

# Military History to the End of the Eighteenth Century



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**M**ILITARY history's peaks are its great wars, battles, and captains. Underneath are the strata which relate them to political, socioeconomic, and technological developments. The military history of the long years from the first appearance of primitive man to the death of Frederick the Great in 1786 may be broken down into four general periods. The earliest is the millennia before 1000 B.C. when our first civilizations began competing with one another. The following sixteen centuries cover the Iron Age empires from Assyria to Rome; eight more, from 600 to 1400, belong to our Middle Ages, and the final four fit our early gunpowder era.

Over 2,400 years ago the Greek historian Herodotus wrote his *History of the Persian Wars* (c. 444 B.C.) so that "men's actions may not be effaced by time, nor the great and wonderous deeds" of "Greeks and barbarians deprived of renown" and to show "for what causes they waged war upon each other" (p. 1 of translation listed in bibliography). A century later and thousands of miles distant, the Chinese philosopher Sun Tzu taught that "war is a matter of vital importance to the state; the province of life and death. . . . It is mandatory that it be thoroughly studied" (*The Art of War*, p. 63). Since that time men have written at length about the great wars, battles, and captains and have tried with varying success to relate them to the political, social, economic, and technological developments of each era. Most have recognized the limitations as well as the advantages of such work. It is difficult to imagine what made an eighteenth-century redcoat fight or how his government worked, and even harder to understand the motives of a Greek hoplite or his Persian foe. Thus, while political scientists may usefully apply historical insights to present problems, the complexities of such transferences should not be underestimated.

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## General Works

The one work that covers Western military history to the death of Frederick the Great is Oliver L. Spaulding, Jr., Hoffman Nickerson, and John W. Wright's *Warfare: A Study of Military Methods from the Earliest Times* (1939). Thomas R. Phillips's (ed.) *Roots of Strategy* (1940) is equally useful, although the author left out Vegetius's books on fortification and naval operations as "of interest only to military antiquarians." The writings of Sun Tzu, Vegetius, Maurice de Saxe, and Frederick go very well with the Spaulding, Nickerson, and Wright text. Lynn Montross's *War Through the Ages* (1960) is fine battle history. Richard A. Preston, Sidney F. Wise, and Herman O. Werner's shorter *Men in Arms: A History of Warfare and its Interrelationships with Western Society* (1970) is a better study of the underlying factors of war. The best general reference work is R. Ernest and Trevor N. Dupuy's, *Encyclopedia of Military History from 3500 B.C. to the Present* (1970). Half of its 1,400 pages cover the years before 1800. Each regionally oriented chronological chapter begins by surveying general trends; the battle descriptions, maps, and line drawings are excellent. Viscount Montgomery of Alamein's *History of Warfare* (1968) is the best illustrated general work. Two-thirds of it carries the story to 1789; the author's quirks are most apparent in his treatment of the later period. The narrative does not quite match the quality of J. F. C. Fuller's *Military History of the Western World* (1954), an expansion of his 1940 *Decisive Battles: Their Influence upon History and Civilization*. Frank A. Kiernan, Jr., and John K. Fairbank (eds.) cover *Chinese Ways in Warfare* (1974), and Bernard and Fawn Brodie's little *From Crossbow to H-Bomb* (1962) is the book on deliberate weapons development. Melvin Kranzberg and Carroll W. Pursell, Jr.'s (eds.) *Technology in Western Civilization* (1967) has sections on technology and warfare, Maurice Dumas's (ed.) *History of Technology and Invention* (1971) is better on non-Western societies and cultures, and Thomas Wintringham's, *The Story of Weapons and Tactics* has been updated and reissued (1974).

There is no good general military historical atlas nor any general survey of military literature, whether defined as purely military or as a literary treatment of warfare. Louis C. Peltier and G. Etzel Percy's fine short *Military Geography* (1966) is concerned primarily with the ways in which geography has affected modern strategy, tactics, and logistics. And modern social scientists have produced so many works on war that any

list would be longer than this chapter. Kenneth N. Waltz's *Man, the State, and War: A Theoretical Analysis* (1959) classifies social scientists by their optimistic or pessimistic assumptions about men, states, and international systems. Robert Ardrey's *Territorial Imperative* (1971) is balanced by Anthony Storr's *Human Aggression* (1968) or by Leon Bramson and George W. Goethals, Jr.'s (ed.) *War: Studies from Psychology, Sociology, Anthropology* (1964); and John Winthrop Hackett's *The Profession of Arms* (1963) and Stanislav Andreski's *Military Organization and Society* (first printing 1954) are modern classics.

