought in Darius' army at Issus in 333 BC and died there; he is named first in the list of casualties.

In Diodorus' account, Alexander leads the right wing against the Persian left wing where his deeds of personal valour are recorded. These too accord, in the main, with the accounts of Arrian and Plutarch, although there are differences. There is no vanguard attack in Diodorus as there is in Arrian (but not Plutarch). Diodorus has Spithrobates charge Alexander at the head of a group of Persian cavalry. Diodorus calls Spithrobates (not Mithridates) the son-in-law of Darius, but the encounter is the same one as Arrian's account of Mithridates' demise. Diodorus' account has a javelin hurled at Alexander which pierces his shield and breastplate (as in Plutarch), but Alexander thrusts his spear at his attacker's chest and breaks the shaft (as in Arrian). Spithrobates draws his sword and attacks Alexander, but Alexander thrusts his lance into his attacker's face and kills him (as in Arrian). Rhoesaces then brings his sword down on Alexander's helmet (as in Arrian) although in Diodorus' account the blow splits Alexander's helmet and inflicts a scalp wound (17.20.6). Cleitus then kills Rhoesaces, by cutting off his arm (a detail from Arrian).

At the Granicus, the way Arrian and Plutarch describe it, Alexander was abandoning nearly all that was proven to work in the Macedonian military machine and trying to achieve a victory with the hammer alone. That is a highly unlikely scenario. Alexander simply did not have enough cavalry with which to affect such tactics, especially if he was charging a force superior in numbers. His thirteen squadrons (Plutarch's figure) would only amount to about 2,500 men (with 200 men per cavalry squadron), yet he was charging 20,000 Persian cavalry. Alexander only had 4,000 cavalry in total and even if he was charging only the leftmost Persian units, he was still outnumbered. If we accept Alexander's cavalry charge in Diodorus' account, however, we restore the norms of the proven Macedonian tactics to the battle of the Granicus. According to Diodorus, Alexander was charging the left wing of a force of only 10,000 cavalry in total and so the numbers may have been more even. Diodorus states (17.21.4) that even though Alexander's personal conduct at the Granicus earned him the palm for bravery, the Thessalian cavalry on the Macedonian left wing earned a great reputation for valour.

The reasons for relating Alexander's charge on the Macedonian right in both Arrian and Plutarch's accounts seem to be to make him appear reckless and impetuous. While it is true that in all his battles Alexander placed himself in danger and at the forefront of the Macedonian forces, his charges were not reckless or impetuous, but considered and well planned to create and then exploit a gap or weakening in the Persian line; and, what is more, they were part of a known battle plan. Alexander's entire invasion would have come to an end had he fallen at the Granicus. Of course, that was always going to be a risk the Macedonian king ran with his style of leadership in leading cavalry charges from the front, but it is an aspect of his behaviour which is perhaps overemphasized by Arrian and Plutarch.

Alexander did indeed lead from the front and was inordinately brave, that is clear, but the solid reliability of the Macedonian military machine was built on the dependability of the phalanx in both attack and defence. Alexander is highly unlikely to have engaged in a battle at the Granicus where those aspects of the phalanx could not be used because the phalangites' formation was necessarily disrupted or not brought to bear.

It also seems unlikely that Alexander would have had his infantry move into the river if that advance would have immediately been disrupted by the terrain into which they were heading. This would have completely nullified the effectiveness of the phalangites, who fought best in formation. It is therefore highly unlikely that Alexander sent his phalanx into unfavourable terrain which would disrupt its formation; and all in the teeth of Persian missiles. The phalangites may have been sent forward to absorb Persian missile fire but a figure of just nine casualties (Plutarch, *Alexander* 16.15) would seem to make this highly unlikely (that or the phalanx's upraised spears disrupted Persian javelins and arrows to a greater extent than has ever been recognized).

According to both Plutarch and Diodorus, the Macedonian phalanx did clash with the Persian infantry, but it is difficult to assess exactly how many *taxeis* of the phalanx came into contact with the Persian infantry – certainly the rightmost (Perdiccas') *taxis* did. The others, even in echelon would have maintained contact with those to their right to protect their flanks.

Plutarch records that the Persian infantry were intermingled with the cavalry along the river bank to oppose the Macedonians. Having crossed the river, the Macedonian phalanx engaged the Persian infantry forces. The Persian infantry soon fled the battlefield, but the Greek mercenaries stood their ground and, according to Plutarch (*Alexander* 16.12–13, 14), accounted for most of the losses suffered by the phalanx in the battle.

If we combine Arrian's oblique phalanx attack with Diodorus' account of the Granicus, Alexander is revealed to have maximized the effectiveness of his smaller numbers of infantry. The larger Persian forces could not afford to advance against the Macedonians because they risked being attacked themselves and of creating a gap in their own line which the left wing of Macedonian cavalry could immediately exploit. In Arrian (1.16.2) the Macedonian phalanx was only brought against the Greek mercenaries; the rest of the Persian cavalry had already fled. Arrian's account would mean most of Alexander's phalanx was squandered, unable to attack and therefore the battle (as described) was mainly a cavalry one. Diodorus tells us that with the Persian cavalry commanders slain, the Persian cavalry fled the scene, leaving

Although badly damaged, this relief from Persepolis does show the left and right sides of the same kind of troops wearing distinctive clothing, helmets and equipment. It is probable that the levies from Persia and Media were similarly armed and dressed. (Diego Delso, delso.photo/ Wikimedia/CC BY-SA 4.0)

the opposing infantry forces to do battle. The Persian infantry, deeply affected by the rout of their cavalry counterparts, soon fled likewise (17.21.5).

The scale of the Macedonian victory at the Granicus is made more probable if Alexander's entire army was indeed brought to bear on a numerically superior force. Plutarch does not mention the numbers of Persian infantry but records that 20,000 of them were killed. Arrian mentions that the Persians only had foreign mercenaries and that they numbered slightly less than 20,000. It would seem highly unlikely that the Persians would decide to engage the Macedonians when they were outnumbered in infantry. Even if they were intending to decide the battle in a cavalry engagement, the threat of the Macedonian infantry (and the fact that the Persians seem to have been aware of the Macedonian phalanx's fearsome reputation) make it unlikely they would do so when their numbers were only evenly matched. We should reject Arrian's number of less than 20,000 Persian infantry. Likewise, Justin's figure of 600,000 seems too many. Diodorus' 100,000 is within the proportion by which the Persians outnumbered the Macedonians at both Issus and Guagamela; even if we cannot accept the number itself, we should be confident that the Persians outnumbered the Macedonians in the number of infantry and cavalry. The presence of overwhelming Persian infantry would have meant that the satraps outnumbered Alexander and were therefore confident of victory. They would have expected such a large army to put up a much better resistance to Alexander's infantry, which numbered, at most, 40,000 foot soldiers of all types.

If we accept Diodorus' account, an oblique Macedonian advance on their right would not have allowed the majority of the 100,000 Persian infantry to get into combat with the Macedonian line until the Macedonian right

wing was victorious. Like Plutarch and Arrian, Diodorus also has Alexander opposed in the main by the Persian cavalry arm which deployed in front of the infantry. The Persian infantry were then engaged after their cavalry had been bested. We know from Diodorus (17.19.4) that there were cavalry from Bactria, Hyrcania, Paphlagonia, Cappadocia and most importantly, Media. Other places of origin are unnamed, but these cavalry contingents spanned the Persian Empire and represented the men the satraps present could levy.

While there certainly were foreign mercenaries present at the Granicus, the Persian recruiting system would have meant that the 14 named commanders brought levies of troops from their homelands and estates as well. We should also expect that the Persian commanders would have provided more than just over 1,000 infantry each. Diodorus' higher number of infantry seems a more likely scenario, each satrap bringing slightly more than 7,000 infantry (and perhaps 1,000 cavalry). If we consider that each satrap and noble would be required to bring a number of *hazarabam* of 1,000 men, the breakdown of large numbers of Persian infantry is easier to envisage. The more powerful nobles and satraps could have brought more than the lesser ones. What is more, the sources of the Persian infantry would have been widespread and would have represented the territories and estates from which the nobles and satraps could raise or hire troops.

The casualty numbers recorded by the various sources offer another conundrum, although they may also help us to establish a more likely course of events of the battle. Arrian (1.16.4) tells us that the Macedonians lost 25

There were several types of helmet used in Macedonian phalanxes. The most ubiquitous was the Phrygian or Thracian helmet. A simpler helmet was the Pilos, shown here in the centre of the bottom row; it was modelled after the simple felt hat (although this is an ornate example of that type). The leftmost helmet on the bottom row is a Chalcidian helmet, a style which was also worn. Top left is an Illyrian helmet; ornate examples of this type have survived. Next to that is a Corinthian helmet, a type more associated with the classical hoplite of the 5th century BC, but probably still used by some hoplites in the time of Alexander. (MisterPlus65/Wikimedia/ CC BY-SA 4.0)

A detail from the Alexander Mosaic showing Darius' cavalry. The decoration here agrees with that depicted at Susa, but may also denote armour panels on the arms. (DEA/G. NIMATALLAH/ De Agostini/Getty Images)

Companion cavalry in the first charge, 60 more cavalry and approximately 30 infantry later. Plutarch (*Alexander* 16.15) quotes Aristobulus as saying there were only 34 Macedonian dead, nine of whom were infantrymen (the remaining 25 accords with Arrian's number of the Companions who fell). Justin (11.6.12) tells us that nine infantry and 120 cavalry fell on the Macedonian side; his numbers agree partially with the other sources. Diodorus does not specify the Macedonian casualty numbers.

It is hard to reconcile the low Macedonian casualty numbers recorded by Arrian and Plutarch with the ferocity of the hail of missiles into which both authors have Alexander charge. By contrast, Persian casualties across all sources are noted as having been very high. Arrian (1.16.2) records that 1,000 Persian cavalry and almost 18,000 infantry perished (his infantry number is just less than the 20,000 cavalry, and only 2,000 infantry were taken prisoner). Plutarch (*Alexander* 16.15) reports 2,500 Persian cavalry and 20,000 infantry were killed. It is noteworthy that Plutarch has more infantry casualties than Arrian has infantry present at the battle. Diodorus (17.21.6) records 2,000 Persian cavalry and 10,000 infantry dead, along with 20,000 prisoners. The low numbers of Macedonian casualties do not accord with the hard fighting mentioned by Arrian and Plutarch, but they do seem to fit with Diodorus' account of Alexander crossing the Granicus at dawn before the Persians could deploy and fighting the battle on the Persian side of the river. Diodorus' relatively low figure of 10,000 Persian infantry casualties does, however, make sense if the Persian infantry fled soon after being engaged by the Macedonians. The numbers of Persian casualties are always unbelievably high, no doubt to awe readers with the overwhelming and crushing nature of Alexander's victories.

Issus

333 BC

BACKGROUND TO BATTLE

After the battle at the Granicus River, Alexander appointed new satraps to replace Darius' men, kept existing taxes and tributes in place and absolved various peoples and cities from blame for opposing him. Thereafter, the cities of Asia Minor, including Sardis, surrendered to him; only Halicarnassus and Miletus resisted and had to be taken by siege. Alexander installed a democracy in Ephesus and more and more cities came over to his cause.

In all of these actions the men of the Macedonian phalanx played a variety of roles, such as undermining the wall of Myndus during the siege of Halicarnassus in 334 BC (Arrian 1.20.6). Arrian tells a story (1.21.1–4) of how, during that siege, two drunk and unnamed Macedonian phalangites from Perdiccas' *taxis* decided to attack the wall of Halicarnassus to show how brave they were. The two phalangites killed the defenders who sallied forth from the walls and were joined by more men from their *taxis*. The fighting escalated and Arrian posits that the Macedonians came close to capturing Halicarnassus, which fell only days later.

Pressing on despite the onset of winter, Alexander continued to assault those places which did not surrender to him en route to Phrygia. In early 333 BC, he advanced to Gordion in Phrygia, and there he received a fresh levy of 3,000 phalangites, 300 cavalry and 200 Thessalians (Arrian 1.29.4). These must have been to replace casualties and garrisons, because although there were enough men to form two new *taxeis*, in the battle arrays to come, only the usual six *taxeis* are named. From Gordion, Alexander pressed on into Galatia, Cappadocia and to the Cilician Gates (the main pass through the Taurus Mountains), the cities of Tarsus and Soloi in Cilicia, and then on to Mallus in Anatolia. At Mallus (or earlier), Alexander received word that Darius' forces

The Cilician Gates, through which Alexander's army had to march to reach Issus. Locations such as this would have made the perfect place for the Persians to ambush Alexander, but Darius did not do this. It would not be until after Gaugamela in 331 BC that Ariobarzanes, one of the last resisting satraps, would defend the Persian Gates, holding Alexander up for a month. (Teogomez/Wikimedia/Public Domain)

were in the field, perhaps four days' march away at Sochoi in Syria.

