

480/479 B.C. — A PERSIAN PERSPECTIVE ¹

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In 480/479 B.C. three battles were fought at Thermopylae, at Salamis, and at Plataea. All three resulted from the Persian invasion of Greece, and one or more is featured in every modern military history which attempts to catalogue the "Decisive Battles of History"². Rightly so, for their outcome, Persian retreat and Greek "salvation" continues today, as in the past, to influence the way east and west deal with and think about one another.

In *The Greek Accounts of Eastern History*, Robert Drews argues convincingly that the "Great Event" was a major turning point in the development of Greek (European) historiography; the "Great Event", of course, being the European (Greek) defeat of the Persian army and navy under the command of Xerxes, "The Great King, King of Kings"³. Drews coins the term the "Great Event" to describe the defeat of the Persian invasion because, in his view, that is how Herodotus saw and described Greek victory: for the first time something had happened in real life which rivalled deeds done in days when heroes roamed the earth — when Jason sailed after the Golden Fleece, or when mighty Achilles challenged the proud men of Troy. Here was something worth recording. For the outnumbered forces of politically fractured Greece to turn back the military hordes of the great Asiatic empire of the Persians — an empire

¹ I offer this purely historical comment in Dr. Ghirshman's memory because I think at heart he was an historian. At least he was an archaeologist who believed that the materials he excavated and studied provided much of the data of history. It is also probable that his Pelican history of Iran educated more people in matters Iranian than anything purely archaeological he ever wrote. In that book, perhaps wisely, he avoided comment on the size of the Persian army and navy in 480/479 B.C. See Ghirshman 1954: 190-192.

² E.g. Fuller 1970: 47-73.

³ Drews 1973: 45-96. My debt to Professor Drews in this article is far more extensive than a few footnotes and a bibliographical reference suggest. In my ken, Drews has written the best book on Herodotus to appear in many years. For an excellent review of this work, see Muhly 1976.

which had already defeated Lydia, Babylon, and Egypt — was an historic event of truly heroic proportions. *This* was history, said Herodotus; reality which approached the stuff of epic. So it was with a generous heart that the Father of History set out to record his researches:

“... in the hope of thereby preserving from decay the remembrance of what men have done, and of preventing the great and wonderful actions of the Greeks and the Barbarians from losing their meed of glory.”⁴

Whatever else may be said about Herodotus, it is clear today that he achieved this, his stated goal, for the war between Achaemenid Persia and Greece has been and remains one of the most celebrated topics of ancient history⁵.

This essay asks three questions. Was the defeat of the Persians in 480/479 an event of heroic proportions? Was this a “Great Event”? And more important, is not the answer one gives to the first two questions a matter of stance — of one’s perspective on the events then and now? Would not that perspective differ if one had been a Persian, rather than a Greek?

I think one must admit at the start that, from a Greek point of view, their defeat of the army and navy of Xerxes was a great event. At the simplest psychological level war is almost always a great event — for the winners; the Battle of Britain is, in this sense, a great event for the Royal Air Force, though not for the Luftwaffe. On a second level, however, winning at war is still more of a great event when either the balance of combating forces is fairly delicate, or when the apparent odds against the winner are seemingly considerable. An example of the former case is the battle of Waterloo, by no means the most important combat of the Napoleonic Wars, yet the one most people remember (on both sides) in part because, as Wellington said, “It was a damn nice thing, the nearest run thing you ever saw in your life.” An example of the latter situation is the battle of Agincourt. The English were so outnumbered they could

⁴ H. Preface.

⁵ A thorough coverage of the literature on the wars between the Greeks and the Persians is found in Burn 1962. If one wishes to consider Herodotus as a primary source, which of course he is not, then it is fair to say that secondary discussion began with Ctesias and has continued with varying intensity ever since. The recent popularity of the subject is reflected in the citation by Burn of no fewer than sixteen new titles on the wars which appeared between the first (1962) and second impression (1970) of his *Persia and the Greeks*: Burn 1962: 18-19.

hardly believe they had won, and, on hearing a report of casualties, Henry V, according to Shakespeare, falls to his knees and pronounces a miracle:

“O God, thy arm was here,
And not to us, but to Thy arm alone,
Ascribe we all! When, without stratagem,
But in the plain shock and even play of battle,
Was ever known so great and little loss
On one part and on th’ other? Take it, God,
For it is none but Thine.” (IV: viii; 111-117)

Unexpected victory in the face of great odds magnifies the event. Then on yet a third level of perception, successful battle is a great(er) event when the long range results of victory are seen to be of particular political, social, and cultural importance.

Now, as the Greek warriors leaned on their spears and watched the forces of the Great King finally withdraw across the Hellespont into Asia, they knew they had won. They had participated in a great event of war, for the enemy was defeated in his initial purpose, the immediate conquest of Greece. They also must have had some sense of a great event on the second level as well; Greek victory, even after Salamis, could not have been considered by anyone as a sure thing. Indeed, the whole war had been something of a near run thing. The Persian invasion had been well planned and, on the whole, well executed strategically and tactically. Finally, Greece had remained united under external threat only through strenuous political effort and, at times, such as just before the battle of Salamis, only with a certain amount of low level cunning and trickery⁶. Thus, the victors had good reason to be pleased.

What the far reaching political, social, and cultural effects of the Persian defeat might be, however, probably escaped even Greek statesmen of 479, let alone the average Greek soldier or sailor. After all, in 479 the Greeks could not even be sure that they had won the war, since the Persians might come back just as they had after Marathon. Thus, the long term effects of victory at Salamis and Plataea were quite unpredictable. Yet in 479 even the average citizen of Hellas must have realized that an important event had occurred; the Persians had lost when they might very well have won, and Europe had driven back the latest barbarian invasion. The Greek sense of deliverance from an unwanted fate must have been considerable,

⁶ H. viii, 56-82.

and a great deal of rejoicing, mutual back slapping, and good story telling would have been called for⁷.

It is Drews' argument that while all of these deeds added up to something impressive from a Greek point of view, it was really only with the writing of *The Persian Wars* that Herodotus turned the victories of 480/479 into the "Great Event". Indeed, the structuring of the facts of 480/479 into the "Great Event" was Herodotus' deliberate purpose as an historian, and he bent all his scholarly skills to that end. Herodotus understood those events to be on a par in scope, wonder, and effect with the heroic deeds of the distant story-telling world of Homer, and he consciously set out to demonstrate that this was so.

From the moment when *The History* first took shape in his mind, therefore, Herodotus searched both for data and for a rhetorical style and mould which would heighten his reader's sense of the "Great Event". He did his research and his writing honestly, setting standards in historiography which have in part survived intact; we do not call him the Father of History without cause. Yet given his purpose—the recording of the "Great Event"—we may logically expect the data he presents to be selective, somewhat particularistic, and at times exaggerated. This is, of course, one reason why Herodotus is a great historian—he had a stance and a didactic purpose. Any good historian does.

