Figure 1. The Eastern Mediterranean: Major sites destroyed in the Catastrophe

GREECE
1. Teichos Dymaion
2. Pylos
3. Nichoria
4. The Menelaion
5. Tiryns
6. Midea
7. Mycenae
8. Thebes
9. Lefkandi
10. Iolkos
11. Kydonia
12. Knossos
13. Troy
14. Milefous
15. Mersin
16. Tarsus
17. Fraktin
18. Karaoglan
19. Hattusas
20. Alaca Höyük
21. Magat
22. Alishar Höyük
23. Norguntepe
24. Tille Höyük
25. Lidar Höyük
26. Palaeokastro
27. Kition
28. Sindia
29. Enkomi
30. Ugarit
31. Tell Sukas
32. Kadesh
33. Qarna
34. Hamath
35. Alalakh
36. Aleppo
37. Carchemish
38. Emar
SOUTHERN LEVANT
39. Hazor
40. Akko
41. Megiddo
42. Deir 'Alla
43. Bethel
44. Beth Shemesh
45. Lachish
46. Ashdod
47. Ashkelon

* At sites in italics destruction in the Catastrophe is probable but not certain.
Chapter Nine

Preface to a Military Explanation

of the Catastrophe

The catastrophe can most easily be explained, I believe, as a result of a radical innovation in warfare, which suddenly gave to "barbarians" the military advantage over the long established and civilized kingdoms of the eastern Mediterranean. We shall see that the Late Bronze Age kingdoms, both large and small, depended on armies in which the main component was a chariot corps. A king's military might was measured in horses and chariots: a kingdom with a thousand chariots was many times stronger than a kingdom with only a hundred. By the beginning of the twelfth century, however, the size of a king's chariotry ceased to make much difference, because by that time chariotry everywhere had become vulnerable to a new kind of infantry.

The infantries that evidently defeated even the greatest chariot armies during the catastrophe used weapons and guerrilla tactics that were characteristic of barbarian hill people but had never been tried en masse in the plains and against the centers of the Late Bronze Age kingdoms. The Medinet Habu reliefs indicate that the weapons of Rameses' opponents were javelins and long swords, whereas the traditional weapon of the chariot corps was the bow. Neither the long sword nor the javelin was an invention of the late thirteenth century: a long slashing sword had been available in temperate Europe for centuries, and the javelin everywhere for millennia. Until shortly before 1200 B.C., however, it had never occurred to anyone that infantrymen with such weapons could outmatch chariots. Once that lesson had been learned, power suddenly shifted from the Great Kingdoms to motley collections of infantry warriors. These warriors hailed from barbarous, mountainous, or otherwise less desirable lands, some next door to the kingdoms and some far away.

Before attempting to demonstrate these generalizations, I must make some apologies. Warfare in the preclassical world is a subject on which we evidently will never know very much. We have some idea what warfare was like in fifth-century Greece, and a few Roman battles can be reconstructed in detail. By extension, we can imagine at least the outlines of battles fought by Archaic Greeks and Romans. But beyond ca. 700 questions begin to multiply, and about the second millennium we are grossly ignorant. After surveying what is known and can be known about warfare at Ugarit, Jean
Nougayrol concluded that "malheureusement, nous ne savons pratiquement rien sur l'armée qu'Ugarit pouvait alors mettre sur pied." On many questions one can only guess, and since guessing seems unprofessional, historians do as little of it as possible. The result, however, is that for lack of evidence one of the most important things about the preclassical world is largely ignored. There is good reason to think that the evolution of warfare made and unmade the world of the Late Bronze Age. Even though we cannot be certain about this evolution, and especially about its details, it is time that we begin to guess.