The Persian defeat at the Granicus and the loss of so many of the ruling class posed major problems for Darius. Without defeating Alexander himself, the Persian king could not hope to re-impose his will on those territories which had surrendered to the Macedonian king. Having fled to Miletus after the Granicus, Memnon of Rhodes, Alexander's most capable opponent, was appointed by Darius to command the entire fleet and Asiatic coast. Memnon attempted to wrest the course of the war back in Darius' favour, not by meeting Alexander in battle, but by conquering Aegean islands in Alexander's rear. This policy was in keeping with that which Memnon had suggested before the Granicus; he managed to seize Chios and cities on Lesbos, but died in August 333 BC, in the course of besieging Mytilene. Memnon's son, Pharnabazus, continued his father's policy and the mercenaries were summoned by Darius to return to the interior.

It took Darius the better part of a year to send word of his intention to oppose Alexander, gather his army at Babylon and march against the invader, the battle of Issus occurring in early November 333 BC. Diodorus (17.30.7) suggests that Darius put all his hopes in Memnon, but he cannot have summoned his army and put it into the field between August and November 333 BC (although several sources refer to the 'rushed' mustering of his army). It must always have been the Persian plan that Darius would eventually face the Macedonians in person.

According to Diodorus (17.31.2) and Justin (11.9.1), Darius had 400,000 infantry and 100,000 cavalry. Plutarch (*Alexander* 18.6) and Arrian (2.8.8) list an army of 600,000 men. Curtius (3.2.3–9) gives a precise breakdown of the forces involved: 70,000 Persian infantry and 30,000 Persian cavalry; 50,000 infantry and 10,000 cavalry from Media; 40,000 infantry and 7,000 cavalry from Armenia; plus 2,000 axe-armed Barcanian cavalry and 10,000 similarly

RIGHT
A detail of Persian soldiers from Persepolis. These soldiers are armed with spears, but also have round shields with scallops on either side. It is possible that these scallops facilitated spear thrusts. Depictions of men with shields are rarer than those without them at Persepolis, and we know from other sources that there was a variety of shield types. The ratio of troops in a unit which bore shields to those who (perhaps) did not is unknown. (Diego Delso, delso.photo/ Wikimedia/CC BY-SA 4.0)

FAR RIGHT
A detail from the Alexander Mosaic (see page 54) depicting Darius III at the battle of Issus. (DIRECTMEDIA/Wikimedia/ Public Domain)

armed infantry; 6,000 Hyrcanian cavalry; 40,000 Derbices infantry and 2,000 cavalry; and 8,000 Caspii infantry and 200 cavalry. Other contingents gave 1,000 cavalry and 2,000 infantry and 30,000 Greek mercenaries. Curtius' numbers add up to 308,200 soldiers at Darius' disposal. The 70,000 Persian infantry in Curtius' breakdown of Darius' forces would represent the 10,000 Immortals and six *baivaraba* of Persian levies. There seems no way that such numbers could have been supported logistically, but the ancient sources are full of such immense hordes.

Darius certainly seems to have been confident of victory. His destination at Sochoi, where he awaited Alexander, was chosen because it was an open plain large enough for his army to deploy fully and where his cavalry could manoeuvre freely. According to Arrian (2.6.3, 2.6.6), Darius was advised by a Macedonian deserter not to leave such an ideal location – advice Darius ignored.

Our sources differ as to when and where Alexander knew of Darius' approach: Arrian (2.7.2) tells us it was late, Justin (11.8.1) tells us it was at Gordion, while others tell us it was at Tarsus. Alexander fell ill at Tarsus and it may have been this delay which encouraged Darius to move; Arrian (2.6.6–7) states that by moving his position, thereby choosing a field less than ideal for the Persian cavalry, Darius handed Asia to the Macedonians, and that destiny was at play. In the event, Darius marched his army to Issus via the Amanic Gate, a mountain pass, moving undetected behind Alexander's line of march (Arrian 2.7.1). By cutting off Alexander's march into Syria, however, Darius brought about the battle the Persians wanted.

Most of our sources tell of Darius occupying Issus, Alexander having to turn back to face him and the armies meeting at the Pinarus River. Darius had fortified accessible sections of the banks of the Pinarus, which tells us this could not have been some haphazard plan. There is some confusion, in that Diodorus (17.33.1) has Alexander occupy Issus and Darius, thinking Alexander would not meet him in battle on a plain clearly to Darius' advantage, march towards him. Most commentators reject Diodorus' version of the battle, yet his account seems to provide the best description of the topography of the battlefield.

OPPOSITE
A close-up of a Persian soldier from Persepolis. He wears one of the headwear types encountered in depictions of Persian troops. He is traditionally armed with spear, quiver and bow. We are told that the height of the Persian spear was less than that carried by a Greek hoplite (2.5m), but that does not seem to be the case here. (Diego Delso, delso.photo/ Wikimedia/CC BY-SA 4.0)

MAP KEY

1 Alexander emerges on to the plain at a narrow point and must draw up his army in deep formation with the cavalry behind. The Persians hold their position behind palisades on the far banks of the Pinarus River, arrayed (right to left): Nabarzanes, with cavalry and 20,000 slingers and archers (**A**); Thimodes, with 30,000 Greek mercenaries (**B**); Aristomedes, with 20,000 'barbarian infantry' (**C**); Darius, with 3,000 cavalry and 40,000 infantry (**D**); and Median and Hyrcanian cavalry (**E**). A reserve of infantry (**F**) is located behind these deployments and 6,000 light javelin-men and slingers form a skirmish line (**G**) in front of the Persian line. Darius takes position behind his infantry on the left wing. A small Persian contingent (**H**) occupies a hill on Alexander's side of the Pinarus to threaten his flank.

2 As Alexander advances towards the Persians he is able to deploy his phalanx to its normal depth (16 men rather than 32) and position his cavalry on the wings. Alexander's deployment is as follows (right to left): Thessalian (**I**) and Macedonian (**J**) cavalry; Nicanor and the royal guard and the foot-guard/ hypaspists (**K**); the phalanx, including the *taxeis* of Coenus (**L**), Perdiccas (**M**), Meleager (**N**), Ptolemy (**O**), Amyntas (**P**) and Craterus (**Q**); and the Peloponnesian cavalry on the left wing (**R**). Screening the phalanx are lightly armed troops and archers (**S**). Behind the phalanx is a line of mercenaries (**T**), there to protect the phalanx's flanks and plug gaps in the line as required. This deployment stretches from the foothills to the sea.

3 As Alexander advances, Darius reinforces his right wing with more cavalry. Seeing this, Alexander sends the Thessalian cavalry to reinforce his own left wing. A unit of lightly armed troops and archers dislodge the Persian force on the hill on the right flank of the Macedonian line.

4 When the Macedonians come within arrow and javelin range, the Persians unleash a hail of missiles, but these prove ineffective against the phalanx. The Persian cavalry charges on the right wing and engages the Peloponnesian and Thessalian cavalry. Alexander charges with the Macedonian cavalry as does Nicanor with the Royal Guards, the foot-guards and Coenus' *taxis* of the phalanx.

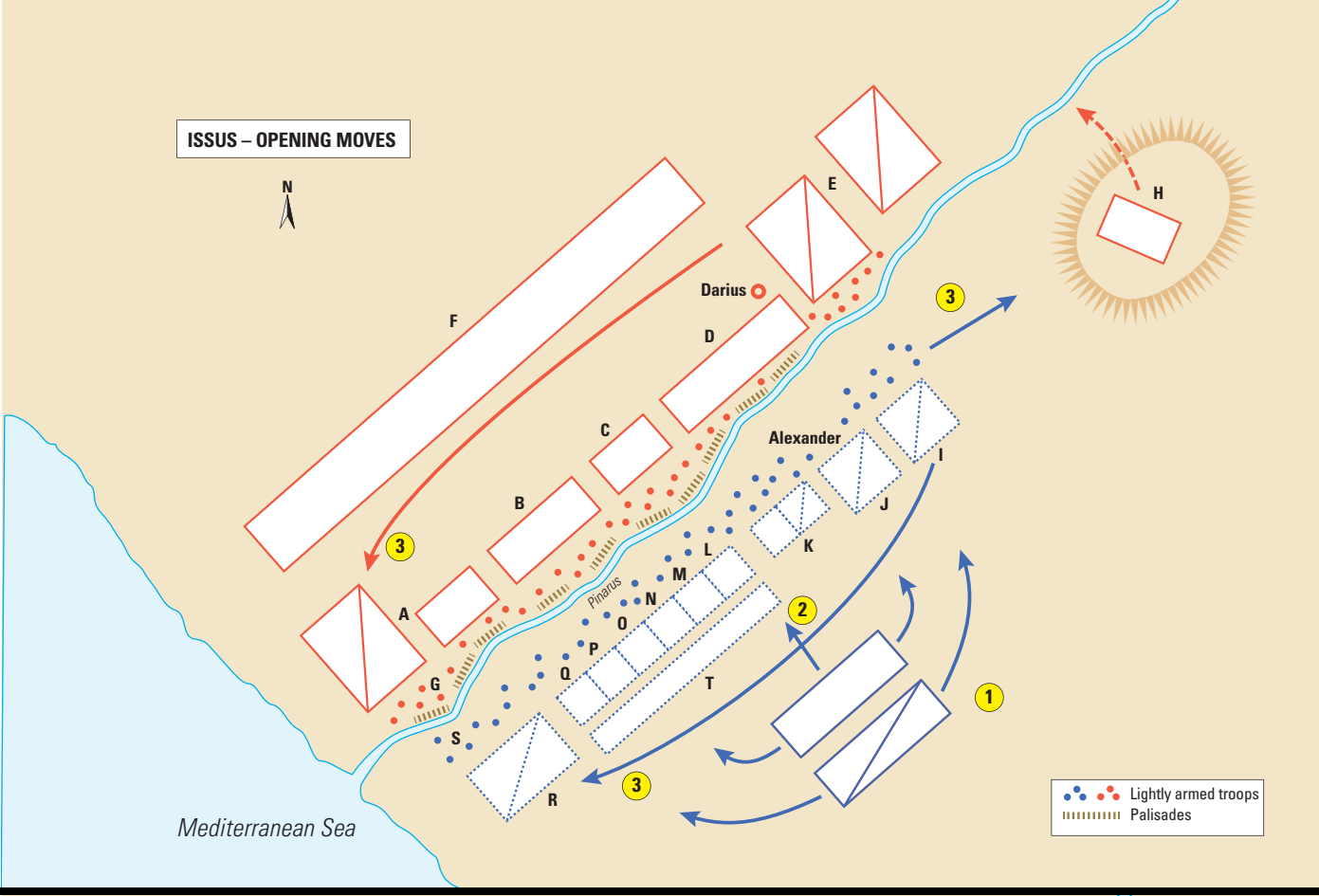
5 Alexander's phalanx advances obliquely into the river. The centre and leftmost *taxeis* reach the river, but do not cross. On the Macedonian right flank, Alexander's charge is successful, routing the Persian infantry and cavalry there. Darius flees.

6 Alexander turns his charge towards the Greek mercenaries commanded by Thimodes and Aristomedes on the Persian right. They rout and the cavalry on the Persian right also routs.

7 Darius' fleeing troops are pursued and cut down. Darius escapes, but his camp is captured.

Battlefield environment

The Payas River in southern Turkey is the most likely candidate for the Pinarus River of the battle. It sits on a plain which, at its southern end, is very narrow. Alexander deployed into this area in a very crowded array and advanced northwards towards the Pinarus. As the plain extends northwards, towards the mouth of the river, it widens out; this allowed Alexander to deploy his line across the entire plain, from the foothills to the coast. It was early November and so perhaps cold, but the Macedonians spent the greater part of the morning advancing to the Persian position. At the widest part of the plain, on the northern bank of the Pinarus River, the Persians deployed. This was perhaps as much as 4km wide, but still not enough room for the Persians to deploy fully or manoeuvre. Further to the north, where the plain is wider still, Darius had abandoned a position where his army could deploy fully and where his cavalry could manoeuvre freely. To this day, the Payas River is neither deep nor wide. The palisades erected by the Persians on its northern bank formed a further obstacle to the Macedonian infantry facing Persian and Greek mercenaries.