Let us, therefore, consider briefly how an historian in Herodotus' position, with his goal of recording the "Great Event", would approach the problem of Xerxes' invasion of 480. We noted above how on the simplest psychological level even the average Greek would have already had a sense of exaltation by being on the winning side, and how that sense would have been heightened because Greek victory had so long remained uncertain. To give all of this a heroic cast, to show the still living participants just how important a thing they had done, to make real events (history) into something worth recording (epic), Herodotus (and any other historian with his materials and purpose) would have naturally focused attention on the second and third levels on which a military victory can become a "Great Event".

Thus, it is that Herodotus first did all he could in good conscience to heighten the reader's appreciation that the Greeks had fought against

⁷ A parallel to all of this, both in the event and in the reaction afterwards, would be the English defeat of the Spanish Armada of invasion in 1588 A.D.

great odds—to describe an Agincourt and not a Waterloo. Like the ancient historians of Israel, Herodotus knew the power of David against Goliath as rhetoric. So it is that the Persian army becomes in *The History* a host of absurd size, the Persian preparations for invasion colossal in design and execution, and the Persian navy a veritable forest of masts on the wine-dark sea⁸.

Secondly, Herodotus was in a good position to play on what his audience already knew of the long range effects of victory in 479. He began writing *The History* when the Athenian Empire was at its height; he “published” before the end of the Peloponnesian War and Athen’s defeat. While on the whole *The History* presents a fairly balanced view of the Athenian contribution to the Greek defeat of the Persian invasion⁹, we must not forget that its author’s view of the long range political, social, and cultural results of the battles of 480/479 was inevitably much coloured by what he and his audience knew of events which focused on Athens and on Greek-Persian relations in the fifty years following Plataea. Herodotus and others had experienced, as the hoplites at that fateful battle had not, some of the later results of their victory: the revival of Greek power in Ionia, a marked decline in Persia’s ability to influence events in Europe, the rebuilding of the Acropolis, the Delian League, the Athenian empire, and the Athens of Pericles. It was against this background of subsequent events that Herodotus developed the victories and defeats of 480/479 into the “Great Event”. In *The History* the apparent overwhelming odds which faced the Greeks when Xerxes marched to war and the author’s and reader’s knowledge of the importance and glory of events in the next fifty years combine to create, both for Herodotus’ contemporaries and for all subsequent students of European history, a sense of the “Great Event”.

As for the long range results of the war, what Herodotus did not know when he wrote, and what later historians approaching 480/479 in the spirit of Herodotus’ “Great Event” sometimes tend to forget, are the events of

⁸ Herodotus’ estimates (vii, 184-186) for the size of the Persian army, 2,000,000 infantry and 100,000 horses, are at best humorous. If the infantry marched ten abreast and the cavalry five abreast, the Persian column would be about 1,320 miles long. By modern road it is approximately 608 miles from where the Persians crossed the Hellespont to Athens. Thus, on Herodotus’ count, half of the Persian column would still not have crossed the Hellespont when the head of the column was setting fire to the Acropolis. For military spacing on marches, see Maurice 1930: 229.

⁹ Herodotus has been accused of being pro-Athenian, but see Wells 1923: 151-161.

386 B.C. It was in that year that a delegation from the Greek city states came to Sardis to listen to Artaxerxes II, Xerxes' great grandson, dictate the "King's Peace" to Greece. Even an Herodotus would have been hard pressed to make of that a "Great Event". As Olmstead, who took a Persian perspective on all of this, remarks,

"Greek victories of the last few years lost all meaning. Worst of all, European Greeks had admitted the right of Persian intervention in purely European affairs—a most dangerous precedent for the near future. Artaxerxes might well boast that *he* had succeeded where Darius and Xerxes had failed."¹⁰

Important as the study of Persian-Greek relations in the century and a half following 480 B.C. may be in gaining a perspective on Herodotus' *Persian Wars*, they are not, however, the central subject of this discussion. I wish here to focus on the much narrower, but perhaps not unimportant, issue of the size of the Persian army and navy as reported by Herodotus and as estimated by modern historians writing on the battles of 480/479.

At the start everyone is agreed that the Father of History cannot possibly be correct in the figures he gives for the size of the Persian army. Nevertheless, one gets the clear impression in reading modern commentary that there is something like an unconscious historical urge at work to make that army just as large as possible *in the spirit of Herodotus' "Great Event"*¹¹. When it comes to the navy, some modern writers actually accept, after much weighing of the evidence, the figures given in the ancient sources¹². What has happened is clear: Herodotus has become part of our western sub-conscious. We are obliged to accept the proposition that the odds against Greece were almost overwhelming when Xerxes marched, even if the figures given for the Persian forces in Herodotus must be wrong, because (thanks to our Greek historical heritage) we believe in the "Great event".

Yet, if we are to work our way through and behind the sources to some kind of a Persian perspective on the war, the question of just how large the army and navy of Xerxes really was is of vital importance. What odds did the Greeks face? Can we trust the ancient sources at all? What are the

¹⁰ Olmstead 1948: 395.

¹¹ Running against the tide are the arguments of H. Delbrück. See Delbrück 1913 and also his *Die Perserkriege und die Burgunderkriege* (Berlin, 1887) which is unavailable to me. Note the spirited counter-attack on Delbrück mounted in Wells 1923: 146-149.

¹² E.g. Hammond 1973: 268-270.

military probabilities in the actual event and in the circumstances which influenced and shaped the *Persian* approach to the Greek Wars?

If we come at the problem from the perspective of Achaemenid Persia, I think we get a different picture from that which Herodotus paints after the fact and with his particular historiographic brush work. On the one hand, Persia under Darius I was clearly still an expanding state. After taking over European Thrace and campaigning against the Scythians beyond the Danube, Greece was a logical next step in any programme of conquest. Darius failed in a first attempt at Marathon, and Xerxes became heir to his father's plans to try again. On the other hand, such expansion was good policy; Ionia was vital to the Empire, and the history of the Ionian revolt suggested that the best way to control the coast of Asia Minor might be to control the Greeks in Greece¹³. Thus, the natural thrust of expansion and the dictates of good policy together prompted completion of a Persian conquest of Greece.

However natural and sensible, under these circumstances, the Persian invasion of Greece may have seemed to the Great King and his advisors, nevertheless, we must remember that Greece was a small country on the far fringe of a very large empire. That empire had many and varied interests. There was much territory to be controlled, many subject peoples to be dealt with (peacefully if possible, more harshly if necessary), and long borders to be defended.

Cyrus the Great had lost his life defending the northeastern frontier, and Xerxes could hardly assume that Darius' conquest of certain Scythian tribes in that region had settled the issue of Persia's relations with central Asia for all time¹⁴. Achaemenid control in India (the Indus Valley region) would also, no doubt, require constant military attention¹⁵. And at the

¹³ Herodotus, of course, was well aware of the extent to which Greek interference in the Ionian revolt was an important cause of Persia's determination to conquer Greece itself: e.g. H. v, 105.

¹⁴ Iran's northeastern frontier has always been her weak spot, for here the plateau is wide open to the steppes of Turkmenistan and central Asia. Military disaster has often struck when this region was not heavily defended. The Iranians themselves probably entered the plateau along northeastern routes, and across this border came the conquering Turks and Mongols. No Persian government would have dared to neglect the region in order to ensure a conquest elsewhere.