The description of Bronze Age and early Iron Age warfare would ordinarily be the task of the military historian. For some time, however, military history has been of little interest to professional scholars. During its golden age, in the late nineteenth and early twentieth centuries, the subject was utilitarian and pragmatic, written by and for men who had considerable military experience. One studied it in order to win wars. The study of ancient military history culminated in Germany, with the first volume of Hans Delbrück's Geschichte der Kriegskunst and the magisterial works of Johannes Kromayer and Georg Veith. Since World War II military history has been—quite understandably—in bad odor in most academic circles.

Since a general survey of preclassical military history is so novel and
difficult an undertaking, it is not surprising that the subject is ignored even
in some books whose subject is ostensibly “war in the ancient world.”
Scholars venturesome enough to write on Near Eastern military history
must expect to be embarrassed by occasional pratfalls. A case in point is the
fairly recently published Warfare in the Ancient World, edited by General

Drews, Robert. The End of the Bronze Age. Changes in Warfare and the
Sir John Hackett. Each chapter of this very useful book is written by a scholar of high distinction. The eight chapters beginning with Archaic Greece and ending with the Later Roman Empire cover ground that has been trod for centuries and is now quite exquisitely mapped, but the two chapters on the pre-Persian Near East—by prehistorian Trevor Watkins and Assyriologist D. J. Wiseman—explore what to a great extent is still a terra incognita. Here one encounters, amid a variety of archaeological illuminations and Assyriological clarifications, a few impossible items: bows with a range up to 650 meters, Bronze Age chariots pulled by four-horse teams, and Assyrian chariots with iron undercarriages. Nevertheless, the overviews furnished by pioneers such as Watkins and Wiseman far outweigh the occasional mistake on particulars.

Having no credentials as a military historian, I shall undoubtedly furnish future scholars with ample opportunity for mirth and correction. But a generalist of the rankest order, with no inhibitions against guessing when evidence fails, should be in as good a position as anyone to reconstruct the general evolution of warfare at the end of the Bronze Age and beginning of the Iron Age. Because the Catastrophe was followed by a dark age, productive of neither written nor pictorial evidence, the military history of this period is especially obscure. In both the Aegean and the Near East, the period between the reign of Ramesses III and Ashurnasirpal II is pictorially almost a total blank, relieved only by the stelae of “Neo-Hittite” kings in northern Syria. Yet there is reason to believe that the decades around and after 1200 B.C. were among the very most important in the evolution of warfare in the ancient world. The next chapters will accordingly attempt to sketch in at least its broad outlines how warfare changed at the end of the thirteenth century and the beginning of the twelfth.

Some innovations in weaponry at the end of the Bronze Age have been noticed, especially by scholars who work closely with the material record. Archaeologists have known for a long time that at the end of the III B period

18 Watkins, “The Beginnings of Warfare,” 15–35; and Wiseman, “The Assyrians,” 36–53. The bibliography included for Watkins’s chapter (Warfare, 250) contains three items: Yadin’s Art of Warfare, Breasted’s Ancient Records of Egypt, and Luckenbill’s Ancient Records of Assyria and Babylonia. In contrast, ten works—all studies in military history meant for the professional scholar—are listed for Lazenby’s chapter on the Greek hoplite.
19 On the absence of artistic evidence on military matters in the Aegean during this period see Desborough, The Greek Dark Ages, 306: “Between the early twelfth century and the eighth there exists no figure or figure of a warrior, nor any representation of such in vase painting, with the single exception of the two confronted archers at Letkandi.” Nor are things much better for the Near East. The lack of evidence there almost persuaded Yadin to “write off” the Iron I period as “a kind of transitional period about which nothing on warfare could be known” (Art of Warfare, vol. 2, 291; cf. p. 247: “Our sole source for the first part of the period is the many reliefs of Rameses III.”).