Andreski analyzed military organizations in terms of military participation ratios ("the proportion of militarily utilized individuals in the total population"), their subordination to hierarchial authority, and internal cohesion. Subordination implies cohesion but not the reverse as in the case of the medieval crusaders. If Andreski's variables are combined with modern technological, political, and social factors, the resulting model of technological resources, political organization, social cohesion, military participation, military subordination, and weapons technology takes in the factors developed in Quincy Wright's 1942 *Study of War* for a pioneering University of Chicago war seminar. Wright later helped to edit the English meteorologist Lewis Fry Richardson's *Statistics of Deadly Quarrels* (1960), but his figures have been used widely without noting their shaky sources or extending them back to 1820, where the lack of sound statistics hampers studies of the role of war and armaments in economic development. The same problem was also faced by another Chicago seminar member, John U. Nef, whose *War and Human Progress: An Essay on the Rise of Industrial Civilization* (1963) questioned the existence of any symbiotic relationship between military conflict and human advancement.

Weapons tend to be hard, preservable, and even magical objects. Both archaeological evidence and illustrated books are abundant. P. E. Cleator's *Weapons of War* (1968), Howard I. Blackmore's *Arms and Armour* (1965) and *Firearms* (1964), O. F. G. Hogg's *Clubs to Cannon: Warfare and Weapons before the Introduction of Gunpowder* (1968), Edwin Tunis's *Weapons: A Pictorial History* (1954), and Joseph Jobe's *Guns: An Illustrated History* (1971) are worthwhile. Romola and R. C. Anderson's *The Sailing Ship* (1947), R. C. Anderson's *Oared Fighting Ships* (1962), O. F. G. Hogg's *Artillery* (1970), E. M. Lloyd's *A Review of the History of Infantry* (1908), George T. Denison's *History of Cavalry* (1913), Sidney Toy's *History of Fortifications From 3000 B.C. to A.D. 1700* (1955), Quentin Hughes's *Military*

*Architecture* (1975), and George F. Bass's (ed.) *A History of Seafaring Based on Underwater Archaeology* (1972) cover those subjects.

Ralph H. Major's *Fatal Partners: War and Disease* (1941) is a story of the frustration felt by medical personnel in wartime. There are no good short general histories of military medicine, engineering, logistics, or long- or short-range communications. And in spite or because of Alfred Thayer Mahan's influence on historians, this is also true for sea power, navies, and amphibious operations. Björn Landström's *The Ship: An Illustrated History* (1961) is, however, a useful reference on types of naval vessels through the ages, and Robert B. Asprey's, *War in the Shadows* (1975) tells all that you wanted to know about *The Guerrilla in History*.

### *Primitive War and the First Civilizations*

While agriculture could usually support more people than hunting, food-gathering, or herding, farmers might not be superior in weaponry, and hunters or herdsmen might be superior in fighting skill and mobility. Harry Holbert Turney-High's classic study, *Primitive War* (1971), shows that better military organization might follow an advance to agricultural civilization but that organizing large-scale military operations was not beyond the capabilities of many preliterate peoples. The Old Stone, New Stone (Neolithic), Copper, Bronze, and Iron "stages" used by early prehistorians (archaeologists) have in some ways confused things. Polished stone or metal tools and weapons might be no more important to human progress than many other innovations. Plants and animals were domesticated in Southeast Asia by 1300 B.C., and copper and bronze cast there by 4000 B.C., but there was no breakthrough to civilization. Stuart Piggott, *Ancient Europe* (1965, pp. 17ff.), sees "innovating and conserving societies" in "remote antiquity." In the latter "the *modus vivendi* for the community within its natural surroundings" produced "no urgent need to alter the situation" or was "too delicately adjusted . . . and too rigidly conceived" to admit of it. He contends that east Asia's uplands were too friendly and protected to demand further social innovation, though the technical skill of their craftsmen is still observable. If these matters seem far removed from the problems of modern military historians, it may warn them against seeing military history as a simple tale of great captains, great states, or decisive battles and technological innovations.