¹⁵ We know little about Achaemenid rule in the Indus valley. What is clear from a study of the map, however, is that here would have been another open frontier of the empire beyond which lived, in the south and north-east of the sub-continent, large numbers of

opposite end of the empire Persian troops (Jewish mercenaries) had to be maintained on the upper Nile to assure peace along the Egyptian-Nubian border¹⁶. In sum, much military effort would continue to be needed at the edges of the Great King's domain, in order to make safe the centre. Persia could not afford to weaken that effort by an invasion of Greece.

Within the empire the normal peaceful conduct of satrapial affairs required military garrisons and troops for keeping local peace and seeing that the satrap, as officer of the king, was obeyed. However lightly Persian rule sat on many of the conquered peoples, the government could not function without police troops and without some show of potential force. Of still greater concern would have been recent signs of unrest and disaffection at two key points in the centre of the empire, where by now Persian rule had to be reinforced. Xerxes' accession to the throne took place routinely in 486 B.C., but simultaneously Egypt revolted, and was not brought back to tribute until 484 B.C.¹⁷. Then, in 482 B.C., Babylon rebelled, and though the revolt was rapidly and apparently ruthlessly suppressed, such rumblings so close to home must have greatly disturbed both the king and his high command¹⁸. The need for a continued and considerable show of royal force, probably in Egypt and almost certainly in Babylon, was a military fact of life the Persian planners of the invasion of Greece had to keep in mind.

potentially hostile people. Persian control of the rich river valley would have demanded a considerable military presence. It was worth it, of course, since the satrapy of India paid the highest taxes in the empire.

¹⁶ Kraeling 1953.

¹⁷ The crushing of the Egyptian rebellion marked a turning point in Persian policy toward certain of the conquered peoples. The revolt was apparently put down ruthlessly, and Xerxes refused to assume his rule of Egypt in the guise of the native king. Henceforth, he would control Egypt as a conquering foreigner, not as her "rightful" pharaoh. Such a policy would have probably required a larger Persian military presence in Egypt than previously.

¹⁸ Xerxes apparently decided to change the form, if not the style, of Persian rule in Babylon as well as in Egypt. Before the Babylonian revolt the Achaemenid kings had, as in Egypt, ruled as though they were legitimate descendants of the Babylonian monarchy. Xerxes, however, changed his titulary from a purely Babylonian form to read "King of Parsa and Mada and king of Babylon, king of lands". Such changes in royal form may have in part sparked the revolt. When the dust of rebellion settled, temples, ziggurats and fortifications were razed; the statue of Marduk, Babylon's god, was melted down; land was taken from locals and awarded to Persians; taxes were raised. All this created a climate of hostility in Mesopotamia which would have required a greatly increased Persian military presence in the Tigris and Euphrates valleys.

Thus, on the one hand, the Greek/European perspective on the Persian Wars, shaped as it is by Herodotus' vision of the "Great Event", usually would have discussion begin with the assumption that the entire forces of Achaemenid despotism were available for war with Greece in 480, because nothing was more important to the Great King than the conquest of Europe. On the other hand, even a superficial attempt to approach the issue from a Persian perspective indicates that not only did the Great King have a good many concerns on his mind other than the conquest of Greece (however important such might be), but also, he and his army commanders were by no means free to marshall all their "hordes" for so single a purpose. Other military demands seriously affected logistical planning and muster rolls for the army designated to march into Europe. Indeed, one could perhaps reverse the standard argument and suggest that, given all of the varied demands on the Persian military, the importance Persia attached to the invasion of Greece is manifest in the very large numbers of troops they *did* manage to squeeze from other duties to join in crossing the Hellespont.

In sum, given: (1) Herodotus' purposes and rhetorical methods, (2) the extent to which the "Great Event" is imbedded in the historical subconscious of the west, and (3) the extensive known and reasonably postulated demands on Persian military resources over and above the needs for a Greek invasion, it is certain that there were far fewer soldiers in Xerxes' army and ships and sailors in his fleet than the Greeks who fought them supposed, and probably fewer than many even conservative modern historians tend to think. Obviously, there were far fewer than the Great King and his generals would have wished.

With these axioms in mind, let us approach the problem of estimating the size of the Persian forces in 480/479 pragmatically, basing the argument on certain logistical facts common to all pre-modern armies and navies.

The model for this method is found in the sensible article by F. Maurice, "The size of the army of Xerxes in the invasion of Greece 480 B.C." ¹⁹.

¹⁹ Maurice 1930. Herodotus himself was actually the first historian to consider applying logistical calculations to estimate the size of the Persian army. He wonders aloud at the size of his own estimates (vii, 187), saying, "... rather it is a marvel to me how the provisions did not fail, when the numbers were so great. For I find on calculation that if each man consumed no more than a choenix of corn a day, there must have been used daily by the army 110,340 medimni". Unfortunately, Herodotus never followed through on the implications of his own shrewd observation.

Maurice was a general officer in the British army who, while serving in the region of the Hellespont after the First World War, studied the logistics of the Persian crossing into Europe and of their march to Doriscus in terms of the availability of water for troops and animals. Water is scarce along this route, as Herodotus was first to note²⁰, and this fact, combined with the need to stage the march to accommodate the limitations of the bridge across the Hellespont and the width of the roads to be covered before reaching Doriscus, led Maurice to the conclusion that 210,000 men and 75,000 animals "... is the probable limit to the size of the Persian army which crossed from Asia into Europe"²¹.

Other scholars, using ingenious arguments in their analysis of the divisions of the Persian army as described in Herodotus, have arrived at quite similar figures. Munro, for example, envisions an army of about 200,000 men, and Burn, in the best general summary of the situation as seen by modern scholarship, supports Munro's figures, at least implicitly²². Keeping in mind Maurice's phrase "the probable limit", let us consider some of the logistical implications of such a sizeable force within the overall development of the campaign.

In his tight and penetrating study, *Alexander the Great and the Logistics of the Macedonian Army*, Donald Engels has gathered together in convenient format some useful logistical data on pre-modern armies and their needs²³. Each soldier required approximately three pounds of grain per day to meet *minimum* caloric requirements for an active life. Each man also needed a minimum water ration of two imperial quarts per day, weighing about five pounds. Pack and cavalry animals needed ten pounds of grain, ten pounds of straw or other fodder, and eight imperial gallons of water (eighty pounds). Now, if we apply these carefully calculated amounts to Xerxes' army, having in mind that the Persians probably marched from Sardis in late March and arrived in Athens in mid-September 480²⁴, we see from the data summarized in Table I that 210,000 troops and 75,000 animals put a considerable demand on the Persian commissariat, both daily and over the whole of the march.

²⁰ H. vii, 43 and 58.

²¹ Maurice 1930: 224.

²² Munro 1953: 271-276; Burn 1962: 326-332.

²³ Engels 1978: esp. 11 and 25 and Appendix I.

²⁴ The chronology of the campaign remains somewhat controversial. I have followed Maurice, who allows some 170 days for the march from Sardis to Athens: Maurice 1930: 233.