several items of defensive armor—greaves, certainly, and a smaller shield—proliferate in the Aegean, as did the Naue Type II sword (on the Near Eastern side, where the transformation in warfare was radical, there has been less attention to it). Jeremy Rutter has in fact noted that in the post-palatial Aegean “the changes in virtually all forms of offensive and defensive weaponry . . . are remarkable for the comprehensiveness of their range and the rapidity with which they are effected.” But although these material changes have been recognized, their historical significance is too little appreciated, apparently because the nature of warfare in the Late Bronze Age is so imperfectly understood. Tentative suggestions have occasionally been made. Nancy Sandars, for example, alluded to “a new form of attack introduced with the flange-hilted sword,” and James Muhly observed that the appearance of greaves and slashing swords points to “the introduction of a new style of fighting. The tactics now were not just to thrust but also to cut or slash, especially at the legs of your opponent.” If the changes in weaponry and tactics are fully explored, and especially if their impact upon chariot warfare is imaginatively assessed, I believe that they will furnish as good an explanation for the Catastrophe as we are likely to find.

Rutter, “Cultural Novelties in the Post-Palatial Aegean World: Indices of Vitality or Decline?” in Ward and Joukowsky, Crisis Years, 67.
21 Sandars, Sea Peoples, 92.
22 Muhly, “The Role of the Sea Peoples,” 42. Catling, with whom the idea originated, temporarily abandoned it when the Dendra greaves (dating ca. 1400) were found; see Catling, “A New Bronze Sword from Cyprus,” Antiquity 35 (1961): 122.
Those who survived the Catastrophe resorted to new strategies against the probability that the raiders would return. On Crete the small and lowlying settlements were abandoned for "cities of refuge" in the mountains. The Arcado-Cypriote dialect suggests that many South-Greek speakers from the Peloponnesian and central Greece fled in two directions, some to the mountains of Arcadia and others to the island of Cyprus. The flight to Ionia, on the other hand, seems to have occurred several generations after the Catastrophe ended.

If towns built in the twelfth century were not in the mountains, they were on the seacoast. On Cyprus, as well as in Phoenicia and Greece, large

coastal towns were built and fortified, and the coastal cities of the Via Maris were rebuilt and strengthened (with refugees from Crete probably seeking asylum there). The size of the twelfth-century towns indicates a belief that there was safety in numbers. The coastal location may have been preferred for several reasons. It provided, first of all, the optimum vantage point for spotting hostile ships long before they reached the shore. A city on the coast, even if it housed few hand-to-hand fighters, was also able to take some effective offensive measures against raiders who came by sea. As Ramesses’ sea victory had shown, one very good way to confront a seaborne horde of hand-to-hand skirmishers was to keep them from reaching land. On board their ships the skirmishers were vulnerable, since they had no bows (the man fortunate enough to own a composite bow would have found it warped and deteriorated after several days in an open boat). It is therefore possible that a few of the coastal towns continued to count on archers, now shooting from coast-guard ships instead of from chariots. It is more likely, however, that coastal locations were chosen for defensive reasons: a city on the coast might be able to withstand a siege, while a city in the interior could be entirely cut off.

But no civilized society could defend itself without putting into the field infantrymen equipped for hand-to-hand combat. Against the new peril new weapons were required, and new pieces of armor. In Greece especially we can see that the Catastrophe created the armored footsoldier, protected by a helmet, corset, greaves, and a round shield. A short thrusting spear was most important as the weapon of men who took their position in close-order infantry formations. For professional skirmishers, who might confront the enemy in man-to-man combat, a long sword was required against the long swords of the predators. The manufacture of cut-and-thrust swords began in Merneptah’s time, as the unusable “Merneptah sword” from Ugarit shows. The Aegean productions found at Mouniana, Mycenaean, and Perati are clumsy experiments, but better designs were soon found. Had there been time to hilt them and edge their blades, the four unfinished swords from the high-priest’s house in Ugarit would have been formidable weapons. In the IIIC Aegean, however, what those who could afford it wanted was the terrible Grifzungsenschwert that had long been traditional in northeast Italy and the Balkans. The cartouche of Seti II on a specimen found in Egypt shows that there too some of the pharaoh’s warriors acquired the very best slashing sword that could be found.