Most thrown, propelled, and hand weapons and protective devices were invented by preliterate peoples. Our protocities were in the Near Eastern uplands, where food gatherers exploited the natural grainfields and herded sheep, goats, pigs, and cattle away from them. Catal Huyuk in Anatolia, for example, had ten thousand people; its linked mudbrick house walls repelled attackers from 6500 to 5650 B.C. Though its security may have come from its being a neutral trading post or shrine, the problems of attacking a maze of dark chambers accessible only by ladder from the roof are apparent in many later fortifications. Catal Huyuk's people had three wheats, two vetches, barley, peas, and oil plants and made or traded for beer, wine, flints, shells, obsidian weapons and mirrors, copper, iron, and lead beads, and fertility objects. The challenges which produced the first civilizations, however, did not arise or were not met in the Asian uplands but in the fertile valleys of the Nile, Tigris, Euphrates, Indus, and Yellow rivers.

Irrigation made Mesopotamia. The Egyptians had the even more difficult task of taming the Nile to use its annual gifts of new soil, fish protein, and antimalarial scouring. Written records were probably created to predict annual floods. Recovering landmarks and laying out ditches and fortifications demanded engineers and surveyors in both areas. Mesopotamia's political pattern was one of small, fortified, warring cities; an occasional conqueror united them and extended his control over potential upland and desert marauders. Egypt's single ruler had varying degrees of control over local landowners. Professional soldiers served as royal guards for frontier defense and foreign wars, and local militia beefed up last-ditch defenses and furnished local transport. And more metals meant better tools for working wood and stone.

In his *Art of Warfare in Biblical Lands in the Light of Archaeological Study* (1963), Israeli soldier-archaeologist Yigael Yadin uses the first pictured Egyptian battles (Megiddo, 1469 B.C., and Kadesh, 1292 B.C.) to show that special foot, horse, engineer, transport, and marine units already existed when these battles were fought, and that weapons were only recombined and refined until the heavy cavalry revolution at the end of the classical era. Key innovations in this final period were iron weapons, armor, chariots, and cavalry. Yadin discusses mobility, firepower, personal protection, and fortifications for each biblical period. The era before Abraham (4000-2100 B.C.) saw the first civilizations, and the periods from the Patriarchs through the Exodus (2100-1200 B.C.) saw the rise of a common

Near Eastern art of war and the rise and fall of Minoan or Cretan civilization. But military history is not a continuous story until after new land and sea invaders had been absorbed during the era of the Judges and the United Monarchy (1200-920 B.C.).

Egyptians may have invented oars, but their ships were river boats, and the keel plank, ribs, fixed mast, and sail furling gear of the classical "round" trader were Levantine. Arab dhows and Indonesian outrigger canoes sailed their adjacent oceans, but all early sea or caravan traders depended on the goodwill and sometimes on the military aid of powers with greater agricultural resources. The Minoans killed interlopers and bad customers or denied them trade goods until their fragile maritime empire was wrecked by a tidal wave around 1400 B.C. With the Mediterranean people under sail—but surely with some stowed sweeps or oars—round ships appear in the first pictured sea fight off the Nile delta in 1194 B.C. The classical warship, a galley strong enough for ramming, was a later Phoenician or Greek development. The best books are William Culican's *The First Merchant Venturers: The Ancient Levant in History and Commerce* (1966), Michael Grant's *The Ancient Mediterranean* (1969), and Lionel Casson's *Ships and Seamanship in the Ancient World* (1971).

### *The Classical Iron Age Empires*

Assyria dominated the Near East from the tenth through the seventh century B.C. with spearmen, archers, charioteers, and cavalry—city-smashers who massacred or transported whole peoples. The Persians, who took over in the sixth century, were Middle Eastern archers and heavy cavalrymen who relied on water transport from subject Greek or Phoenician cities. Greek heavy hoplite pikemen were formidable foes for horsemen in wooded mountains with many defensible positions. The decisive battles of the wars between Greece and Persia (499-448 B.C.) were Salamis and Plataea about 480 B.C. The former was the occasion of the destruction of the Persian fleet supporting the occupation of Athens, allegedly on the same day that the Sicilian Greeks defeated the Persians' Carthaginian allies off Himera. The latter, Plataea, marked the defeat of Xerxes's land army and the end of the Persian threat to Greece. The best books are Yadin on the Assyrians and Babylonians, Harold Lamb's popularized *Cyrus the Great* (1960), and Peter Green's *Xerxes at Salamis* (1970).