TABLE I

	<i>Grain/day</i>	<i>Fodder/day</i>	<i>Water/day</i>
210,000 troops	315 tons	—	420,000 qts. or 525 tons
75,000 animals	375 tons	375 tons	600,000 gals./3,000 tons
<i>Daily totals</i>	690 tons	375 tons	705,000 gals./3,525 tons
<i>Campaign totals</i> (170 days)	117,300 tons	63,750 tons	119, 850,000 gals. or 599,250 tons

It is by using these kinds of calculations that we can attempt a reasonable estimate of the accuracy of various suggestions as to the size of the Persian army.

Before doing so, however, we must first discuss the probable strength of the Persian navy, for only in this way can we get a complete picture of the overall demands placed on the Persian Quartermaster Corps.

On the whole, modern historians have been more willing to accept something close to Herodotus' figures for the size of the Persian navy than they have been able to believe his data on the Persian army²⁵. This is probably because Aeschylus also supplies an estimate on the size of the fleet, and, thus, it would appear we have two independent sources arriving at roughly the same figures: 1207 warships according to Herodotus, 1000 according to Aeschylus²⁶. Even so, modern attempts at estimating the size of the Persian navy range from as high a figure as 1,207 to as low as 660 warships. These totals are for actual fighting ships only; there were then support and supply ships to be accounted for, all manned with sailors and, in the case of the warships, with marines as well.

The impression one gains from the literature is that, once one admits that both Herodotus and Aeschylus cannot be right on the size of the Persian navy, one is almost forced into guesswork²⁷. So be it; I see little alternative. If it is logical to suppose that the Greeks knew the size of their own fleet at Salamis with some accuracy, and are correct in saying they mustered 300 ships, then 300 becomes a bottomline figure for the size of the Persian navy, since no one suggests the Greeks outnumbered the Persians in the battle. Now, we know that a good many Persian ships had been lost in smaller sea battles before Salamis, and that Persian sinkings in

²⁵ 1,207 ships, Hammond 1973: 270; 660 battleships, Munro 1953: 276; 800 triremes, Bury 1951: 269.

²⁶ It is highly unlikely, of course, that Herodotus and Aeschylus are actually independent sources. See also Burn 1962: 331-332.

²⁷ This is in effect what Munro finally does, he guesses: Munro 1953: 275-276.

storms had been considerable (though again, nothing like what Herodotus suggests)²⁸. One is, thus, left with the conclusion that the Persians had many fewer than 1,207, but considerably more than 300 warships in their navy. In sum, let us conclude that Munro is not far off the mark when he suggests a total Persian battle fleet of 660 ships²⁹. Such a fleet would be manned by some 132,000 sailors and marines, and would be supported by perhaps seventy supply ships manned by 2,800 sailors. This makes a total complement for the Persian navy of some 134,000 men. (The number of supply ships is a question to which we shall return later).

Calculator in hand, we can once again produce figures which suggest that such a navy required a total of 202.2 tons of grain per day to feed itself, and 67,400 imperial gallons of water (337 tons) per day to slake its thirst. If, for convenience, we again use a figure of 170 days for the length of the campaign (leaving aside that the fleet was no doubt quite active before the march from Sardis began, that Salamis was fought well after the Persians arrived in Athens, and that naval needs were much greater than those of the battle fleet alone), we may reckon that the rough total needs of the fleet were 202.2×170 , or ca. 34,374 tons of grain, and $67,400 \times 170$, or 11,458,000 imperial gallons of water (57,290 tons).

Adding the needs of the army and navy together we arrive at the figures summarized in Table II.

TABLE II

	<i>Grain/day</i>	<i>Fodder/day</i>	<i>Water/day</i>
Army	690 tons	375 tons	705,000 gals. or 3525 tons
Navy	202.2 tons	—	67,400 gals./337 tons
<i>Daily totals</i>	892.2 tons	375 tons	772,400 gals./3,862 tons
<i>Campaign totals</i> (170 days)	151,674 tons	63,750 tons	131,308,000 gals. or 656,540 tons

Pity the Persian Quartermaster General. Such daily demands on his supply system must have been daunting. The total logistical requirements of the campaign must have seemed overwhelming. He might well have been the kind of dedicated soldier who quietly told the Great King that his men "do the difficult at once, the impossible takes a little longer", but such enthusiasm and loyalty would hardly have solved his real problems.

²⁸ H. vii, 188-190 for the great storm off Sepias in which the Persians are reported to have lost 400 ships. For the battle of Artemision see H. viii, 16-18.

²⁹ Munro 1953: 276.

Yet one must recall that the Persian commissariat had had considerable time to stockpile supplies for the campaign, and that a good deal of food could be gathered from the countryside, following Napoleon's maxim that an army should live as much as possible off the territories through which it marches. As Xerxes says in speaking to Artabanus,

"... when we have brought Europe under us, we shall return, without suffering from want or experiencing any other calamity. For while on the one hand we carry vast stores of provisions with us, on the other we shall have the grain of all the countries and nations we attack; since our march is not directed against a pastoral people, but against men who are tillers of the ground"³⁰.

Indeed, the Persians had been planning the campaign for some time. In anticipation of the need for food during the coming invasion, large stores of grain (and we may assume fodder as well) had been laid up in those parts of Europe either already ruled by the Persians or under the control of Persian allies, such as Alexander of Macedon. Also, the invasion itself was timed to take advantage of the potential harvest in Greece. Surely the Persian Quartermaster Corps could solve much of its problem in these ways: thoughtful preparation and a maximal use of the Greek harvest.

A brief glance at three particular phases of the campaign, however, suggests that advance planning and local produce, no matter how well done and exploited, would fail to meet the needs of an army of 210,000 men and 75,000 horses, and a navy of over 100,000 sailors.

The first of these phases is the march to Thermopylae from Therma, the major gathering point for the army after it left Doriscus. Once having departed from Therma we may reasonably assume that the Persians were marching through hostile country, and had left territories which they had been able to supply with stores before the campaign began³¹. In other words, from Therma on they had either to carry their grain supplies with them (by pack-horse, or by sea), or to live off the Greek harvest, or both. There would have been no prepared grain supplies along the route of march.

The chronology of this march is subject to various interpretations, but the figures offered by Maurice are reasonable: the march itself took

³⁰ H. vii, 50.

³¹ Persian control before the start of the campaign could hardly have extended much south of Therma. Certainly it reached no further south than Tempe, for early in the campaign season of 480 B.C. Greek troops, under Spartan command, had been active that far north. For details see Burn 1962: 339-345.

thirteen days, and the Persians were some six days at Thermopylae³². While in the latter position, supply by sea would have been both possible and relatively easy, since the navy could control the approaches to the bay of Lamia. The situation was much different along most of the route of march to Thermopylae, however, and it is on this stretch that the Persian Quartermaster Corps would have been severely tested. The army divided and marched south from Therma by at least two, if not three, different roads (following perfectly the Napoleonic maxim to march divided, fight combined)³³. Only one of these routes was along the coast, and even then contact with the sea was easy only for about the first thirty miles. This left a total of one hundred and ten miles for that column to march on an inland road before reaching Thermopylae, and the other two columns were inland the whole distance from Therma to Thermopylae. Thus, the coastal column was out of touch with the sea for about ten days, and the rest of the army could not be supplied by ship for the whole thirteen days of the march south to the pass where Leonidas was to win his niche in history.