Although weapons and armor were important, even more important were men who could use them, and on this matter the Catastrophe introduced profound changes. In the Late Bronze Age kingdoms warfare had been a specialist’s concern. Civilian conscripts were apparently used only for defense, and massed offensive infantrys were conspicuously absent when Late Bronze Age kingdoms (except, perhaps, for Assyria) went to

war. After the Catastrophe, political power belonged to those societies in which warfare was every man’s concern, the adult males of a community serving as its militia. The Warrior Vase from Mycenae suggests that in the twelfth century at least some men of Mycenae were learning how to march and fight in close-order formations, depending on the thrusting spear and on the new elements of defensive armor. But neither at Mycenae nor in most other civilized communities could a “warrior ethos” have developed in the immediate aftermath of the Catastrophe, and military prowess tended to be associated with the less civilized frontier societies. It is likely that the “Dorians” were North-Greek speakers who became proficient as close-order spearmen. In the Iron Age Levant, communities such as Philistia, Israel, Moab, Ammon, and Aram (in eastern Syria) depended on mass infantry. We need not believe, with the biblical author, that in David’s kingdom there were 1,300,000 “able-bodied men, capable of bearing arms.” But the militia was apparently counted in six figures, and we can perhaps take the author’s word for it that when David wished to curse Joab, the best he could think of was “may the house of Joab never be free from running sore or foul disease, or lack a son fit only to ply the distaff.”

Typically these frontier societies coalesced into “nations,” the nation being a coalition cohesive enough and large enough to defend itself against any foreseeable aggression.

The solidarity of an Iron Age community, whether of a polis or of a nation, stemmed from the recognition that in war the fortunes of the community would depend on every man playing his part. Against mass formations of close-order infantry, the formations being controlled by an efficient chain of command, disorganized hordes of running skirmishers would have been outmatched. The kind of solidarity required in the Iron Age was, with rare exceptions, unnecessary and therefore unknown in the Late Bronze Age, since prior to the Catastrophe a king’s subjects were amply protected by the king’s chariots and chariot runners. The military revolution that occurred in the Catastrophe was thus a prerequisite for the social and political changes that made the world of the Iron Age so different from that of the Late Bronze Age.

19 2 Samuel 24.9; 2 Samuel 3.29.
20 On nationalism in the early Iron Age see Liverani’s discussion of “il fattore gentilizio e lo Stato ‘nazionale,’” in his Antico Oriente, 654–69.
Chapter Six

DROUGHT

As the Iron Working hypothesis lost its credibility, archaeologists and historians in the English-speaking world began to explore other possible reasons for the Catastrophe. One of the most attractive alternatives has been the drought hypothesis: the upheaval ca. 1200 B.C. was the result of a drought of unprecedented proportions. This hypothesis is not entirely new, since it was at least mentioned more than a century ago. But the present-day hypothesis is obligated especially to the argument put forward by Rhys Carpenter in the 1965 J. H. Gray lectures at Cambridge University and published the following year.

Carpenter’s thesis was that the Bronze Age centers of Greece fell victim to an intense and prolonged drought and to the disorders occasioned by the drought. The thesis was inspired by the facts that (as Vincent Desborough had shown in 1964) there was no evidence for a migration into Greece ca. 1200 B.C., and that many places were not destroyed but abandoned at that time. Arguing from these facts, and from Plato’s demythologized interpretation of the Phaethon myth, Carpenter proposed that ca. 1200 the eastern Mediterranean suffered a drought so severe that many people were forced to leave their homes. As for those places that were destroyed, Carpenter suggested that because they were storehouses of grain and other foodstuffs they fell victim to a “final resort to violence by a drought-stricken people.” Sites destroyed a generation or two after 1200 may have caught fire because of lightning strikes or other random accidents.