ISSUS – OPENING MOVES
N
F
E
H
Darius
D
3
C
Alexander
I
B
J
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L
K
M
Pinarus
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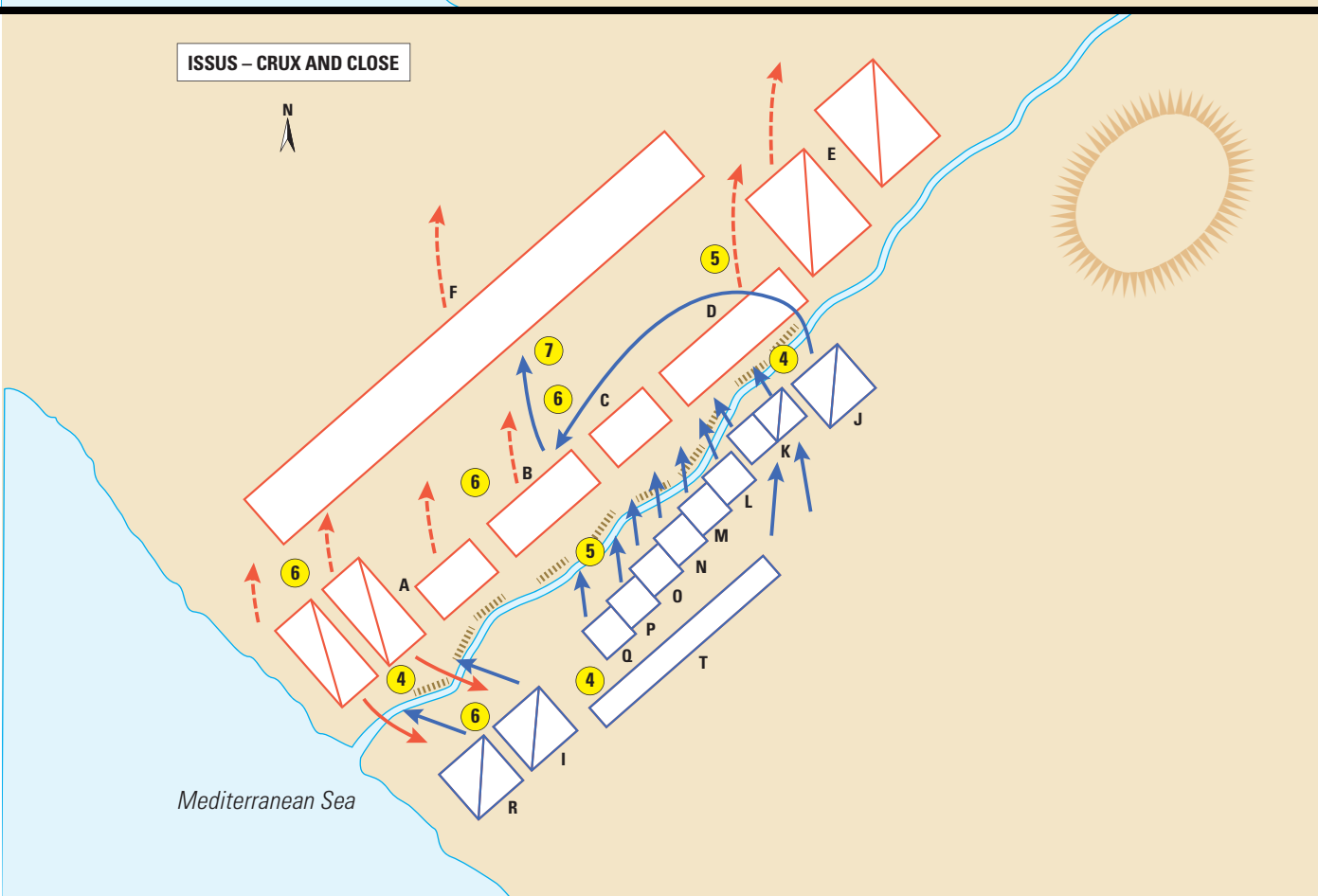
Mediterranean Sea
Lightly armed troops
Palisades


ISSUS – CRUX AND CLOSE
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R
Mediterranean Sea

INTO COMBAT

We are fortunate in that, across our sources for the battle of Issus, we have an order of battle for both sides, and we can be relatively confident in both. Curtius tells us (3.9.1–6) how the Persians were arrayed. In front of the Persian line were 6,000 light javelin-men and slingers in a skirmish line. On the right wing were Nabarzanes, with cavalry and 20,000 slingers and archers, and Thimodes (Memnon's brother and Mentor's son) with the 30,000 Greek mercenaries. On the left wing were: Aristomedes the Thessalian, with 20,000 'barbarian infantry'; Darius, with 3,000 cavalry and 40,000 infantry (the Immortals and three *baivaraba* of levies); and the Median and Hyrcanian cavalry. Behind was a reserve of infantry. Given that Darius' contingent consisted of both cavalry and infantry, the Immortals were probably stationed on the extreme left of the Persian infantry, next to Darius' cavalry; the Persian king would have taken position behind the Immortals.

We can have some confidence in Curtius' accounts of the Persian dispositions because he and Arrian agree on the deployment of Alexander's troops. Arrian has Darius flee first in the battle (2.11.4) and offers little detail regarding the Persian line, probably in order to deprive Darius of any credit for putting up a fight. Arrian's account of the Persian array (2.8.6) is less detailed than that offered by Curtius: approximately 30,000 Greek mercenary hoplites opposing the Macedonian phalanx, with 60,000 Cardaces on the flanks. Arrian goes on to contend (2.8.8) that Darius' arrangement of his light and heavy troops (by nationality and behind the Greek mercenaries and the barbarians drawn up in phalanx formation) was a deployment-in-depth that effectively rendered them 'useless' in battle. The 'useless' depth should not be entertained, however, if we accept that the plain widened out and that the Persians' numerical advantage would be nullified by such a deployment. Perhaps Arrian's claim reflects a misunderstanding on his part of the Persian reserve mentioned in Curtius. By placing himself on the left wing, as Curtius tells it, Darius would have opposed Alexander's right wing; this would have won the Persian king some credit for placing himself at the likely centre of the battle – credit which Arrian wants to deny him. If we accept the validity of Darius' stratagem to move his forces behind Alexander's march, though, then there is little reason to accept Arrian's negative judgement on Darius' conduct at Issus.

Curtius' positioning of the Greek mercenaries on the Persian right wing differs from the deployment details related by Arrian, who tells us (2.8.6) that the mercenaries faced the Macedonian phalanx and were flanked by 60,000 Cardaces. Curtius states (3.9.2) that the mercenaries were the equal of the Macedonian phalanx, but their position in the centre seems most unusual. It is more likely that the Persian line consisted of a right wing of mercenaries under Thimodes; then came 20,000 infantry under Aristomedes, then 40,000 infantry (including the Immortals) under Darius. The Persian centre was therefore made up of Aristomedes' troops and the rightmost units of Darius' infantry. To either side of these infantry dispositions were the cavalry contingents. Thus the Persian line would have been made up of Cardaces and Persian infantry, but the foot soldiers on the rightmost edge of the Persian infantry formations and closest to the sea would have been the Greek mercenaries – and they would still oppose the *taxeis* of Craterus and Amyntas.

Arrian (2.8.3–4) and Curtius (3.9.7–8) tell us that Alexander initially placed his cavalry behind his infantry, and that the infantry spanned from the foothills on the right flank to the sea on the left. The Macedonian infantry were arrayed (right to left): Nicanor and the royal guard and the foot-guard/hypaspists; Coenus' *taxis* of the phalanx; Perdiccas' *taxis*; Meleager's *taxis*; Ptolemy's *taxis*; Amyntas' *taxis*; and Craterus' *taxis*. Parmenion, in command of the left wing, was ordered to leave no gap by the sea in order to avoid being outflanked. Curtius tells us (3.9.8) that Alexander's cavalry were organized into wings behind the phalanx, with the Macedonians and Thessalians on the right and the Peloponnesians on the left under Parmenion; this is borne out in Arrian's narrative (2.8.9). Screening the phalanx were slingers and archers.

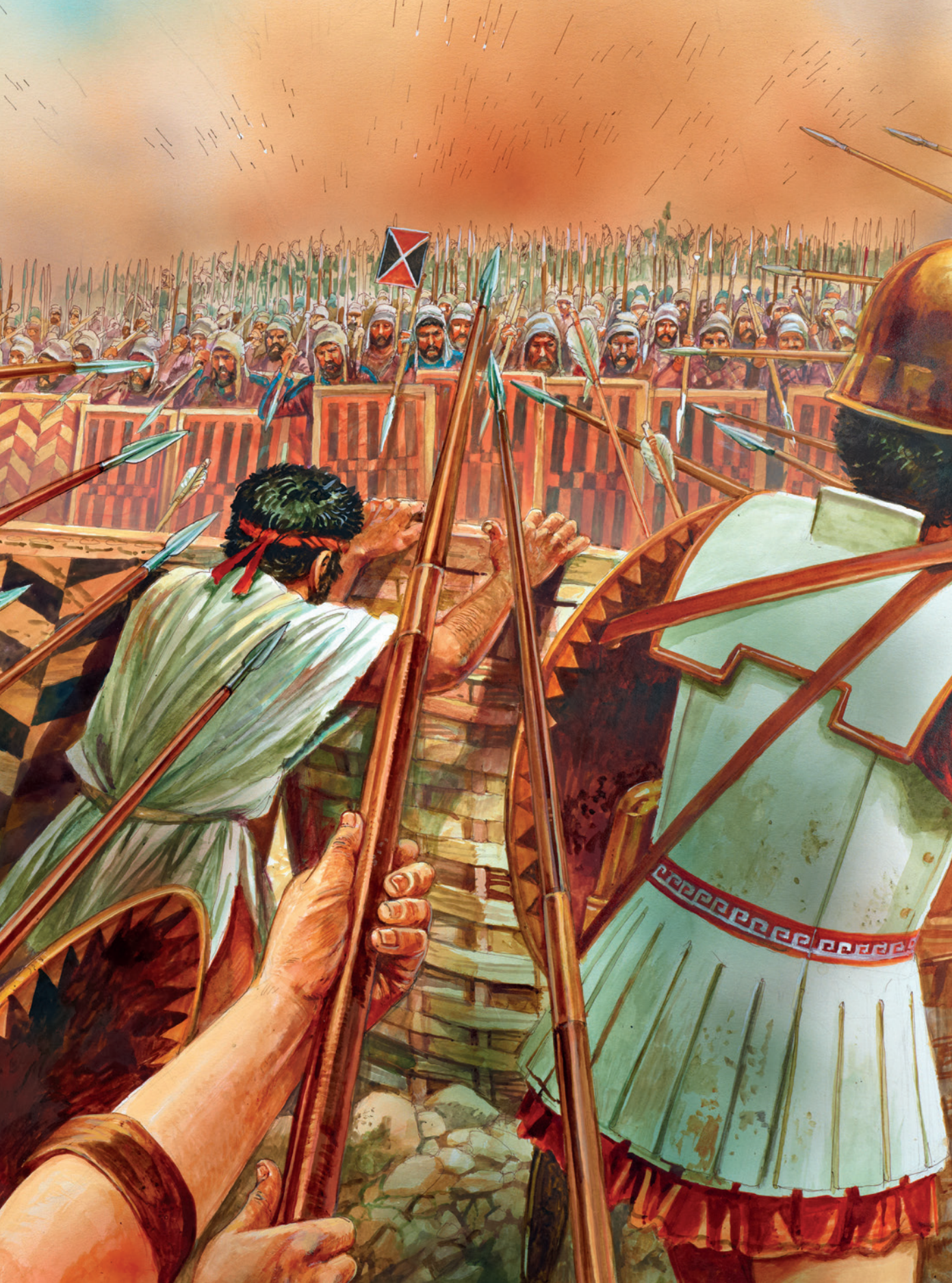
Arrian tells us (2.8.11) that Darius took up his position in the centre of the Persian line. In Arrian's array this would place him behind the Greek mercenaries. This seems highly unlikely; instead, Darius would have taken position behind his own troops – and the Immortals especially – regardless of how formidable the mercenaries were considered to be. According to Arrian, however, there were no traditionally equipped Persian infantry in the front line, only mercenaries and Cardaces. In this respect Curtius' account, which places Darius' position on the left wing, seems more plausible, and the 40,000 infantry of Darius would have been traditional Persian infantry. It is interesting that Arrian does have 60,000 Persian infantry (Curtius' 20,000 and 40,000) but odd that he insists they were all Cardaces.

Several coin types from the reigns of Philip II and Alexander the Great depict Macedonian helmets, armour and shield types. Note the cheek pieces on the helmet. (http://cgb.fr//Wikimedia/ CC BY-SA 3.0)

Curtius' account of the beginning of the battle (3.9.12) notes how the narrowness of the plain at the southern end limited the initial advance of the Macedonian phalanx to a double depth of 32 men. Alexander advanced his troops towards the Persians, who were arrayed on the far side of the Pinarus. As the infantry moved northwards, the plain widened, which allowed Alexander to manoeuvre the phalanx into the normal combat depth of 16 men, its progress covered by the Macedonian king's cavalry now deployed to the flanks. We can envisage the number of manoeuvres this halving of the phalanx line would have taken, but the phalangites would have been well prepared for all such manoeuvres. Arrian (2.10.1) records that there were frequent halts during Alexander's advance; these must have been to redress the Macedonian line after the multiple manoeuvres to bring it to its normal combat depth.