Let us return to some plain facts and figures of military reality with this march in mind. An army of 210,000 men and 75,000 horses required a total of 1,380,000 pounds of grain a day (fodder and water needs may be left aside to simplify the discussion). A single pack-horse can carry about two hundred and fifty pounds of grain, but we must remember that the pack-horse itself eats ten pounds of grain a day, so its effective carrying capacity beyond its own needs is two hundred and forty pounds³⁴. A simple calculation reveals that 5,750 pack-horses would be needed to carry south from Therma the grain necessary to feed for one day an army which ate 1,380,000 pounds of cereal a day (1,380,000 divided by 240). For a two day march one would need 12,000 pack-horses to carry 2,760,000 pounds of grain, a two day supply for the army with each horse now able to carry only 230 pounds because that horse would itself eat twenty pounds of grain in two days. If one continues with this straightforward calculation to cover a ten day march, the minimum amount of time the one coastal column would have been out of touch with the sea and hence unable to be supplied by ship, on that tenth day the army would require 4,710,000 pack-horses to

³² Maurice 1930: 233.

³³ For an excellent map of the Persian routes of march south from Therma v. Burn 1962: 340.

³⁴ Engels 1978: 19 and Table 1.

provide a total of 706,560,000 pounds of grain which is what the troops and animals would have eaten in the ten days of marching.

Even if: (1) we assume that at least half of the army's grain needs were met from the Greek countryside, and (2) we ignore the transportation which would have been required to move that foraged grain to the troops, one is still left with an impossible demand on the Persian Quartermaster General to move grain forward from Therma. The only reasonable conclusion from these calculations is that the Persian army which marched to Thermopylae did not even come close to numbering 210,000 men and 75,000 animals.

What was so on the march from Therma to Thermopylae was even more the case in the Persian advance from the famous pass to Athens³⁵. Again we are not entirely in command of the chronology of this phase of the campaign: Maurice suggests the Persians did not enter Attica until some twenty-three days after the battle of Thermopylae, while Burn has the Persians in front of Athens only nine days after that struggle³⁶. Whichever timing is preferred, the army was again marching mostly on inland routes and was completely out of touch with the fleet and any possible supply by sea for at least six days³⁷. All of the calculations regarding grain supplies carried forward by pack-horse, which we have just applied to the march from Therma to Thermopylae, could be used to describe the Persian army's demands on its march to Athens. We may also assume there would

³⁵ Another possibly profitable approach to estimating the true size of the Persian army in 480/479 would be to study closely marching times for the army over known distances. For example, the army marched forward from Therma to Thermopylae, a distance of about 202 miles in 13 days, thus averaging 15.6 miles per day. They covered the roads from Thermopylae to Athens, 117 miles in 9 days (following Burn's chronology, v. n. 36), averaging 13.02 mpd. On the total march, Therma to Athens, which took 23 days (6 were spent at Thermopylae) the army marched at an average of 13.9 mpd. Engels (1978: 154-156) notes that Alexander's army managed an average marching rate of 13.9 mpd. For short marches they could manage about 14 mpd. The highest average speed the whole army ever managed was 19.5 mpd. These calculations assume Alexander's army numbered 65,000 infantry and 6,000 cavalry. I would suggest that the similarity in speed of march of Xerxes' and Alexander's armies implies that the two may have also been somewhat similar in size.

³⁶ Maurice 1930: 233; Burn 1962: 425-433.

³⁷ Large contingents of Persian troops poured south into Attica by routes which passed nowhere near the sea. Many marched down the centre of the peninsula on the road to Thebes, while one column swung as far inland to the west and south as Delphi. Relatively few troops were probably ever in a position to be supplied from the sea at any point on their advance.

have been even less to gather in from the countryside on this leg of the campaign, for it is not likely that the Athenians would have generously stock-piled their own harvest for the Persians to collect.

Which brings us to the sea battle off the shore of that famous island, Salamis—the turning point in Europe's fortunes. While much about the battle of Salamis remains controversial³⁸, the fact is that the Persians lost. The question is, how many of them lost? And to answer that requires a careful look at the third critical phase of the campaign from the Quartermaster General's point of view, the approximately three weeks that passed between the Persian occupation of Athens and the naval engagement at Salamis³⁹.

A Persian fleet of 134,000 sailors and marines, backed up on land by an army of 210,000 men and 75,000 horses⁴⁰, would have continued to require 892 tons of grain a day. For the three weeks between the occupation of Athens and the battle of Salamis total grain needs would, thus, have been 18,732 tons. We may be sure these needs could not be met from the countryside; if they were, then the Athenian Quartermaster had failed, and the Greeks on Salamis would have starved⁴¹. In short, there would have been no battle. Since supply overland would have been difficult, to say the least, the Persians must have shipped by sea most of the grain they needed. Let us assume for the sake of argument that their nearest depot was at Therma, and that they had managed to store sufficient grain at that depot to meet the needs of this phase of the campaign⁴². Let us further assume that it was a five day sail from Therma

³⁸ A recent discussion of problems outstanding is Pritchett 1965: 94-102. See also Hammond 1973: 253-265.

³⁹ Estimates vary between two and three weeks. For a discussion and bibliography see Burn 1962: 435-436.

⁴⁰ Everyone would agree that by now the Persian army was smaller than it had been before marching from Therma. After all, at a minimum, there had been some losses at Thermopylae (though hardly the 20,000 men reported in H. viii, 24). I continue calculations on the basis of 210,000 men and 75,000 horses for economy of argument.

⁴¹ Burn 1962: 431-432. The Greek retreat was hasty and they may not have been able to take as much grain to Salamis as they would have wished. As Burn points out, however, the whole schedule of the harvest had been disrupted by the campaign, and there may not have been all that much grain available to gather in before the Persians flooded into Attica.

⁴² As noted above (n. 31) Therma was almost certainly the most southerly base at which the Persians could have accumulated supplies before the campaign began. At a later date an advanced depot could have been established at Lamia, but it is doubtful that sea-born supplies for Athens would have been trans-shipped at secondary bases like Lamia.

to Athens. Given these assumptions, what size supply fleet would have been needed to feed the Persian army and navy as they spent three weeks preparing for the battle of Salamis?

Unfortunately, we lack precise data on the carrying capacity of the average merchantman of the 5th century B.C. There is some evidence to suggest, however, that it was common for ships to be able to carry one hundred and twenty tons, and that ships of one hundred and forty tons burthen were not unusual. Let us, therefore, assume an average capacity of one hundred and thirty tons per ship⁴³. On this assumption, the Persians needed to off-load about seven ships a day at Athens to feed their forces (892 tons divided by 130 tons). Another seven ships would have to be loading at Therma. Given a five day sail between the points of embarkation and disembarkation, there would have to be two fleets of thirty-five ships each at sea at all times, one loaded and headed for Athens, one empty and returning to Therma. This means the Persians had to arrange for a total of eighty-four ships to be available for grain transport during the build-up for the battle of Salamis. That is a great deal of shipping, and our calculations have made no allowance for misadventure—bad weather, wrecked ships, tired sailors, troubles of loading and unloading, military interference by the Greeks, or normal bureaucratic delays. In short, once again it seems clear that, as the battle of Salamis approached, the Persian army in Attica did not number anything like 210,000 men and 75,000 horses; nor did the navy probably total 134,000 sailors and marines. The simple logistical facts of military life do not permit us to postulate such numbers of combatants.