Greek then fought Greek in the Peloponnesian Wars (460-404 B.C.) that destroyed the Athenian maritime empire and established even shorter lived Spartan and Theban hegemonies. J. K. Anderson's *Military Theory and Practice in the Age of Xenophon* (1970) shows how Sparta dominated military affairs in Greece during a period when the country was exporting soldiers to the whole civilized world. But the first great captain who can be linked with a specifically new maneuver was Epaminondas of Thebes, whose oblique order of attack at Leuctra in 371 B.C. ended Sparta's domination.

Philip of Macedon had been a hostage in Thebes, and the close ties between him, his son Alexander (356-323), and the Greek city-states have obscured their similarity to traditional oriental conquerors. The Macedonian conquerors used a deeper phalanx formation and more heavy cavalry than the Greeks, added allies as they advanced, and imposed a new layer of soldiers, bureaucrats, traders, and gods on existing civilizations. Among the best books are F. E. Adcock's *The Greek and Macedonian Art of War* (1957), A. M. Snodgrass's *Arms and Armour of the Greeks* (1967) and E. W. Marsden's *Greek and Roman Artillery* (1969), and F. E. Winter's *Greek Fortifications* (1971). Peter Green's *Armada from Athens* (1970) relates the disastrous expedition against Syracuse, and J. F. C. Fuller's *The Generalship of Alexander the Great* (1960) and Peter Green's *Alexander the Great* (1970) are good studies of a great captain whose empire fell apart when he died but who profoundly influenced history, partly because he inspired so many would-be imitators.

The Romans, or their successors in Constantinople, ruled the Mediterranean from their victories over Carthage, Macedonia, and Syria at the turn of the third century B.C. to the victories of Heraclius I over Sassanid Persia in the seventh century A.D., just before the Arab explosion. But we know much about only a few Roman leaders of these eight centuries; as little, for example, about Heraclius as about Dionysius of Syracuse, whose hegemony in Sicily and Greek Italy was contemporaneous with that of Sparta in Greece proper.

Hollywood storytelling has aided moralizing on Rome's rise and fall, but more general factors are historically safer. Mediterranean metals technology was not as advanced as that of the northern barbarians, but Mediterranean agriculture could support more people. Rome's social cohesion was relatively high. Her great innovation was the political organization of a "Latin League" in which allied or colonial citizens had the same private rights as Romans. With each legion paired with an allied one,

Rome expanded by adding allies, founding colonies, and making more Romans; landless citizens received captured lands in return for long military services. The molding of the central Italian peoples into a united society was also promoted by their related cultures and common enemies. During the Second Punic War, 219–202 B.C., Rome could call on 750,000 men; 250,000 were in her legions from a population of 3,750,000, a military participation ratio of men trained to common standards of military subordination which was seldom reached again before 1786.

In contrast, Greek or Carthaginian colonists had no special rights at home, and Corcyrans were soon fighting their mother city of Corinth. By the third century B.C., deforestation and erosion were affecting the Greek lands, while Carthage never had as much farmland as Rome. Slavery was also a complicating factor. Sparta's military participation ratio seems high until the Messenian helots are counted. The farms and mines of Carthage were worked by bonded peasants or slaves with uncaught relatives in the backlands. Some of them joined rebel mercenaries in the social war which followed the First Punic War of 265–241 B.C.; but when Rome's slaves revolted in 135–132, a Syrian on a Sicilian plantation was far from outside assistance.