As the phalanx advanced, Darius moved most of his cavalry to his right wing, to oppose Parmenion's cavalry on the Macedonian left; Alexander sent the Thessalian cavalry to reinforce them. Arrian's account reveals the care Alexander took to protect his phalanx's flanks; he moved two squadrons of Companion cavalry to their right flank, and also detailed archers and lightly armed troops to protect it. Alexander's own mercenaries formed a second line behind the phalanx. Darius had positioned some 20,000 troops on a hill on Alexander's right flank on the Macedonian side of the river, but these were forced off by a sally of lightly armed troops and archers.

The various elements of Darius' army did not move from their initial deployments on the Persian side of the Pinarus as Alexander advanced and repositioned his troops. Darius' men must have been confident in their numbers, and the strength of their position and fortifications. Indeed, the presence of the fortifications along the river bank would have made it counter-intuitive for the Persians to advance from their positions.



The armies at Issus

The Macedonian phalanx has advanced northwards across the Pinarus River on the plain south of Issus (near modern-day Karşi in southern Turkey on the Mediterranean coast). Darius and his army stand on the northern bank of the Pinarus behind the palisades they have built on the easily accessible stretches of their river bank. Both armies fill the plain from the foothills to the sea. The men of the Macedonian phalanx have crossed the knee-deep river, knowing that they will have to pull down the palisades before they can come to grips with the Persian infantry beyond. The thousands of Persian infantry launch a steady hail of missiles, javelins and arrows into the Macedonian ranks. The Macedonians advance in echelon from the right. Each *taxis* is made up of 1,500 men, 16 ranks deep and 96 files across (the *taxis* is further divided into sub-units (*syntagmata*) of 256 men). The whole phalanx is composed of 9,000 men, 16 deep and 575 wide. Each man wields his *sarissa*, 5.5m long. The front five ranks' *sarissa* points extend towards the enemy, the rest held in readiness to be used. Fortunately for the Macedonians, the phalangites' *sarissae* can hold the enemy at bay while the front ranks pull the palisades down to allow the whole unit to advance. The Macedonians are protected by their shields and varieties of armour and helmets, but also by their *sarissae* – the five ranks behind the front five hold their *sarissae* at an angle and the six ranks behind them hold theirs erect, offering protection against missiles. Arrows and javelins are deflected by these raised spears and fall harmlessly into the river. The flanks of this 'pike-block' are protected by hoplites and lightly armed troops and cavalry beyond. The Persians are confident in their numbers, position and defences; the Macedonians – all veterans who have defeated the Persians before – are determined. Behind the palisades, the Persian troops wait, loosing arrows and javelins until they come face to face and hand to hand with the Macedonians. Each Persian troop has a thrusting spear and a rectangular wicker shield. Most wear tunics and trousers, although some have padded armour.

Alexander continued his advance. Diodorus tells us (17.33.3–4) that when the Macedonians came within missile range, the Persians unleashed such a barrage that arrows and javelins collided with one another in the air, rendering them ineffective; the Macedonians then raised their war-cry before advancing, only to have the Persian reply come back from 500,000 throats. Curtius has the same idea, but makes the Macedonian war-cry louder because it echoed off the hillsides (3.10.1). It is unclear whether Alexander opened the battle proper with a cavalry charge on the Macedonian right, or if the Persians began the battle with their own cavalry charge towards the Macedonian left flank. Given the reinforcement of the cavalry on the Persian right, the Persians opening the battle would seem more likely, while their infantry remained behind their palisades and waited for the Macedonian phalanx to enter the river. The cavalry engagement on the Macedonian left was hard fought, with neither side gaining the upper hand, but Alexander's charge on the right drove the Persians away once the two sides commenced hand-to-hand combat.

The Macedonian cavalry charge on the right had, however, opened up a gap on the right flank of the phalanx, which had entered the river to oppose the infantry opposite them. Arrian's account (2.10.5–6) has the Greek mercenaries oppose the phalanx where it had been most severely disrupted, and so he writes of the Greeks trying to push the Macedonians back into the river. Given my contention that the Greek mercenaries were, in fact, on the right wing of the Persian infantry force, the troops that would have come into contact with the rightmost *taxeis* of the phalanx would have been the Persians of Darius' 40,000-strong contingent.

Diodorus' account (17.34.9) is not particularly helpful at this point, stating that there was only a brief engagement between the Persian infantry and the Macedonian phalanx and explaining that when the Persian cavalry

The Oxus Treasure chariot, currently in the British Museum. Darius' chariot at Issus and Gaugamela would have resembled this and it probably would have been a visible target for the *taxeis* of the Macedonian phalanx which charged towards it with Alexander during both battles. Its design is borne out in the Alexander Mosaic as well. (Ealdgyth/Wikimedia/ CC BY-SA 3.0)

fled, the Persian infantry also routed. Despite the fierceness of this conflict, Arrian records (2.10.7) that only 120 notable Macedonians fell as the phalanx crossed the river. The *taxeis* of the Macedonian right wing were able to push their way out of the river, thereby allowing Alexander's next move, a swinging charge into the rear of the Persian centre and left.

In this reading of the battle, as the right *taxeis* of the phalanx fought Persian rather than Greek mercenary troops, we should ask what the leftmost elements of the phalanx were doing. They had to try to keep contact with the cavalry who were engaged on the Macedonian left, but they also had to stay in contact with the centre and right-hand elements of the phalanx. This would most probably have brought them into the river to face the Greek mercenaries stationed on the right wing of the Persian line and Aristomedes' infantry. Because our sources are silent on the activities of the leftmost *taxeis*, we may perhaps conclude that there was a hard-fought stalemate between the Macedonian phalanx in the river and the infantry manning the opposing bank: Thimodes' Greek mercenaries and the infantry of Aristomedes. Such a reading certainly explains Alexander's charge into the rear of the Greek mercenaries, as a move to relieve the pressure on his phalanx.

There was another explanation behind Alexander's charge, however. According to Diodorus (17.33.5), at the start of the battle, as soon as Alexander identified Darius, he led a cavalry charge towards the Persian king. This makes no sense if Darius was in the centre behind the (Greek) mercenary infantry. It makes much more sense, however, if Darius was indeed on the left wing of the Persian forces, because Alexander was leading the right wing of his own cavalry and Darius was on the Persian left with his cavalry and infantry. Diodorus' account does not help in identifying the location of Darius in the Persian battle line, but if the king was on the left wing it does make some sense of the other accounts. According to Arrian (2.11.4), Darius fled the scene in his chariot as soon as he saw that Alexander had separated the Persian left wing from the rest of the Persian army. Darius' flight makes

Now in the National Archaeological Museum, Naples, the Alexander Mosaic from the house of the Faun in Pompeii may have been a copy of an original painting by Philoxenus. It clearly shows the raised *sarissae* of the Macedonians and also reveals other details of armour and dress of both the Persians and the Macedonians. Depicting the flight of Darius at the battle of Issus, with the *sarissae* behind and Alexander approaching from the left, it conveys the combined-arms nature of Alexander's charge towards the Persian king; Darius is shown being almost surrounded before he fled, rather than fleeing immediately, as related by Arrian. (Lucas/Wikimedia/CC BY-SA 2.0)

more sense if he was part of the routed left wing rather than still in the centre and in possession of an army which outnumbered Alexander's own. Even if Alexander's charge was not directly towards Darius – he would conduct just such a charge at Gaugamela and so perhaps our sources have postulated a similar move at Issus – it could still have resulted in Darius' flight.

In the accounts of Alexander's charge towards Darius (which Arrian mentions only late in his narrative) it seems that the charge included Macedonian infantry – the foot-guard and possibly phalangites – as several aspects of the description reflect their tactics. The Alexander Mosaic from Pompeii, which depicts the battle of Issus and is based on an original 4th- or 3rd-century BC painting by Philoxenus (Pliny *Natural History* 35.36.110), certainly does show the spears of the Macedonian phalanx close by Darius as he flees. In what is one of the most remarkable accounts of close combat in the ancient world, Curtius describes (3.11.5–6) the bloodshed once swords were drawn and used in desperate attempts to slay the enemy in front – the only way to win a chance to move ahead. For the wounded, pushed forward by their own men from behind while simultaneously being pushed back by the enemy in front, there was simply no way to escape the brutality of close-quarter battle.

According to Arrian (2.11.4), Darius fled from the centre when his left wing was defeated; an action which seems both cowardly and inexplicable. Arrian includes Alexander's pursuit of the fleeing Darius only after he had charged into the remaining mercenary infantry; he then recounts (2.11.6–7) that Alexander had begun his pursuit as soon as he saw Darius fleeing, but turned back to defeat the mercenaries and Persian cavalry. If the Macedonian phalanx was successful on the right but being held by Aristomedes' infantry and the Greek mercenaries in the centre and left, then it was into these men that Alexander now charged as they posed a threat to his phalanx. Parmenion's cavalry on the left wing had held the Persian charge (Arrian 2.11.2), but when Darius fled, the Persian troops facing Parmenion also routed. We are told that Darius fled as far as possible in

Detail of a 4th-century BC black-figure cup attributed to the artist Oltos. Once again we see that the details of Persian dress and equipment had not changed from the 5th century BC into the next century. (DEA PICTURE LIBRARY/De Agostini/Getty Images)

his chariot, and then continued on horseback. Alexander continued his pursuit until nightfall – or midnight, according to Diodorus (17.37.2).

As with the Granicus, there is a glaring discrepancy between the reported Persian and Macedonian casualties at Issus. Arrian provides us with an anecdote of a ravine filled with Persian bodies and lists several prominent Persian dead as well as 100,000 casualties, including over 10,000 cavalry (2.11.8). This number is repeated in nearly all our sources; Plutarch (*Alexander* 20.10) and Curtius (3.11.27) make reference to the 110,000 Persian dead, as does Diodorus (17.34.6). Only Justin (11.9.10) differs, stating that 61,000 Persian infantry were killed and 40,000 taken prisoner; 10,000 cavalry fell, which means that Justin's account still arrives at a total of 111,000.

Justin and Curtius provide us with the disproportionate Macedonian casualties of 504 wounded, with 32 infantry deaths, and 150 cavalry (Curtius 3.11.27). Justin (11.9.10) records 130 infantry and 150 cavalry deaths. These numbers are unbelievable, prompting one incredulous editor, John Yardley, to emend Curtius' numbers to read 4,500 wounded and 302 missing, but keeping the 150 cavalry deaths the same. Modern commentators may be sceptical about the low Macedonian casualty figures reported, but it is worth remembering that Alexander could not have hoped to continue with his conquest had he sustained the higher numbers of casualties suggested; the relatively low figure of 4,500 wounded would represent almost half of Alexander's total phalanx strength.

Gaugamela

331 BC

BACKGROUND TO BATTLE

After Issus, Alexander captured Darius' camp, including the king's mother, wife and three children. Darius had sent his treasury to Damascus, but that was soon captured too. The magnitude of the defeat inflicted on Darius at Issus is hard to overstate – he had seemingly lost everything – yet he still ruled an empire of almost immeasurable resources and capable of providing him with an army larger than the one he had fielded at Issus. Arrian tells us (2.13.1) that only 4,000 troops escaped with Darius, but many more must have made their own way back to their homelands. It is also probable that Darius' reserve fled when their king did, and so he may have still retained a substantial number of troops. The army which Darius would bring to Gaugamela certainly included many troops from the same regions as the army he had commanded at Issus.

Darius did not simply rely on trying again with the troops he had at Issus, however. He gathered more and more varieties of troops, including 200 scythed chariots and 15 elephants from India. He recruited troops from the breadth of his (remaining) empire and from beyond it, making alliances with various peoples and regimes in Scythia and India, which provided him with both cavalry and infantry.

Alexander did not pursue Darius back to the Persian homelands immediately after Issus. Instead, he continued down the edge of the Mediterranean, securing the coastal territories of what would become his rear when he decided to march on Babylon and Susa. There were still Persian commanders in the Aegean who could cause Alexander problems. Alexander marched south, appointed satraps and received the surrender of kings subject to Persia. Darius sent a letter demanding Alexander meet his

A Persian chariot from the Palace of Darius at Persepolis. The scythed chariots encountered by the Macedonian phalanx at Gaugamela would have followed this design. Mostafameraji/Wikimedia/ CC BY-SA 4.0)

envoys, but Alexander cited the wrongs done to Greece in the 5th century BC in reply. Alexander was required to besiege Tyre, which refused to surrender to him (Arrian 2.16.7–24.6). The siege of Tyre lasted from January to July 332 BC, but Alexander was eventually successful and enslaved 30,000 of the population. He suffered several setbacks during the siege, but his persistence, planning and determination sent a clear message to any other city which might have considered resisting him. He also built a navy during the siege, thus securing the sea coast of his new empire.