The Persian loss at Salamis marked the end of the first phase of the 480/479 war. It was now clear to all that the invaders could not win in a single campaign; a more sustained effort, perforce now focused primarily on land, would be needed for victory. Therefore, the Great King, Xerxes, returned to Asia, taking several units of the Persian army with him, while the competent general, Mardonius, remained in Greece with what the Persian high command considered a sufficient force to bring the final campaign to a successful conclusion. The combat season for 480 was over, and both Greeks and Persians went into "winter quarters"—the Greeks to celebrate their victory and re-organize their alliance, the Persians to lick

⁴³ Data on tonnages of average freighters of the period is found in Casson 1971: 183-184, 171-172, and n. 24.

their wounds, mount a diplomatic offensive, and prepare their forces for the campaign of 479.

The political and military events of the winter, spring, and summer of 479 culminated on August 27th in the battle of Plataea, the final defeat of the Persians and their retreat from Europe. While the complexities of the campaign and the battle itself offer the historian a wealth of problems for discussion⁴⁴, our interest here again focuses on the more prosaic issue of how many troops Mardonius commanded during that campaign and in the shock of battle. In other words, how much force had Xerxes been able to leave in Greece after Salamis?

Once again, modern scholarship is agreed that the figures offered by Herodotus are wildly exaggerated; Mardonius did not command an army of over 300,000 men⁴⁵. Yet, there is almost no agreement on the actual size of Mardonius' Persian and allied army. Munro, in discussing the size of the forces that fought at Plataea, suggests that the Persian army mustered about 120,000 troops; while the Greeks replied with some 80,000 men, forty percent of whom were heavy-armed hoplites⁴⁶. A more conservative estimate has been offered by Burn: 60/70,000 Persians, of whom 10,000 would have been cavalry, and approximately 40,000 Greek hoplites (Burn offers no estimate for the size of the lighter armed contingents in the Greek army)⁴⁷. Let us accept Burn's figures for the purpose of making some logistical calculations, first with regard to the battle of Plataea and the campaign immediately preceding that battle, and then for the entire campaign of late 480 and 479.

Some 70,000 troops required 210,000 pounds of grain a day, and 10,000 cavalry horses ate daily another 100,000 pounds of grain and 100,000 pounds of fodder. Thus, water requirements aside (115,000 imperial gallons per day), Mardonius' Quartermaster Corps had to deliver a minimum total of 410,000 pounds of food supplies per day to the neighbourhood of Plataea. Assuming that these supplies were brought

⁴⁴ Plataea is the best documented battle in ancient history prior to the Peloponnesian War. It is actually possible to deal with it in a framework familiar to military historians of much later periods: v. Fuller 1970: 64-71. It is interesting that Fuller, a military historian who should have known better, accepts Munro's estimates of 120,000 men for Mardonius' army.

⁴⁵ H. viii, 100.

⁴⁶ Munro 1953: 317.

⁴⁷ Burn 1962: 511.

forward mainly by pack-horse, such demands called for a total of some 1,709 pack-horse loads of grain and fodder to be delivered each day (410,000 divided by 240, the carrying capacity of a pack-horse eating ten pounds of grain a day itself). The campaign immediately preceding the battle of Plataea began when the Persians once again departed a burning Athens and marched north in the direction of Thebes, to take up a position in the region of the Asopos river. Thirteen days later the two armies clashed. Thus, in the two weeks before the battle a Persian army of 70,000 men, including 10,000 cavalry, would have needed a total of 22,217 pack-horse loads of grain and fodder to sustain itself in the field.

Now, this figure represents only the minimum demand on the Persian commissariat, for it assumes, no doubt incorrectly, that grain and fodder in those quantities was available in only a single day's trip from the army. It is, of course, much more likely that by now, given the war-scarred condition of the Boiotian countryside (see below), Persian teamsters would have had to travel considerably greater distances between the army and its depots or regions where forage was possible. If we assume a seven-day forage radius outwards from Plataea, the time it would take to bring supplies up to the army from valleys or storage depots only as far away as Lamia, in southern Thessaly⁴⁸, then it would require some 15,946 pack-horses in constant use to supply Mardonius' army with food and fodder for one day, since a horse travelling seven days can carry only an effective load of one hundred and eighty pounds, because of its own consumption (410,000 pounds of grain and fodder divided by 180 times 7 equals 15,946 pack-horses). While one train of horses was moving forward loaded, a column of equal numbers would have been returning unloaded. Thus, a total of over 30,000 horses (all needing to be fed) would be required to maintain Mardonius' position in Boiotia. Given that these figures make no allowances for the need to rest the pack-horses regularly when working them in this fashion, or for sickness and loss of horses, or for the food demands of the teamsters themselves, it is quite reasonable to calculate that a Persian army of 70,000 men and 10,000 cavalry mounts would require a pack train of perhaps 35,000 horses, while encamped in front of Plataea. I would suggest: (1) that this is more horses than the Persian Quartermaster General could have mustered, (2) that it is altogether probable that supplies had to be brought from much further away than

⁴⁸ Cf. Burn 1962: 528.

Lamia, and that, thus, our calculation of 35,000 horses is still too few, and (3) therefore, that Mardonius' army at Plataea could not have numbered 70,000 men and 10,000 cavalry mounts.

Interestingly enough, Herodotus mentions the difficulties of supply experienced by both the Persians and the Greeks on the Plataea campaign, though his conception of military logistics appears a little naive. In ix, 41, he has Artabazus argue with Mardonius in a command conference that the army should fall back on Thebes, "where they had abundant stores of corn for themselves, and of fodder for their beast of burden". Yet Thebes was only a little over three miles distant from the Persian position at Plataea, and moving grain up that distance would have been no problem at all. Furthermore, were plentiful supplies so close at hand, Alexander of Macedon could never have said to the Athenians in ix, 45, "... do you abide where you are; for his [Mardonius'] provisions will not hold out many more days". Artabazus' and Alexander's arguments are contradictory. We may assume, however, that Herodotus touches on a very real truth in both passages: the Persian army must have been having serious supply problems in the days before the battle of Plataea.

So were the Greeks. In ix, 39, Herodotus tells the story of how the Persian cavalry successfully fell "... upon a body of 500 pack-animals which were just entering the plain, bringing provisions to the Greek camp from the Peloponnese..."⁴⁹. Thus, it would seem that the whole issue of supply on both sides was an important factor in this particular campaign. The Persians were sufficiently short of food that it became an issue in their tactical planning, and the Greeks suffered from the harassment of the Persian cavalry, which was determined to create a supply shortage for the enemy as well.