The Greek historian Polybius stressed the quality of Roman weapons—how the no-return javelin hooked when it hit; the strength of the iron-edged, iron-bossed shield against heavy Celtic swords and axes; and the effectiveness of the short, two-edged sword against the overlong Eastern pike. The Roman army's nightly camps, their usually good scouting, and their march discipline reflected years of campaigning. They had adopted Greek ships, siege engines, and heavy cavalry spears, and Polybius found them expert at imitating better practice. Modern research has confirmed his position as a great historian, those of Hannibal and Scipio as great captains, and that of Cannae in 216 B.C. as a model battle. Two biographies of Hannibal by Gavin de Beer (1969) and Leonard Cottrell (1961), and H. H. Scullard's *Scipio Africanus* (1970), supplement E. Badian's abridged *Polybius: The Histories* (1966), F. E. Adcock's *The Roman Art of War Under the Republic* (1963), and Chester G. Starr, Jr.'s *The Emergence of Rome as Ruler of the Western World* (1953).

The Roman soldiery was fully professional by the end of the second century B.C. The three-line phalangial legion—with the third line's veterans using short pikes—was replaced by the more uniform and flexible ten-cohort "checkerboard" legion in

which all men carried two javelins and a sword. Men enlisted for up to sixteen years to get land and citizenship from the political generals who fought the civil wars of 88-30 B.C., while winning more foreign land, slaves, and booty. On their greatest captain, Matthias Gelzer's *Caesar* (1968) is better than J. F. C. Fuller's *Julius Caesar* (1969).

Octavian or Augustus Caesar (31 B.C. - 14 A.D.) cut the army to about 300,000 men, not many more than during the Second Punic War two centuries earlier, although the population base of "Rome" had increased tenfold, totalling 50-70 million. By the time of Marcus Aurelius (161-80), marking the height of the Empire, this force had grown to almost 400,000 men drawn from a population of 50-100 million. But two centuries later, a Roman field force of 200,000, supplemented by 350,000 militia, faced growing pressure from barbarian tribes who were shifting from the north and east as their lands were farmed out by a system better suited to the Mediterranean. Rome had abandoned the swamp, deep forest, and steppe lands of central Europe and stabilized its frontier on the Rhine, Main, and Danube behind walls fronted by subsidized tribesmen and backed by settled legionaries, refortified cities, and cavalry, river, and coastal patrols. The process tended to barbarize Romans and Romanize barbarians, some of whom were allowed to settle on lands depopulated by plague and soil exhaustion. The best books are G. R. Watson's *The Roman Soldier* (1969), Graham Webster's *The Roman Imperial Army* (1970), Chester G. Starr, Jr.'s *The Roman Imperial Navy* (1941), E. A. Thompson's *The Early Germans* (1965), and, on one frontier, David Divine's *Hadrian's Wall* (1969).

Hadrian's (117-38) idea of two emperors harks back to that of two consuls, but the boundaries of the four civilian prefectures better suggest the geopolitical structure of the later empire. Gaul included Britain and Spain. Africa (Carthage) and the provinces that covered the eastern Alpine passes were part of Italy. Illyria included the southern Balkans and Greece. The East included Thrace, Asia Minor, Syria, and Egypt. Constantine's conversion in 312 A.D. added Christians to Rome's defenders. In making Byzantium (Constantinople) his capital, he recognized the importance of the land-sea bastion that channeled invaders west and from which Persian attacks on Syria and Egypt could be countered. In 376 the Huns destroyed an Eastern or Ostrogothic steppe "empire" and pushed the Western or Visigoths into the Roman domain. After the heavy Gothic cavalry with saddles, stirrups, bows, swords, and lances defeated the Eastern

emperor's legions at Adrianople in 378, his successor, Theodosius the Great, began to make heavy "cataphract" mounted archers the main East Roman missile and shock force.

Then the Western Empire collapsed. The invaders, like the Imperial tax farmers, did more damage to the dying cities than to the self-sufficient landlords. Alaric the Visigoth sacked Rome in 410, and his tribesmen later set up a kingdom in Spain. In Gaul, the Franks and Romans defeated Attila's Huns at Chalons in 451; Attila was bought off in Italy in 452, and his horde broke up on the Danube. The Vandals—only 80,000 of them for the whole tribe—were pushed from Spain to Africa but returned to sack Rome in 455 for an emperor's widow. The last Western emperor was deposed in 476, the traditional beginning of the West's Middle Ages. Theodoric the Great, an Ostrogoth educated at Constantinople, was sent to recover Italy, and he set up his own kingdom. On what lay behind these movie scenarios, the best book is Frank William Walbank's *The Awful Revolution: The Decline of the Roman Empire in the West* (1969).