Darius sent another envoy, this time offering Alexander half of his empire, but Alexander refused. Gaza also required a siege, but was taken by the Macedonians in October 332 BC – and as another message, Alexander enslaved the women and children. Alexander next secured all of Egypt, which welcomed him. He installed garrisons and also won over the Egyptians with his attitude to their gods. He travelled to the Egyptian capital of Memphis and undertook the long march to the Shrine of Ammon. In Egypt Alexander received more reinforcements from Greece (Arrian 3.5.1), this implying a constant communication between Alexander and Greece (and presumably the rest of his garrisons). He was kept appraised of events in Greece, such as a revolt of the Peloponnesians in 331 BC with which he had to deal (Arrian 3.6.3). He sent his Aegean fleet commander, Amphoterus, with assistance from the Phoenicians and Cyprians, to suppress the revolt.

Having secured the foundations of his power in Egypt, Alexander began to march back the way he had come in the spring of 331 BC. He marched to Phoenicia and then to Thapsacus on the Euphrates River, which he crossed unopposed in late July even though Darius had appointed Mazaeus to guard the crossing. Mazaeus fled as Alexander approached, possibly in order to draw Alexander on further. Alexander marched north-east between the Euphrates and the Tigris River, intending to cross the latter, and did not turn south-east towards Babylon. Persian troops captured along this route advised Alexander that Darius was waiting for him beyond the Tigris, intending to bar his crossing. This seems to have been a deliberate ploy of Darius' to let Alexander

ABOVE LEFT
The royal panoply of Philip II from Aigai (modern-day Vergina) in Greece, discovered in 1977. We can see a decorated Illyrian helmet as well as swords and (probably) cavalry spearheads. (Rjdeadly/Wikimedia/ CC BY-SA 4.0)

ABOVE RIGHT
This Boeotian helmet, of the style usually worn by Macedonian cavalry, was found in the Tigris River in Iran. Dated to the 4th century BC, it is now in the Ashmolean Museum, Oxford. (Ashmolean Museum/ Heritage Images/Getty Images)

OPPOSITE
A fine example of an Illyrian helmet from Timis, Romania, similar to that in the Macedonian royal tomb at Aigai. The decoration of the cheek pieces can be discerned. (CristianChirita/ Wikimedia/CC BY-SA 3.0)

know where he was, waiting for Alexander to come to him. The captives also told Alexander that the Persian army was much larger than that at Issus, information perhaps intended to intimidate Alexander (Arrian 3.7.1–4). Alexander immediately made for the Tigris and found that Darius was not opposing his crossing, nor was there any force there to fight the invaders. Again, it seems likely that such ruses were intended to draw Alexander further on, towards the ground Darius had already prepared for battle.

There was an eclipse of the moon soon after the Tigris crossing, and approximately eleven days before the battle of Gaugamela (Arrian 3.7.6; Curtius 4.10.2; Plutarch, *Alexander* 31.8). This event has been dated to 20/21 Boedromion (September), but the exact date of the battle is still debated. Placing the battle in the month of Pyanepsion (our October/ November), Arrian tells us (3.9.2) that the armies advanced to within 10km of each other, but could not see one another because of the intervening hills (probably the foothills to the west or south-west of the battle site). Alexander sighted the Persians, already in battle formation, from 5km away and camped where he was for the night.

Arrian tells us (3.11.1–2) that the Persians stayed in their battle array overnight because they had no camp and feared a night attack – a course of action Parmenion had suggested and which was supported by the other generals, but which was rejected by Alexander (Arrian 3.10.1; Curtius 4.13.3–10). Diodorus states (17.56.1–2) that Alexander lay awake throughout much of the night before the battle, working out how best to counter the superior Persian numbers. We are told that Alexander fell asleep around sunrise and could not be woken, thus causing a late start to Macedonian deployment. By contrast, Plutarch (*Alexander* 32.1) tells us that Alexander slept more soundly than usual. Curtius (4.13.22–25) portrays Alexander as being carefree and confident, because he had devised a successful plan before falling asleep. There are several factors in the battle narratives which follow that suggest just what plans Alexander had devised.

MAP KEY

1 Fearing a night attack, the Persians await the Macedonians in their battle array (left to right): Bessus' Bactrian cavalry with the Dahae and Arachosians (**A**); Persian contingents of mixed cavalry and infantry (**B**); Susian and Cadusian infantry (**C**); Darius, with his kinsmen and the Immortals (**D**) plus Indian troops, Carians and Mardian archers (**E**) – either side of these infantry may have been Greek mercenaries; Albanians and Sacesinians (**F**), Topeirians (**G**); Hyrcanians (**H**); Mazaeus, with Parthyaeans and Sacae (**I**); troops from Hollow Syria and Mesopotamia (**J**). Each of these contingents included infantry and cavalry. Behind Darius were troops from the Red Sea plus the Uxians, Babylonians and Sittacenians (**K**). In front of the Persian left wing were Scythian cavalry (**L**), 1,000 Bactrians (**M**) and 100 scythed chariots (**N**). In front of Darius were 50 chariots and the 15 Indian elephants (**O**). To the right of these were another 50 scythed chariots and the Armenian and Cappadocian cavalry (**P**).

2 Alexander advances with his troops in battle array, his wings staggered obliquely back to avoid being outflanked. On the Macedonian right are Menidas' mercenary cavalry (**Q**), the 'old mercenaries' (**R**) and lightly armed Agrianians and Macedonian archers (**S**); in front of these are the Paeonians and lancers (**T**). To their left, Alexander leads the Companions and the Royal Squadron (**U**); lightly armed troops (**V**) are stationed in front of the Companions, and to their left are Nicanor's hypaspists (**W**). The phalanx includes the *taxeis* of Coenus (**X**), Perdiccas (**Y**), Meleager (**Z**), Polyperchon (**AA**), Philip or Simmias (**BB**) and Craterus (**CC**). To their left are the Peloponnesian and Achaean cavalry (**DD**), then those from Phthiotis and Malis (**EE**), the Locrians and Phocians (**FF**) and the Thessalians (**GG**); to the left of the Thessalians is a contingent of Cretan archers and Alexander's Greek mercenaries (**HH**). A second, rear, phalanx (**II**) made up of mercenaries could plug gaps in the Macedonian line as they appeared.

3 Alexander extends his cavalry and infantry to the right as Bessus' cavalry on the Persian left wing move to outflank Alexander on the Macedonian right wing.

4 The Persian scythed chariots charge the phalanx, but are thwarted in various ways according to Alexander's orders. The Persian infantry move forward behind the chariots and engage the phalanx.

5 Menidas' mercenary cavalry on the Macedonian right wing counter-charge Bessus' cavalry on the Persian left wing. Meanwhile the cavalry of the Persian right wing charge Parmenion's cavalry of the Macedonian left wing, attempting to outflank them.

6 The Persian attempt to outflank the Macedonian right wing creates a gap between the cavalry and infantry of the Persian formation, exposing Darius' position on the left of the Persian infantry line. Alexander, leading the Companions and accompanied by the hypaspists, charges for the gap.

7 The Companions, and *taxeis* of the phalanx advancing obliquely on the right, exert pressure on the infantry and cavalry surrounding Darius. Possibly following a rumour of Darius' death, the troops of the Persian left wing crumple and begin to flee. The cavalry on the Persian left is finally defeated and flees the field.

8 Darius exits the field accompanied by most of his wing, pursued by Alexander, the Companions, the Macedonian mercenary cavalry, the hypaspists and the phalanx.

9 The phalanx's advance has stretched the Macedonian line, creating a gap between Simmias and Craterus' *taxeis*. The Indian and Persian cavalry break through the gap and make their way on to the Macedonian baggage train.

10 A section of the second line – the rear phalanx – turns about and defeats the Persian and Indian cavalry among the Macedonian baggage train. Parmenion sends word to Alexander that he needs assistance on the Macedonian left wing.

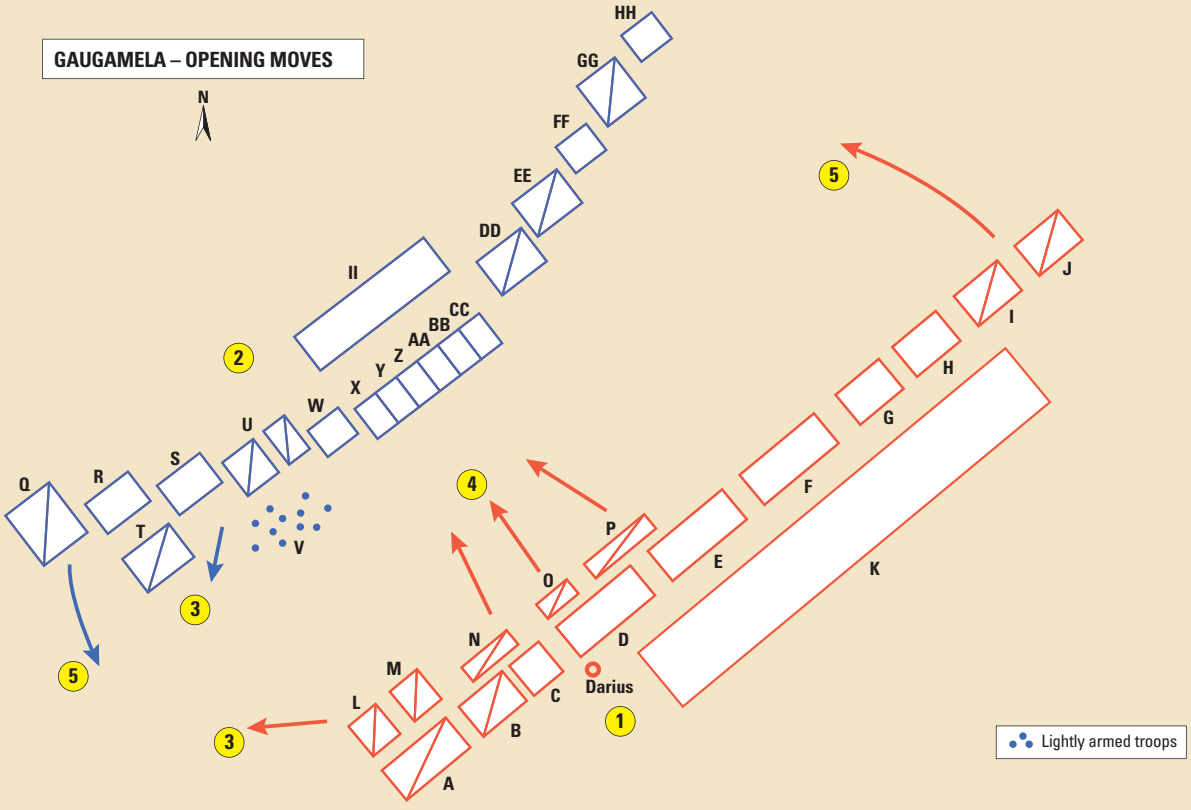
11 Alexander turns back from his pursuit to assist Parmenion. En route, the Macedonian king encounters and engages fleeing enemy cavalry.

12 Parmenion is finally victorious on the Macedonian left wing. A general rout of all the Persian forces ensues.

Battlefield environment

Given what had happened at both the Granicus and Issus – battles which involved the Persians putting their faith partially in rivers for defence – Darius refrained from preventing Alexander crossing either the Euphrates or the Tigris. The field of Gaugamela, located north of the Tigris and north of ancient Nineveh (modern-day Mosul), was chosen by Darius as being ideal for his chariots and his vast numbers of cavalry to outmanoeuvre and outflank the inferior numbers of the Macedonians. Unlike at Issus, there would be no foothills or sea to prevent Darius surrounding Alexander's smaller force. A vast plain was selected and especially prepared, being further flattened and cleared of any debris that might hinder Darius' chariots and cavalry.

The temperature would not have been sweltering in late September, but conditions would have been warm and dusty. The position chosen beyond the Tigris may also have been to draw the Macedonians away from a nearby water supply. Diodorus mentions Darius' desire to have a battle near Nineveh (17.53.4), which may have led to an identification of the battlefield closer to the city. A battlefield further north of Nineveh seems more likely, though, if Darius wanted the Macedonians to be deprived of water.