That issues of supply should have been a serious concern on both sides in August of 479 is not surprising, if one considers events on a broader scale both in space and in time. The Persian army had cut itself loose from its grain storage depots in July of 480, when it marched south from Therma to Thermopylae. From then onwards forage must have been an

⁴⁹ Burn (1962: 528, n. 39) prefers the translation "yoked beasts", implying wagons were being used rather than pack-horses. The issue is of no importance given the kinds of calculations we are doing here, for, if carts rather than pack-horses were used, then the amount of grain transported per animal probably would have been even *less* than we are allowing for (250 pounds per horse). On the inefficiency of ancient carts for military supply, see Engels 1978: 15-16, and esp. 128, n. 26.

important element in the Quartermaster General's plan to feed the army. As the Persian troops spread out across Boiotia in their dash from Thermopylae to Athens, they would have been under orders to gather in all the grain and fodder possible and to burn, or otherwise destroy, what could not be used. The Greeks too, as they retreated toward sanctuary on the island of Salamis, would have stripped the countryside of all the comestibles they could carry. By the end of September, 480, the landscape from Therma to Athens must have been a wasteland.

And there would have been little anyone could have done about this, for ploughing and planting would have been almost impossible anywhere in Attica, or even in much of Boiotia—indeed, in any region under immediate threat from the Persians. This is the situation referred to by the Spartan delegation to the Athenians, when they offered to feed the women and non-combatant population of Athens for the duration of the war because of "... the loss of your harvest these two years ..." ⁵⁰. The two years must refer, first, to the year just past (480) and all its devastation, and second, to the coming year, for which there would be no harvest because the continuation of the war had destroyed the agricultural year. Thus, by the time the climax of the war took place in August, 479, both Greeks and Persians had been fighting and manoeuvring for some months across a countryside long since stripped of supplies. Indeed, we must picture all of the military events of at least spring and summer of 479 as taking place in a situation where supplies for men and horses had to be brought from regions quite distant from the front. It is not surprising, therefore, to read that the Greek supply train, which the Persians attacked so successfully, had come all the way from the Peloponnese.

With these facts in mind, let us take a brief glance at what demands an army of 70,000 men and 10,000 horses would have put on the Persian commissariat over the total campaign of 479 ⁵¹. In that time the Persian soldiers would have eaten 63,000,000 pounds or 31,500 tons of grain, and their horses would have consumed 30,000,000 pounds (15,000 tons) of grain, and a similar tonnage of fodder. This would have required the Persian supply forces to mount a total of 512,500 pack-horse loads of grain and fodder (123,000,000 pounds of grain and fodder divided by 240

⁵⁰ H. viii, 142.

⁵¹ I have estimated the total time lapsed between Xerxes' return to Asia and the battle of Plataea as being approximately 300 days.

pounds per horse), assuming that such supplies were *always available only a one-day march away from the army*.

While Mardonius and his army wintered in the countryside of Thessaly, perhaps no large body of troops was housed much more than a one-day march for the pack-horses away from either a storage depot or a foraging area. It may also have been the case, of course, that the troops were spread out widely across the countryside in order to find sufficient space and accommodation for men and horses. Each further day of travel for the pack-horses would have put an even greater strain on the Persian commissariat. Once spring came and the army marched south to Boiotia and Attica, supply problems would have been compounded. Suppose, for the sake of the discussion, that during the winter the Persians had managed to develop a well stocked supply depot at Larissa. Come spring, once the army had moved south of Thebes, where certainly no forage was possible, grain would have had to be brought overland to feed men and animals. Larissa to Plataea is about a thirteen day trip for pack animals, and moving supplies over such a distance would require a total of almost 90,000 horses⁵². Such figures are the stuff of a general's nightmares. They are also, of course, plain nonsense and force us to at least one conclusion: the Persians must have been able to establish supply bases further south than Larissa over the winter of 479. Though they almost certainly did, nevertheless, these kinds of calculations still demonstrate the magnitude of the Persian supply problem, and strongly recommend a second firm conclusion: the army of Mardonius could not have numbered 70,000 men and 10,000 horses.

These simple and rather crude calculations do not take account, of course, of still other factors which must by 479 have seriously influenced the Persian supply situation. Stores laid up along the coast and inland between the Hellespont and Therma prior to the start of the invasion in 480 would, by the spring of 479, probably have been close to exhausted by the advancing Persians, and by those troops who returned to Asia with Xerxes after Salamis. Indeed, Herodotus confirms such supply shortages in his description of the privation experienced by the withdrawing troops

⁵² The effective carrying capacity of a horse on a 13-day trip is 120 pounds (250 pounds less the 130 pounds the horse eats *en route*). To feed 70,000 men and 10,000 horses from such a distance would require a total of 3,416 pack-horse loads of grain and fodder to be delivered each day—hence, roughly 90,000 horses (44,408 loaded and moving forward, and an equal number unloaded and returning to the depot).

in 480, who "... seized and devoured whatever corn they could find belonging to the inhabitants; while if no corn was to be found, they gathered the grass that grew in the fields ... and so fed themselves"⁵³. Persian opportunities to replace these consumed supplies by sea would have now been curtailed, for the Persian command of the sea was restricted by the loss at Salamis. Throughout the campaign the Persian fighting ships lay in the waters around Samos. While the Greeks were no more venturesome, spending most of 479 in the area of Delos and Mykonos⁵⁴, the threat such a recently victorious battle fleet posed to Persian shipping further north in the Aegean must have been considerable. At a minimum, the potential for Greek naval intervention must have had a moral effect on Persian logistical planning, which would have greatly slowed grain and fodder supply by sea, perhaps as far north as the upper coast of Thessaly. Almost certainly it would have hindered steady supply by sea to points as far south as the bay of Lamia, which the Greek battle fleet at Mykonos could have reached in less than half the time it would have taken the Persian navy to get there from Samos.

It is fair to wonder, therefore, just how secure Mardonius' supply situation may have been even during the winter in Thessaly. It is certain that every step he took south come the spring campaign made the supply situation more precarious, and created acute strain on the Persian commissariat.

In conclusion, now having some grasp of the raw data of Persian logistical needs in both 480 and 479, what can be said about the probable size of the Persian armies that marched south of Thermopylae to Athens under Xerxes and that fought the battle of Plataea a year later?

Unfortunately, very little. These kinds of practical logistical arguments are useful mainly to show that modern scholarly estimates of the size of the Persian army and navy in 480/479 are almost certainly exaggerated, even when on the conservative side. We cannot, however, use the same kinds of argument to build a positive conclusion. The critical question, given the constraints of the supply situation and the carrying capacity of a pack-horse, is: what would be a reasonable number of troops to take from Therma to attack Thermopylae and Attica? We cannot answer because, just as we have no accurate information in the ancient sources on how

⁵³ H. viii, 115.

⁵⁴ Burn 1962: 501-502.

many soldiers were in Xerxes' army or ships in his navy, so we have no accurate counts of the horses available to supply that army and navy. All we can assert is that Xerxes did not have 4,710,000 pack-horses available to him when he marched south from Therma, nor did Mardonius have some 90,000 such animals available for the campaign of 479.