Justinian (527-65) reconquered those parts of the empire within range of his naval forces: Africa, Carthaginian Spain from Cadiz to Cartagena, and Italy. His professional army of 150,000 men was also fighting on the Danubian and Persian frontiers. New churches, religious orders, palaces, roads, fortifications, and trading posts showed the recuperative power of an empire which was still larger than those of Alexander's successors nine centuries before. John Barker's *Justinian and the Later Roman Empire* (1966) can be read before books on the cautious emperor, his ex-prostitute wife Theodora, the great captain Belisarius, and the eunuch-soldier Narses, all of which are just as racy as those on Philip, Alexander, and Olympias, or on Caesar, Cleopatra, Antony, and Octavian.

### *The Middle Ages*

The Middle Ages may have begun with the Arab conquests in the century after Mohammed's death in 632. Greek fire, probably a mixture of naphtha or some petroleum product with sulphur and lime, projected from galley bow tubes, saved Constantinople in 672, and the Eastern Roman Empire continued for another eight centuries. Leo the Isaurian repelled the last Arab assault against the city in 722, and, at the other end of Europe, Charles Martel checked the Moslems at Tours ten years later. John Bagot Glubb's *The Great Arab Conquests* (1963) is a good overview. The great medieval captains—Charles Martel's grandson

Charlemagne, Otto the Great, William the Conqueror, Saladin, Bibars, Murad I, and others—were more local figures in a scene dominated tactically by heavy cavalry and strategically by fortifications, an easy military investment for localized agrarian economies. In the east, the steppe cavalryman's era began with the Mongols' Genghis Khan (1180-1227) and closed with Kublai Khan (1280-1294) and the Tartar Tamerlane (1381-1405); these nomads had adopted the principles of discipline and administration previously used by settled peoples to build and hold their empires. Glubb's *The Great Arab Conquests*, Rene Grousset's *Conqueror of the World*, and Harold Lamb's *Tamerlane* are the best books. But the cavalry's dominance was ending even before the battle of Nicopolis in 1396, about the time that gunpowder began to affect siegecraft.

The West's economic decline began before the barbarian invasions. Lynn White, Jr.'s *Medieval Technology and Social Change* (1962) links its revival with a new three-field farming system and the concept of a power technology. Economic localization and military feudalization, a system of landholding in return for service, was accentuated by new wars and invaders in all three worlds after the reigns of Charlemagne (771-814), the Eastern Roman Emperor Nicephorus I (802-11), and the Caliph Harun al-Rashid (763-809). By 1000 the Northmen's double-ended, shallow-draft, oared sailers had taken them by river to the Black and Caspian seas and by sea to America. Viking raiding parties were seldom large. Norse Iceland, as big as north Italy, had only 60,000 people, a few more than the Magyar "horde" of 955 A.D. or the city of Venice. By the time the Vikings were converted to Christianity, the Arabs controlled much of the western Mediterranean, although the Normans managed to win Sicily and southern Italy. Gwynn Jones's *A History of the Vikings* (1968), David C. Douglas's *The Norman Achievement* (1969), Romilly Jenkins's *Byzantium: The Imperial Centuries* (1966), Archibald R. Lewis's *Naval Power and Trade in the Mediterranean* (1951), Bernard S. Bachrach's *Merovingian Military Organization, 481-751* (1972), and Robert S. Lopez's *The Birth of Europe* (1967) are fine general works on this era.

At Hastings (14 October 1066)—one battle on which we have some details—William of Normandy had 3,000 cavalry with chain mail tunics, conical caps, and kite shields light enough for dismounted fighting, 1,000 archers, and 4,000 other footmen from as far away as Italy. His opponent, King Harold, repulsed a Viking invasion at Stamford Bridge and then marched south with 2,000 axemen, a few archers, and no cavalry, picked up

6,000 militia on the way, and was in turn defeated at Hastings. After William's death, the Normans covered a previously unfortified England with motte-and-bailey castles that resembled Roman cantonments.