Carpenter’s little book became an immediate bestseller by scholarly standards and brought the drought hypothesis to the forefront in English language scholarship on the Catastrophe. Among European scholars the hypothesis has been less popular: although occasionally admitted (as, for example, by Strobel) as a “triggering factor” for folk migrations, drought

1 Cf. Sayce’s note, at Maspero, Struggle, 462: “W. Max Müller (Asien und Europa, p. 359) believes that the invasion was caused by the famine, during which Mineprefer supplied the Khay with corn.”


3 Ibid., 69.

was hardly mentioned by the fifteen participants in the Zwettl symposium. But in Britain, Canada, and the United States the drought hypothesis has been extended to account for the end of Bronze Age civilization in general. Perhaps contributing to this extension was Claude Schaeffer's surprising deduction that the earthquake that ruined Ugarit had been preceded by many years of abnormally hot and dry weather. At any rate, climatic explanations for the end of Bronze Age civilization have been prevalent in English-language scholarship on both the Aegean and the Near East for the last twenty years: drought has been found responsible for the Catastrophe in the Levant and Hittite Asia Minor and even for the subsequent decline of Mesopotamia. Most drought hypotheses assume that hungry people—whether violent locals, raiders, or migrating nations—were the proximate cause of the destruction of cities and palaces. Some introduce a "systems collapse" (see chapter 7) as the second term in the sequence, the final term being either an internal uprising or an attack from the outside.

Although it may be that drought was a precipitating factor for the Catastrophe, whatever role it played is likely to have been too early and limited to warrant the conclusion that the Catastrophe was in any way the "result" of a drought. Despite an intense search, evidence for a radical change in weather patterns over all of the eastern Mediterranean in the late thirteenth and early twelfth century has not yet been found. Arguments have been made that in the period 1400-900 the entire northern hemisphere was hotter and drier than normal, the arguments being based on the tree-rings of California's bristlecone pines and on the evidence for fall of lake levels in Switzerland and for the advance and recession of glaciers in the Himalayas. Contrarily, it has been maintained that from a peak of aridity ca. 1500 B.C. the weather became colder and rainier for the next three centuries, culminating ca. 1200 in a "little ice age." Whichever of these diamet-

5 Schaeffer, "Commentaries," 760–62. Schaeffer based his opinion on the presence of a yellow and powdery sand that permeated the destruction level (which in places was two meters thick) all over the site at Ras Shamra. The pale powder bathed everything "qui reste des bâtiments ravagés par les tremblements de terre et les incendies de la fin d'Ugarit." The import of this was very clear: the "couche de poussière jaunâtre ou blanchâtre... témoigne, sans aucun doute possible, d'une période d'extrêmes chaleur et de sécheresse à la fin de l'existence d'Ugarit." The yellowish powder is more conventionally seen as a result of the burning of brick and stone structures.


8 M. Liverani, "Variazioni climatiche e fluttuazioni demografiche nella storia araba," Or.
rically opposite scenarios is preferred, the geographical and chronological frames of reference are here so vast that they do not help very much.

A more promising possibility is that shortly before 1200 isolated regions—parts of Anatolia, and perhaps Libya's north coast—experienced one of the “normal” droughts that can be expected at least once in every generation. Some documentary support for such a possibility comes from Merneptah’s Great Karnak Inscription, which celebrates Merneptah’s victory over Meryre and his Libyans.9 Merneptah says here that Meryre and his warriors “spend the day roaming the land and fighting to fill their bellies daily; they have come to the land of Egypt to seek food for their mouths.” Although Merneptah’s complaint could mean nothing more than that Meryre’s soldiers had no source of livelihood other than their weapons, it could also indicate that there were food shortages in Libya. In the same inscription, Merneptah reports that he had sent grain to the king of Hatti, “to keep alive that land of Kheta.” A bit of physical evidence pointing to an Anatolian drought has been produced from Gordion: a series of narrow tree-rings in a juniper log unearthed at that site suggests that western Anatolia may have had several dry years ca. 1200.10 It therefore may be that in 1208 a shortage of food was a factor in Meryre’s aggression. His objective may have been to take over part of the western Delta and so to be in control of a major source of grain at a time when grain was unusually valuable.