Let us remember Maurice's cautious conclusion that 210,000 men and 75,000 animals "is the probable limit to the size of the Persian army which crossed from Asia into Europe"⁵⁵. We can see clearly that, in the tradition of modern western scholarship, even General Maurice was trying to maximize the numbers in the Persian army. Yet, wisdom led him to say that any army of that size was the maximum that *could* have crossed the Hellespont — *not* the size of the army that *did* cross. Let us, however, agree to the maximum just for the sake of argument, although all the other demands on the Persian military discussed earlier probably preclude the possibility of Xerxes actually marching with the largest army he could physically get across the Hellespont and on to Doriscus. Be that as it may, 210,000 troops crossing into Europe could not have meant 210,000 troops advancing from Doriscus, or marching south from Therma, or drawn up at Thermopylae, or pouring into Attica, or watching the battle of Salamis. Troop requirements for garrison duty, route protection, anti-guerilla action, engineering works, port guards, and supply services in general would have reduced greatly the number of combatants which finally faced the Greeks in battle and captured Athens. Sickness and desertion would have further cut into the force the Great King could bring to bear at the critical point, "the killing zone" in battle⁵⁶. And most all of these same

⁵⁵ Maurice 1930: 224.

⁵⁶ As I have suggested briefly in the text, the number of men any general takes on a campaign is always far more than ever can be brought to battle. This must have been very much the case for the Persians in 480/479, less so for the Greeks. The Persians had marched a very long way, had long supply lines to protect, and campaigned for over a year in hostile territory. The Greeks were fighting close to home with friendly territory, the Peloponnese, at their backs. Yet even when battle comes it is often not the number of men you put into the field that counts. Rather the issue is usually decided by the number of soldiers a general can get into what Keegan has aptly called the "killing zone" — the thin line within a battle along which the weapons in use at the time permit a man to kill: Keegan 1976: 194 f. Greek victory at Plataea may well have resulted from the hoplites' ability to extend their "killing zone" in relation to the Persians. An analysis of the battle along these lines might provide profitable data for another paper. (For an excellent example of the power of an extended "killing zone" in an ancient context see Delbrück's description of the battle of Cannae: Delbrück 1913: 35-40.)

factors would play a role in limiting Mardonius' effective battle force, even if he had been left an army of 70,000 men and 10,000 cavalry horses when Xerxes departed for Sardis. Yet, in the end, it remains beyond the powers of the historian to produce anything like a convincing argument as to how many troops of the original *potential* 210,000 would have been so absorbed into duties other than combat and, thus, it is impossible to calculate the actual numbers of Persian troops the Greeks had to defeat.

So, the argument on numbers has reached something of a dead end; the logistical facts of military life cannot easily be manipulated to answer the critical question of how many Persians invaded Greece in 480 and how many the Greeks actually fought. This is so precisely because the ancient source fail to provide us with the kinds of data necessary to generate such figures. We do not know because Herodotus has not told us, and that is where the matter must rest — at least as far as the numbers themselves are concerned. If pressed, however, I might suggest that the odds in 480/479 could have been almost even; yet, if they were not, any modest superiority in numbers the Persians may have enjoyed did not save Xerxes and Mardonius from their Waterloo.

But, there is more to it than just numbers; and thus, we are brought back to the problem of the "Great Event". Not only did Herodotus fail to provide us with the data necessary to work out the size of the Persian armed forces sent against Greece in 480, by whatever clever line of reasoning, or useful application of military analogy, but he also gave us a lot of clearly incorrect statistics, and the history of modern discussions of the size of the Persian forces shows clearly the truth of the old axiom that incorrect information can be, and often is, worse than no information at all.

By attempting to heighten his reader's sense of a "Great Event", Herodotus has led us astray. Greek victory was in truth remarkable: Thermopylae, Salamis, and Plataea are battles of prime importance in the history of both Europe and the Near East.

Yet, with his vision of this reality as rivalling the stuff of epic, Herodotus had to write the history of these crucial victories in such a way that they became a "Great Event", transcending historical reality — and in that form they have coloured western thought for centuries. In search of larger-than-life heroes, Herodotus exaggerated the odds against the Greeks beyond the possible, and, though no modern historian believes his figures, the power in the concept of the "Great Event" continues to influence the

thinking of western ancient historians, including practical soldiers like General Maurice. So it is that even at our most cautious, we tend to follow in the footsteps of the Father of History and continue to make the odds against the Greeks overwhelming beyond the limits of military logic⁵⁷.

As with the muster roles of the Persian army and navy, so also with the results of Greek victory; the west remains enmeshed in the concept and the implications of the "Great Event". The Greek perspective on 480/479, as encoded in Herodotus, has become the later European view of the Persian Wars. Remember (and European schoolboys for hundreds of years have not been allowed to forget) that democracy survived the onslaught of oriental despotism because Europe won at Salamis and Plataea. Never mind that it was the Achaemenid kings who earlier (albeit out of political expediency) had supported the democrats in Ionia, while some of the Greek city states supported the despots. Set aside, in this context, any concern over the extent to which the Athenian Empire, surely one of the more direct results of the Persian loss in 479, was on the whole anything but democratic. Ignore the valid observation that Persian rule was then fairly consistently tolerant throughout the Achaemenid Empire, with subject peoples in the main left to govern themselves and to pursue their own cultural goals in peace. And for the moment, forget that Alexander the Great, a purely European product, represented the greatest concentration of political and military power in the hands of a single man up to his time (and such is an acceptable definition of despot, oriental or otherwise). Instead, focus attention on the "Great Event", which was great, in part, because it was the saving of Europe by the few against the many from a fate worse than death.

⁵⁷ Caution has almost always tempered scholars who have addressed this issue. To pick but two possible examples amongst many: Burn (1962: 511) went so far as to suggest that the Greeks may have outnumbered the Persians at the battle of Plataea, and writing in 1900 Bury remarked, "There is every reason for supposing that the land forces may have amounted to perhaps 180,000. A larger force than that would have been unmanageable in a small mountainous country, and the difficulties of provisioning even this were formidable: (Bury 1951: 269). I do not wish to suggest that sound scholarship has consistently been led into irresponsible conclusions by the artistry of Herodotus, but I do argue that for historical reasons none of us has been cautious enough (Delbrück and his school of thought being an exception). Yet, had Bury followed up on his observation about difficulties of supply he would have found that 180,000 men for the Persian land forces was too many; and Burn is not cautious enough when he concludes Mardonius commanded as many as 70,000 troops. Finally, by inference I think it follows from my argument that probably even modern estimates of the size of the Greek forces involved in this war are too high.

Yet, what such a fate would have been for either mankind, or, more narrowly for Europe, is an "if" of history which is not worth pursuit. My purpose here is met when the reader is willing to accept that the concept of Europe saved from the horror of oriental despotism at Salamis and Plataea is one particular to a Greek/European perspective on those battles, a perspective much influenced by the historiography of Herodotus when he sought an heroic "Great Event" in the Persian Wars.

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