GAUGAMELA – OPENING MOVES
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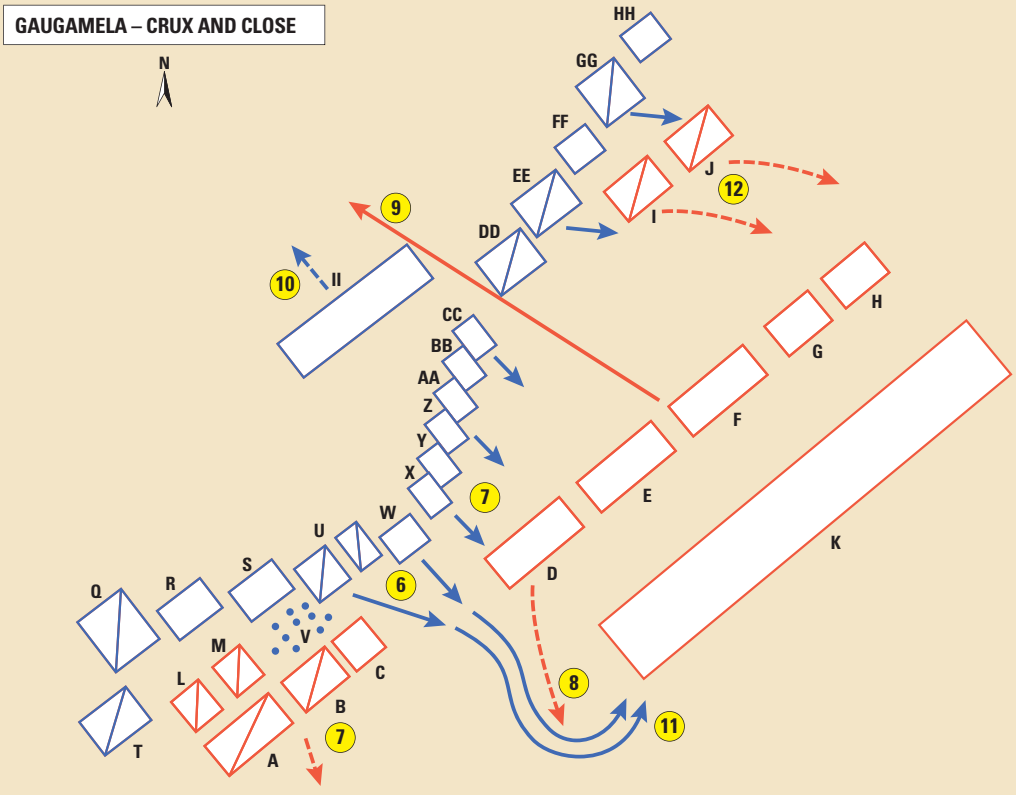
Lightly armed troops


GAUGAMELA – CRUX AND CLOSE
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INTO COMBAT

According to Arrian (3.11.3–7), on the Persian left wing (left to right) were: the Bactrian cavalry with the Dahae and Arachosians; Persian contingents of mixed cavalry and infantry; the Susian infantry and then the Cadusian infantry. In the centre were Darius with his kinsmen and the Apple Bearers (the 10,000 Immortals) along with the Indian troops, Carians and Mardian archers; either side of Darius's infantry were the Greek mercenaries, as they were considered the only troops capable of standing up to the Macedonian phalanx. On the right wing (left to right) were the Albanians and Sacesinians, then the Topeirians and Hyrcanians, the Parthyaeans and Sacae (a Scythian people), and finally troops from Hollow Syria and Mesopotamia. Behind Darius were troops from the Uxians, Babylonians, the Red Sea and the Sittacenians. In front of the Persian left wing were Scythian cavalry, 1,000 Bactrians and 100 scythed chariots. In front of Darius were 50 chariots and the 15 Indian elephants. In advance of the Persian right wing (or, more likely, on the right wing of the chariots) were another 50 scythed chariots and the Armenian and Cappadocian cavalry. This array is very detailed, and bewildering in its variety. Arrian also reports that his source, Aristobulus, stated that the Persian battle array came from a captured document. Despite a captured army list there is still exaggeration, however, with Arrian giving us a total of 40,000 cavalry and one million infantry. The existence of Greek mercenaries at Gaugamela is not borne out in the other sources; Diodorus and Curtius do not mention any Greek mercenaries at all.

Curtius (4.12.13) offers a much smaller Persian total of 45,000 cavalry and 200,000 infantry; what is more, he gives us a different array, and yet in some cases provides more details of numbers (4.12.6–11) than does Arrian. Curtius (4.12.6–7) sets out a cavalry contingent, left to right, as follows: 1,000 Bactrians; 1,000 Dahae; 4,000 Arachosians and Susians; 100 scythed chariots; 8,000 Bactrian cavalry; and 2,000 Massagetae. Curtius tells us that Darius arranged for each nation's cavalry contingent to be joined by infantry of the same nation. In this deployment, Darius seems to have been copying Alexander's tactic of advancing with both cavalry and infantry as he had done at the Granicus and at Issus (and as the Macedonian king would do at Gaugamela too).

To the right of these forces in the Persian line came the infantry of the Persians, Mardians and Sogdians, then that of other nations; 50 chariots followed that, and behind them were Indians and other men from the Red Sea, followed by another group of scythed chariots and the mercenaries. To their right came the lesser Armenians, Babylonians, Belitae, and men of the Cossaean Mountains, the exiles from Euboea (who had been transplanted from Greece in 490 BC), and then the Phrygians, Cataonians and Parthyaei, a Scythian tribe. We are told much less detail of the Persian right wing, consisting of Armenians, Cappadocians, Syrians and Medians plus 50 chariots. Indeed, starting from the left wing where there is precise detail, Curtius' account gets less and less detailed the further along he goes, perhaps implying that his source was stationed on the Macedonian right or on the Persian left itself. There are similarities with Arrian's array, but enough differences to cause some historians concern.

The pediment of the Alexander Sarcophagus provides more details of Macedonian armour and gives some idea of the variety of colours of the *exomis*, the Macedonian tunic. (De Agostini Picture Library/ De Agostini/Getty Images)

While Diodorus gives us a precise Macedonian battle line, naming commanders and the provincial origins of the phalanx (17.57.2–3), for the Persians he simply states that they were organized into national contingents and that Darius placed himself opposite Alexander (17.58.1). Diodorus states that the Persian army at Gaugamela included 800,000 infantry and 200,000 cavalry, and specifically mentions the 200 scythed chariots (17.53.2), describing their curved blades and their effect as a terror-weapon. Justin (11.12.5) mentions 400,000 infantry and 100,000 cavalry, while Plutarch (Alexander 31.1) has one million men on the Persian side. The closest any of these sources comes to satisfying the modern desire to reduce numbers to a reasonable total is Curtius. Some modern commentators reduce these numbers further still; conversely, the numbers for Alexander's army are hardly ever questioned.

Diodorus and Curtius both state that Darius placed himself opposite Alexander in the initial deployment, rather than in the Persian centre (Diodorus 17.58.1 and 17.59.2; Curtius 4.14.8). Modern accounts of the battle usually reject this position and place Darius in the centre of his line. There is, however, every reason to accept it – it is more than probable that Darius placed himself on the left wing opposite Alexander at Issus, and it was as much in the Persian king's interests to come to grips and defeat Alexander as it was for the Macedonian king to engage his opponent. If Darius could kill or defeat Alexander, the invasion would end with him. At Gaugamela, Darius was probably stationed on the left wing, behind his Immortals who were stationed on the leftmost edge of the Persian infantry formation.

For the Macedonians, Diodorus provides us with some of the best information we possess on the phalanx in his dispositions for Gaugamela (17.57.2–3), not only listing the place of each *taxis* in the line, but also naming the Macedonian province from which each was recruited. His order of battle for the Macedonian right wing (right to left) is as follows: the Royal Squadron and the eight squadrons of Companions; behind these were stationed the hypaspists, led by Nicanor. Next to the hypaspists were Coenus' *taxis* from Elimiotis, Perdiccas' *taxis* of the Orestae and the Lyncestae, Meleager's *taxis*, Polyperchon's *taxis* of Stymphaeans, the *taxis* of Philip son of Balacrus, and then Craterus' *taxis*. Diodorus continues with a detailed cavalry deployment (17.57.3–6): Peloponnesian and Achaean cavalry and then those from Phthiotis and Malis, then the Locrians and Phocians followed by the

Thessalians; on the flank of the Thessalians were a contingent of Cretan archers and Alexander's Greek mercenaries.

Curtius' Macedonian array (4.13.26–29) corresponds to that of Diodorus, although Curtius omits Meleager's *taxis*. The Macedonian array set out by Arrian (3.11.9–10) also echoes that of Diodorus, although Arrian provides less detail about the Macedonian infantry; the only significant difference is that Arrian has Simmias commanding the *taxis* which Diodorus ascribes to Philip. However, Arrian has more detail on the commanders of each cavalry squadron. Arrian also adds the detail that Alexander added a second line, a rear phalanx, behind his infantry (as he had at Issus) so that his phalanx could face both ways if it was surrounded; and given the vastness of the plain and the overwhelming Persian numbers, this was a distinct possibility. In total we are told (Arrian 3.12.5) that Alexander had 7,000 cavalry and 40,000 infantry and so even taking Curtius' low numbers for Darius' forces, he was outnumbered 5:1.

Archers and lightly armed troops were placed in front of the Macedonian cavalry on the right wing and a division of mercenary cavalry was also stationed there to counter any attempt to outflank the Macedonian line. A similar formation was made on the left wing. At the very centre of the Macedonian line and central to Alexander's battle plan were the 9,000 men of the phalanx.

The purpose of these dispositions was to avoid the very real possibility of the Macedonians being outflanked or even encircled. Diodorus (17.57.5) mentions Alexander keeping his wings back so as not to be enveloped, this tactic doubtless being among several the Macedonian king developed during the night before the battle. The most exposed section of Alexander's force then was the phalanx itself, set at the point of what we can imagine as a giant 'U' shape, with the foremost part of the curve closest to the Persians.

It would seem that both armies began to advance towards each other at the same moment, the attack heralded by the sound of trumpets and war-cries (Diodorus 17.58.1). Alexander began to move obliquely towards the right with his Royal Squadron and Companions, possibly to get clear of the ground that had been levelled for the chariots (Arrian 3.13.1; Curtius 4.15.1). The Persian cavalry, as Alexander had expected, attempted to outflank this move, and a fierce cavalry battle began on the extreme Macedonian right flank, with the Macedonians eventually prevailing. Diodorus (17.58.2) has the battle begin with a scythed-chariot charge towards the phalanx, while Arrian (3.13.5) records the chariot charge occurring after the cavalry action had begun.

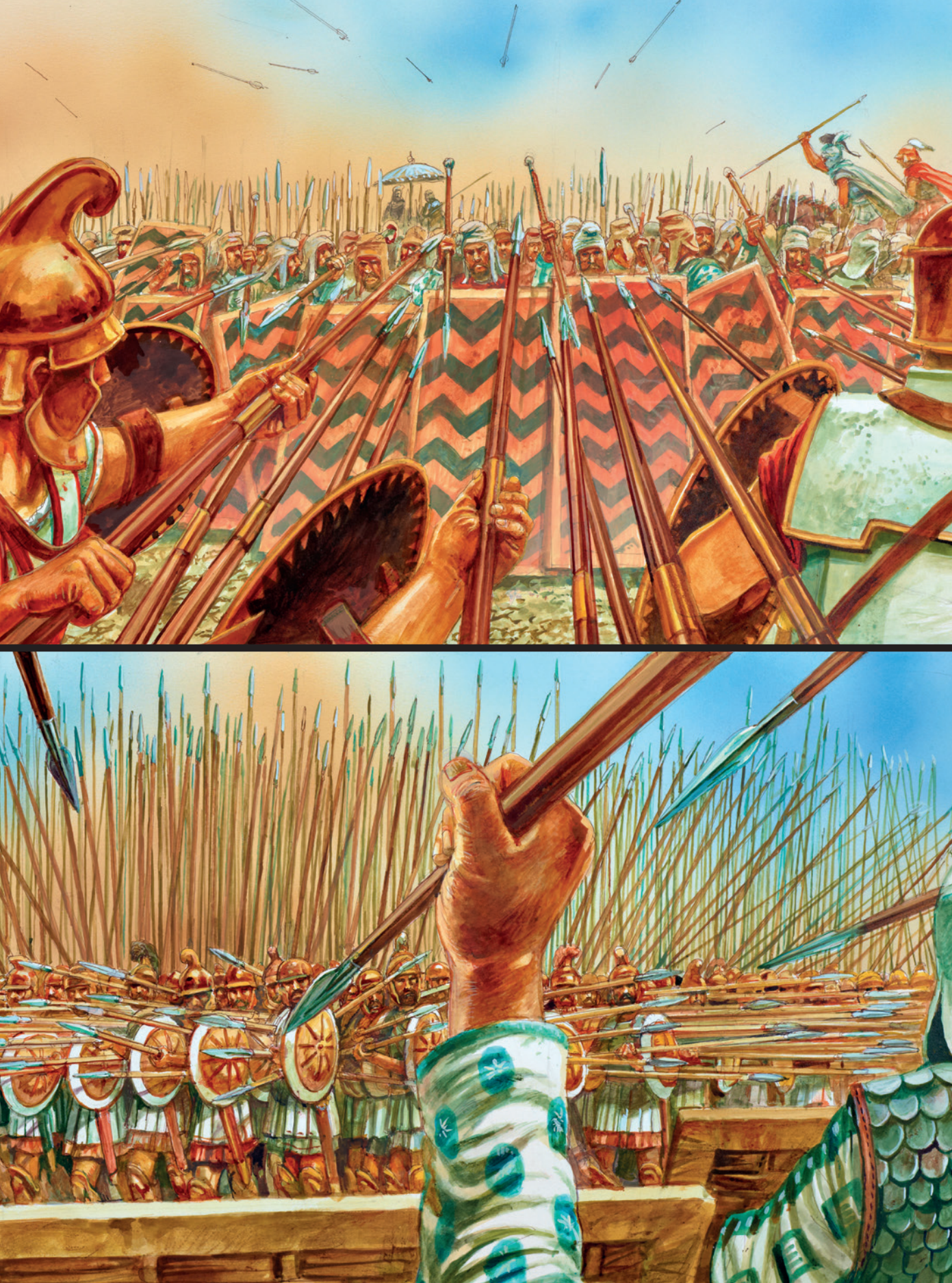
Diodorus tells us (17.58.3) that Alexander ordered the Macedonian phalanx to lock shields (*synaspizouses*) as a defence against the Persian scythed chariots. This was the tightest formation of the Macedonian phalanx drill and one in which each man only occupied half a metre of space, meaning the entire phalanx could condense into a front little more than 250m wide. Alexander also told his men to beat their shields and thus frighten the charioteers' horses. When the chariots attacked, the men of the phalanx locked shields as instructed and beat upon them. Several chariots shied away and turned towards their own ranks, while others were channelled through gaps opened up in each *taxis* by the men of the phalanx. Diodorus' account