A moderate drought in Anatolia and possibly elsewhere ca. 1208, however, cannot be directly linked to the destruction of cities from 1225 to 1175. Appropriation of fertile fields was evidently not on the agenda of whoever it was who sacked Troy, Mycenaean, Pylos, Hattusas, and Ugarit, since apparently none of these places was taken over by new settlers. If there was an Anatolian famine shortly before 1200, it was localized enough that adjacent areas were hardly affected. For Greece itself no botanical or geological evidence has yet been found for a drought.11 This point was

11. Environmentalists and climatologists R. A. Bryson, H. H. Lamb, and David L. Donley, “Drought and the Decline of Mycenaean,” Antiquity 48 (1974): 46, welcomed Carpenter’s thesis and hoped to support it. Although they offered no evidence for an early twelfth-century drought, they did point out that in the winter of 1954—55 Greece experienced a drought pattern very much like that which Carpenter had postulated for the years ca. 1200 B.C. Whether the parallel strengthened or weakened the appeal of Carpenter’s thesis is unclear. For an archaeologist’s rebuttal to both the article and the Carpenter thesis on which it
made by a historical climatologist as early as 1968 and is apparently still valid.\textsuperscript{12}

Recent excavations have in fact shown that Carpenter’s picture of drastic depopulation in the twelfth-century Argolid was incorrect. We have seen in chapter 2 that scores of small towns, hamlets, and isolated houses in Greece were abandoned early in the LH III C period and that their inhabitants seem to have taken up residence in large towns, especially on the coasts. In the Argolid this resulted in the Aussenwanderung that Killian excavated at Tiryns, which in the first half of the twelfth century was far larger than it had been in the thirteenth.\textsuperscript{13} Other relatively large settlements of the twelfth century have been found, as noted, on Crete, Rhodes, Cyprus, and the coasts of Asia Minor.\textsuperscript{14} We may therefore generalize that after the Catastrophe people in the Aegean and on Cyprus began collecting themselves into centralized or defensible locations. The abandonment of small communities in these areas is therefore not attributable to a drought.

Nor can legend be made to produce evidence for a catastrophic drought in Greece. Homer and Hesiod seem unaware of any tradition that the Age of Heroes ended in a famine. Several scholars have cited Herodotus 1.94 as a memory of a calamitous drought in Lydia ca. 1200 B.C. But there is little chance that the eighteen-year Lydian famine, which Herodotus dates to the reign of King Arys (a mythical figure who lived many generations before Herakles), is any more real than the Lydian accomplishments that it is intended to explain.\textsuperscript{15}

For a drought in Greece ca. 1200 Carpenter referred to a passage in Plato’s Timaeus. The “tradition” on which Carpenter relied has no connection with Greek oral tradition but came from the “book of the Egyptian priests” that Critias, one of Plato’s literary characters, was wont to cite when about to embark on a story about Athens and Atlantis in the days

\textsuperscript{12} H. E. Wright, Jr., “Climatic Change in Mycenaean Greece,” Antiquity 42 (1968): 125, concluded that in Messenia and in the few other areas of the Aegean (and western Anatolia) for which palaeoclimatological data was available “the pollen curves show no significant inflexion around 1200 B.C.” For a recent assessment see Gordon Shrimpton, “Regional Drought and the Economic Decline of Mycenae,” Echos du Monde Classiques 31 (1987): 142. Shrimpton, who believes that drought was indeed a major factor in the decline of the Mycenaean world, concedes that “there is no geological or ecological evidence for an abnormal drought” in Greece ca. 1200 and therefore advocates a systems collapse as the most important factor in the decline.

\textsuperscript{13} Killian, “Zum Ende,” 171–73.

\textsuperscript{14} For the fivefold growth of Rhodian Ialysos and the parallel with Tiryns see MacDonald, “Problems,” 149.

\textsuperscript{15} Drews, “Herodotus 1.94,” 15–16 and 28–33.