Two Persian spearmen from the Palace of Darius at Persepolis. The helmet type shown here is one of five different types worn by Persian troops displayed in the reliefs from the palace. The meticulous care shown in depicting the hair and beards also seems to be borne out in the sources that the units of the Immortals wore more jewellery than normal units. (Keyvan Mahmudi/ Wikimedia/CC BY-SA 3.0)

conveys the remarkable training and drill of the Macedonian phalanx, as in each case one *syntagma* would have to counter-march into the ranks of the next and thus create the gap mentioned (thus in each *taxis* there would be three gaps). His account also reveals another tactical solution (in addition to locking shields) which Alexander had conceived during the night; the drill for the manoeuvres themselves already existed, and it was simply a matter of deciding which manoeuvres to order and when. Some chariots impaled themselves on the spear-tips of the Macedonian ranks while others were brought down with javelins and arrows by the lightly armed troops on the phalanx's flanks.

The fact that Diodorus describes several Macedonian solutions to the tactical challenges posed by the Persian chariots implies that the commanders of each *taxis* may have deployed a different tactic against the chariots as they saw fit, or that Alexander suggested several solutions. Arrian also tells us (3.13.6) that the phalanx was ordered to create the gaps in their line where the chariots attacked. Behind the chariots Darius' infantry were advancing towards the phalanx. Missiles rained down on the men of the phalanx and the Persian Apple Bearers, Mardi and Cossaei, Indians and household troops came against them (Diodorus 17.59.3–4).

On the Persian right wing, Mazaeus sent a cavalry contingent to engage the Macedonian left wing under the command of Parmenion. The overwhelming Persian numbers should have made envelopment straightforward, but the Macedonian cavalry on that wing, especially the Thessalians, managed to withstand the Persian assault. On the Persian left wing their superior cavalry numbers were telling and the Macedonians were forced back. Arrian's account (3.14.2) has the Persian attempts to outflank the extending Macedonian right wing create a gap between the Persian cavalry and infantry: seeing this, Alexander turned and led his Companion cavalry and the rightmost men of the phalanx in a charge towards the gap and their quarry – Darius – with the rest of the phalanx close behind.



In the ranks at Gaugamela

Macedonian view: In the initial troop dispositions and manoeuvres at Gaugamela, Alexander placed the phalanx at the apex of a formation where both wings bent back to avoid the very real possibility of the Macedonians being outflanked. At the outset of the battle Alexander, with his cavalry, moved towards the right, prompting the troops of the Persian left flank to match his manoeuvre and even attempt to outflank the Macedonian troops on the right. The phalangites' superior discipline and training allowed them to see off attacks by Persian scythed chariots. Then, when a gap had been created between the units on the Persian left, Alexander wheeled and charged towards Darius through it, accompanied by the nearest infantry and with the troops of the Macedonian phalanx close behind. Here we see the phalanx close in on the Persians on the left of their formation, those directly in front of their king, namely the elite Persian Immortals. The Macedonians advance just as Alexander makes his way towards Darius in his chariot. The serried ranks of *sarissae* extend towards the lighter-armed Persian infantry. The variously helmeted and armoured Macedonian phalangites of Coenus' *taxis* from Elimiotis (the rightmost *syntagma* of the phalanx) can see the progress of their king towards Darius and they press their attack towards the Immortals just as the Persians become aware of the threat to Darius behind them.

Persian view: The Persian Apple Bearers or Immortals stand behind their wicker shields, spears poised to face the advancing Macedonian phalanx. Selected from the bravest of the Persians and armed in a similar fashion to the rest of the Persian infantry, the Immortals have been stationed in front of their king's chariot and they stand at the left of the Persian infantry formation. At the start of the battle Alexander moved towards the Persian left and the Persian cavalry pursued him. The archers within the Persian ranks kept up a steady rain of arrows on the Macedonians, although the long spears of the phalanx rendered the projectiles mostly ineffective. When a gap formed between the Immortals and the other units to their left, Alexander turned and charged for the gap and, at that point, the Macedonian phalanx began its advance towards the units of the Immortals. The Macedonians had already shown that their arms and armour were superior to the Persians', but the Immortals stood ready to sacrifice their lives for their king. Their bravery and resolve were disturbed by the unexpected commotion of Alexander and his Companion cavalry, appearing behind them and threatening Darius' life. When Darius fled the battle, it was the duty of the Immortals to exit with him and to protect him in his flight – if they could.

This detail of the Alexander Sarcophagus shows the tunic, trousers and headgear of two Persian soldiers and a Macedonian cavalryman with Boeotian helmet. Note the shield with curve missing and also the bow of the archer above, which has been sculpted in relief. (CM Dixon/ Heritage Images/Getty Images)

Arrian (3.14.3) has the fearful Darius flee at this determined assault by Alexander. Those reconstructions which place Darius in the centre of the Persian line have Alexander's charge travel too far. By placing Darius on the left flank instead – which would locate the Persian king's Immortals in the leftmost part of the Persian infantry formation – Alexander's charge for the gap in the line and Darius' flight resulted in a shorter charge and one which could be supported by the Macedonian phalanx, something not possible if the phalanx was facing the Persian mercenaries further to the left. Diodorus, more convincingly (17.60.3), has Darius fight on until the troops around him disintegrate on a false rumour that Darius himself has fallen. (Diodorus' anecdote of Alexander hurling a javelin and missing Darius but hitting his charioteer – which set off the rumour of Darius' death – is dramatic, but probably fiction.)

Darius' flight caused a rout of the Persian left wing, with Alexander and his cavalry setting off in pursuit of the fleeing troops. Given the size of the Persian army, however, it is no surprise that the Persian right wing remained ignorant of Darius' fate. We gain further insight into the tactical methods of the phalanx at this point, as Arrian records (3.14.4–5) that Simmias' *taxis* of the phalanx had to halt and fight where it was because the Macedonian left was in difficulties owing to the Persian cavalry assault in that sector. A gap developed between Simmias' *taxis* and, presumably, Craterus' *taxis* and was exploited by a Persian and Indian cavalry charge. This *taxis* stopping and fighting where it was also reinforces the idea that a single *taxis* of the phalanx could operate independently as a 1,500-strong phalanx in miniature. The Persian and Indian cavalry charge also made its way through the second line of mercenaries behind the phalanx; this second line of infantry turned and pursued the Persian and Indian cavalry, defeating them at the baggage train.

Now in the National Archaeological Museum of Florence, this sarcophagus from Tarquinia in Italy and dated to the 4th century BC shows a warrior in typical 'Macedonian' wear with Phrygian helmet, *linothorax* armour and greaves. (DEA/ G. DAGLI ORTI/Getty Images)

Meanwhile, the Persian cavalry on the right began to encircle Parmenion's cavalry wing on the Macedonian left. Parmenion sent a dispatch rider to Alexander, calling him back from the pursuit of Darius to assist (Arrian 3.15.1; Diodorus 17.60.7). Plutarch states that Parmenion's message was sent when the baggage train was attacked and then repeated during the pursuit (*Alexander* 32.5–6 and 33.10–11). Alexander turned and made his way back to the Persian right wing, fighting fleeing Persian cavalry to get there. This relieved the pressure and the Macedonians were victorious across the field. According to Diodorus (17.60.8), the messengers did not find Alexander and Parmenion fought on to win alone on the Macedonian left. Later tradition seems to have robbed Parmenion of such credit at Gaugamela – all with regard to Parmenion's falling out with Alexander and his subsequent assassination in 330 BC.

The sources do not focus on the exploits of the phalanx at Gaugamela, instead recounting the (more glamorous) feats of Alexander's cavalry. Nevertheless, it is clear that the Macedonian phalangites were involved from the outset of the battle and that they were in the thick of the action for most of it. They certainly held the centre of the Macedonian line against the Persian infantry and withstood (for the most part) attacks from chariots and cavalry too (we do not hear of the 15 elephants, which were captured after the battle). The defensive capabilities of the Macedonian phalanx are made clear, as well as its offensive power when called upon to attack.

The reported casualties are once again disproportionate – Arrian (3.15.6) has 100 men killed (and over 1,000 horses) among the Macedonians, these casualties mostly being suffered during the pursuit of Darius, with the Persians sustaining 300,000 casualties. Diodorus (17.61.3) records 90,000 Persian casualties and 500 Macedonians, with considerable numbers of Macedonian wounded. Curtius (4.16.26) has only 300 Macedonian dead and 40,000 Persians and the Oxyrhynchus Historian (1798) has 1,000 Macedonian infantry and 200 cavalry casualties, with 53,000 Persians. None of these numbers is satisfying, but it is clear that the Macedonians had won a remarkable victory.

Analysis

MACEDONIAN EFFECTIVENESS

The three battles explored in this study offer insights into the capabilities, flexibility and versatility of the Macedonian phalanx. In these engagements, however, the workings of the phalanx in our historical narratives are only implied. We get details of deployment and then, if we are lucky, a mention of the exploits of an individual *taxis* or the phalanx as a whole. Sometimes, the phalanx is forgotten after battle is joined and our narratives concentrate wholly on the exploits of the cavalry. Alexander and his commanders knew that none of these exploits would have been possible without the phalanx operating at the centre of the army, however. At the Hyphasis in 326 BC it would be the phalangites who refused to march further east and it was they who mutinied at Opis in 324 BC, their power clear in that Alexander could not continue without them, no matter how many other types of troops he had.

It is only from a later age that we gain any insights into the actual manoeuvres of the phalanx, through the *Tactica*; these manuals suggest how complex the manoeuvres of the phalanx could be. In the surviving sources these manoeuvres seem to have been misunderstood – at Issus, the constant stopping of the Macedonian line as it advanced must have been to redress itself after, first, deploying in double depth and then spreading out as it advanced northwards along the plain and redeploying to the normal depth of 16 men. We get none of this in the historical narrative, just the stops and pauses. This is not helped by the fact that Arrian, one of the authors of the three surviving *Tactica* treatises, is the main source for the campaigns of Alexander and yet he includes very little tactical insight. Certainly, he provides no more than our other sources – and sometimes, I believe, Diodorus and Curtius are to be preferred.

A funeral stele from Pella, the Macedonian capital, showing a Pilos helmet. Note also the scabbard and spear with butt-spike. The more one reads of the exploits of the Macedonian phalanx and its component parts, the more remarkable it becomes. (DEA PICTURE LIBRARY/ De Agostini/Getty Images)

What this tactical consideration does allow us, however, is the chance to marvel at what the Macedonian phalanx achieved in all three of these battles: it was able to move to and then hold a key position, perform remarkable exploits and achieve extraordinary results. In defence the phalanx was indefatigable, an immovable mass of men and *sarissa* points which could absorb pressure and punishment for as long as was required. When ordered to advance, however, the *taxeis* of the phalanx became unstoppable; an inexorable mass of disciplined armoured men and *sarissae* moving forward and pressing toward their objective.

In all three of the battles explored here, Craterus' *taxis* held the leftmost position and in two, Craterus commanded the three *taxeis* of the left wing of the infantry; Nicanor commanded the right (Curtius 3.9.7). There is a remarkable continuity in the command of the other *taxeis* of the phalanx too, and only a slight shuffling of the order in which they were deployed – Coenus was on the right next to the hypaspists at Issus and Gaugamela, the position Perdiccas had held at the Granicus. At the Granicus the three remaining *taxeis* were drawn up (right to left): Amyntas, Philip, Meleager. We do not hear the fate of Philip, the son of Amyntas, but for the remaining battles he was replaced by Ptolemy. At Issus this order was (right to left) Meleager, Ptolemy, Amyntas, and at Gaugamela Meleager, Polyperchon and Simmias; the usual commander, Amyntas, was wounded, and was replaced by either his brother or – Diodorus tells us (17.57.3) – by Philip, the son of Balacrus. The position of this *taxis* with its new commander next to that of the experienced Craterus might imply that it was there to have an eye kept on it.

Alexander understood the value of the phalanx's battlefield role. The gap in the Persian line which the Macedonian king created and exploited at Issus and Gaugamela was no doubt made by exploiting the fact that the phalanx engaged and held the Persian infantry while the Macedonian cavalry, moving to the right, created a weakening in the Persian line when Persian units moved to cover the Macedonian rightwards manoeuvre; a weakening which Alexander could exploit. Neither charge would have been possible if the phalanx had not held the Persian infantry in place. If the phalangites had not engaged, then the Persians would have been free to spread their line equally to counter Alexander's rightwards manoeuvre, but masses of 16-rank-deep infantry armed with *sarissae* could not be ignored and the Persian infantry had no choice but to engage the phalanx. Unfortunately for Darius, no matter how brave the Persian infantry were, they proved to be no match for the Macedonian phalanx.

This stone wall relief at Dion, Greece, shows a Macedonian shield and muscled cuirass with *pteruges*. It is understandable that the phalangites felt great chagrin that they were being replaced in 330 BC and 324 BC by new (and non-Macedonian) personnel. Alexander may have thought that he was rewarding them with a rich retirement, but the *esprit de corps* of the phalangites was such that they felt they should go on as they were, as the men of Alexander's phalanx – men who could not be replaced or forgotten. (De Agostini/Archivo J. Lange/Getty Images)

PERSIAN EFFECTIVENESS

The military system which had been an integral part of the Persian Empire since its foundation failed to withstand the onslaught of the Macedonian invasion in 334–331 BC. Although parts of the Persian Empire would continue to resist Alexander's forces and put up a stout defence against the Macedonian phalanx, the battles of the Granicus, Issus and Gaugamela broke the back of the Persian military system. We know that the Persian infantry were spearmen and archers and that the various contingents of the empire were able to fight in their own style. We can see this in the accounts of Alexander's battles – particularly Gaugamela, where Darius incorporated Indian and Scythian troops into his armies alongside chariots and elephants. The continuity of units in the Persian army is harder to assess, although the Immortals of Herodotus are surely the same unit as the Apple Bearers of Arrian and other sources. The fighting style of these men is never distinguished from other units of Persian and Median infantry and so, since their ranks were filled with the best men from the levies of Persia, they presumably fought in the same manner.

This continuity of fighting style for at least two centuries might be seen as stagnation, but the Persian military system showed that it could incorporate change. After the wars of the 5th century BC, the Persians recognized the qualities of Greek hoplites and the possibilities they offered and began incorporating them into the empire's armies. In many ways this was a continuation of the policy of allowing units to fight in their own style, but

This relief from the Wall of Stairs from the Palace of Darius at Persepolis portrays a tribute procession. Various types of soldiers and arms (and shields) can be made out among those offering tribute. This is borne out in the army lists in our sources which reveal units from all over the Persian Empire. The Persian army proved unable to stop the onslaught of a smaller, more efficient and determined Macedonian force. (Diego Delso, delso.photo/ Wikimedia/CC BY-SA 4.0)

it also shows a recognition of the qualities of the hoplite. Mercenaries began to be recruited, sometimes in large numbers. In all three battles examined here the Persians used Greek mercenary hoplites, but the exact proportion of the empire's infantry made up by such men is difficult to assess because the sources differ on how many there were, where they were in the line and what they did. It does seem, however, that Greek mercenary hoplites put up the toughest resistance to the phalanx and that the refused-flank advance of the Macedonians was intended to delay or minimize contact with Greek mercenary hoplites in the Persian lines. Alexander's refusal to release hoplite prisoners also suggests he was wary of their capabilities against him.

Another factor in favour of the idea that the Persian military system was capable of change was the adoption during the 4th century BC of the Cardaces, men of the empire who were trained and equipped in the same manner as Greek hoplites. The defeats inflicted on the Persians by the hoplites of Greek city-states in the past had shown that this was a superior fighting style and by adopting such units of their own, the Persians demonstrated that their military system was capable of change.

At the same time, however, Persian use of hoplites (and other innovations) simply added another variant to the vast array of different types of fighting styles within the Persian army. The tactics used against Alexander show no

advance in tactical thinking; Darius and his commanders simply sought to overwhelm the smaller Macedonian force by weight of numbers (and missiles). Surrounding the Macedonians was the initial idea at Issus – although the eventual field of battle would not allow it – and so great efforts were made at Gaugamela to ensure that the field of battle was to the Persians' advantage. The Persians proved incapable of formulating a plan to counter Alexander's winning tactic in all three battles – the creation of a gap in the Persian line into which he could charge at the head of a combination of cavalry and infantry. The superiority of the Macedonian cavalry and infantry when fighting at close quarters was such that Darius' men always lost such encounters, regardless of Persian bravery.

Another weakness of the Persian military system lay in the person of the king; his survival was paramount and hence Darius fled (relatively early) at both Issus and Gaugamela. The wealth of the Persian state was such that he could always raise a replacement army to fight again. By contrast, Alexander could not flee the battlefield as flight would mean the destruction of his army and his invasion. He did not have the option to raise a replacement army. He did, however, have the option to lead his army to victory from the front. Unfortunately for the Persians, Gaugamela proved one defeat too many for Darius and the Persian military system.

Aftermath

With victory at Gaugamela, Alexander won the Persian Empire. Darius was pursued by Alexander to Arbela, but the Persian king had already moved on. Alexander moved on from Gaugamela to capture Babylon and Susa, the Persian capitals. Many of the satrapies of Darius submitted to Alexander without resistance. Darius was kept on the run and pursued until July 330 BC, when he was assassinated by Bessus, a member of his entourage, in Bactria. Bessus and the last resisting Persian satraps such as Ariobarzanes were then chased down by Alexander. Thereafter Alexander took Persepolis and pressed on against various homelands of peoples who had been subject to the Persians such as the Bactrians, Uxians, Scythians and Sogdians.

The strengths of the Macedonian military system and Alexander's brilliance as a commander meant the Macedonians in effect conquered the mighty Persian Empire in only four years. Alexander was still not satisfied, however, and invaded India in 327 BC. The army which accompanied him comprised the same veterans he had had with him from the start. In 326 BC, however, at the Hyphasis River in India, they refused to march further east. Alexander reluctantly agreed to turn back and marched to the sea. There he sent his army back to Persia and marched himself via the Gedrosian desert, losing many men in the harsh terrain. Plutarch (*Alexander* 66.4–6) estimates that barely one-quarter of Alexander's men returned from India. In 324 BC Alexander's army mutinied at Opis, thinking that they were being dismissed and replaced by the *Epigonoi*, a new generation of phalangites.

Alexander died in Babylon in June 323 BC, aged just 32. He had conquered one of the largest empires ever known with the military machine and vision he had inherited from his father and put to such effective use. On his death his generals fell to squabbling and the empire was divided among them to become the Successor States or Diadochi. The Macedonian phalanx which had won Alexander his empire became the mainstay of each of these empires

(Antigonid, Seleucid and Ptolemaic) and they perpetuated its glory. Whereas Alexander had shown himself capable of innovation on the battlefield and of taking advantage of the flexibility inherent within the drill and manoeuvres of the phalanx, however, his successors created larger and larger phalanxes less and less capable of manoeuvre. Whereas Alexander had conquered the Persian Empire with a phalanx of fewer than 10,000 men, by the succeeding century there were phalanxes of 20,000 and 25,000 men. Still the phalanx dominated the warfare of the former Persian Empire for almost two centuries. Phalanx warfare gained a new lease on life in the 16th and 17th centuries, when tacticians discovered the *Tactica* manuals, which proved ideal for the new pike formations of that era.

A Roman copy of a bust of Alexander in the British Museum. The appeal of Alexander was such that he continued to be the subject of portrait busts and sculptures long after his death and into the Roman period. In 11 years of continuous campaigning (a remarkable achievement in itself), Alexander never met with defeat and his forces encountered every kind of terrain imaginable, from scorching desert to snowy mountains. They fought battles of every kind against all manner of opponents and marched more than 32,000km. Accounts describing Alexander's remarkable exploits inspire awe and disbelief in the modern reader, as indeed they have in readers across the ages. (PHAS/UIG via Getty Images)

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Ancient sources

We are relatively fortunate in the number of surviving sources for Alexander the Great. We have Arrian, Diodorus, Plutarch, Curtius Rufus, Justin and others. In some ways this is to be expected; Alexander was one of the most famous individuals of antiquity. In other ways, however, we are left to lament the lack of clarity (and in some cases quality) of what has survived despite the quantity. We have no Persian account of any of Alexander's conquests. There are sources which do not survive (Justin's work is an epitome of the work of Pompeius Trogus, written in the 1st century BC) and some anecdotes (in Strabo, Athenaeus, other works of Plutarch and Polyaenus, for instance) which suggest an even larger tradition which is now lost. There are omissions and contradictions. Every one of our surviving sources was written after the life of Alexander, some by hundreds of years. Arrian, considered the best of the Alexander historians, was writing in the middle of the 2nd century AD, from the perspective of the Roman world but copying Greek models, almost 400 years after Alexander's death. Diodorus Siculus was writing a universal history of the world (which ended with Alexander's death) in the 1st century BC and Quintus Curtius Rufus was probably writing in the mid-1st century AD.

In addition, all of our sources claim to be using earlier material. Arrian opens his work (1.1.1) by laying claim to the quality of his sources, Ptolemy, son of Lagos, and Aristobulus. He refers to them often, but even they diverge, in which cases Arrian chooses between the two accounts. Diodorus and Curtius are often only considered as good as their sources, but they name Callisthenes, the official historian of Alexander's campaigns and so a good source (and one used much less by Arrian). Therefore, my preferment, on occasion, of the version in Diodorus and Curtius with regard to several aspects of the battles discussed here is not simply siding with a less reliable source.

Ptolemy and Callisthenes were eyewitnesses and so both are reliable (even when they obviously diverge). Ptolemy, however, wrote his account late in life, around 285 BC, after founding the Hellenistic kingdom of Ptolemaic Egypt. There were other eyewitnesses of Alexander too, who get quoted by our historians and elsewhere (such as Nearchus, Onesicritus, Chares of Mytilene and Eumenes of Cardia, Alexander's secretary). Plutarch, despite the foibles of his moral biography genre, also quotes letters (some consider them spurious) and Diodorus mentions (18.4) the *hypomnemata* (notebooks) of Alexander. Aristobulus was also an eyewitness, but wrote after Alexander's death and was regarded, disparagingly, as a flatterer of Alexander. Several of the later historians (including Diodorus and Curtius) also used later writers such as Cleitarchus and pseudo-Callisthenes, the so-called later vulgate tradition (to which Diodorus and Curtius are attached – although, I believe, in some cases wrongly).

All of these sources concentrated on the highest circles of Alexander and his commanders. Therefore they usually do not deign to mention or name the common phalangite. Added to these are the archaeological sources which provide corroboration of events and persons, perhaps the wording of a treaty, and also give us important visual evidence of the material culture of the Macedonian phalangite and the Persian infantryman. Sorting out the surviving sources is complex in and of itself and certainty cannot always be attained. We are often left with different accounts, motivations and even events and it is up to the historian to choose the one he or she believes to offer the most likely explanation, as I hope I have done convincingly.

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Gold discs from Philip II's tomb at Aigai. We know from other depictions that this motif appeared on Macedonian phalangite shields. It is possible that Macedonian shield designs denoted various units. (DEA Picture Library/De Agostini/Getty Images)

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Dedication

For my girls: Rae, Eloise and Siena

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