Manzikert, where the Greeks lost their Anatolian recruiting base to the Seljuk Turks in 1071, was as decisive as Hastings. Eight crusades (1095-1271) helped the Latins set up a kingdom, a principality, and two counties in an area the size of modern Israel, and a Latin empire (1205-1261) in Constantinople. The net effect was to hasten the destruction of the Eastern emperor they professed to have come to save. Christians lost Jerusalem in 1187 and Acre in 1291, but Greeks, Latins, and Ottoman Turks were still fighting over the empire's ruins at Nicopolis in 1396. John Beeler's *Warfare in Feudal Europe, 730-1200* (1971) shows that a mixed force of mounted knights and infantry was always better than a purely cavalry one in the West. The other best books on medieval warfare are Beeler's edition of Charles W. C. Oman's *Art of War in the Middle Ages, A.D. 378-1515* (1953), R. C. Smail's *Crusading Warfare, 1097-1193* (1967), Steven Runciman's *A History of the Crusades* (1951-55), Aziz S. Atiya's *Crusade, Commerce, and Culture* (1966), and Joshua Prawer's *The World of the Crusaders* (1972).

While the Crusades drew some of the Western aristocracy to the tasks of recovering the Holy Land, Spain, and Africa, converting Baltic pagans, and uprooting heretics, other nobles and townsmen blanketed Europe with Crusader castles. A typical garrison post might number forty men-at-arms, forty crossbowmen, forty pikemen, and two gunners. Trebuchets and other war engines brought higher angle fire against them, while bolts and arrows forced lancers and horses into plate armor and reduced the former's effectiveness when dismounted. Although "fire pot" guns had little to do with the infantry revival and early firearms could do little more than scare horses and set fires inside fortifications, contemporary siege artillery soon included all types of homemade cannon and explosives.

The English longbow has been overrated. It was feudal ideas of social superiority and honor that led French knights to ride down their Genoese crossbowmen at Crecy in 1346 and to scorn scouting at Nicopolis, and the Teutonic Knights to stop at Tannenberg in 1410 for a battle of champions. The English had 20,000 men at Crecy, on the first of the dynastic raids which later historians saw as an Anglo-French Hundred Years' War (1338-1453). The crusading force at Nicopolis was somewhere between the 50,000 men who had reached Constantinople and the

12,000 who had taken Jerusalem on the First Crusade. Back home, Saint Louis (Louis IX, 1226-70) had more success trading French lands against their inhabitants' wishes and backing his brother Charles of Anjou's schemes for reviving the Latin empire from Sicily. Some good books are Fredrick Heer's *The Medieval World* (1970), Steven Runciman's *The Sicilian Vespers* (1958), H. J. Hewitt's *The Organization of War under Edward III* (1966), Eduoard Perroy's *The Hundred Years' War* (1965), C. T. Allmand's *Society at War* (1973), and Richard Vaughan's *Philip the Bold* (1962). It was Philip who parlayed his father's and wife's resources into a semi-independent Burgundian state.

The Crusades and the Mongols had put Westerners in contact with the technology of the Eastern, Arabic, and Chinese empires. From these sources they borrowed the lateen sail, windmill, poundlock gate, compass, gunpowder, and papermaking. The use of printing, the crank, and the stored-weight trebuchet (catapult) was fostered by labor shortages and unrest, war, the Black Death (1347-), famine, and an agricultural crisis of the Little Ice Age of the fourteenth to nineteenth centuries. The last factor drove the Atlantic fisheries south, doomed Norse Greenland, and drove lesser nobles into the pay of greater ones or into the free companies which were devastating France. The French population did not recover until the eighteenth century, but there were some islands of relative peace and prosperity in the Netherlands, the Rhineland, south Germany, and Italy. Discharged veterans who wandered or were driven into Italy contributed to social stability by making contracts (*condottas*) with town oligarchs to replace less reliable and efficient militia. Some *condottieri* battles were bitter; others were tournaments because captains would not risk their men and, unlike prisoners, dead foes could not be ransomed. Florentine militia service was commuted for cash in 1351, just before the peasant Sforza Attendiolio (1364-1424) was kidnapped into a wandering band, became its captain, and laid the foundations of a Milanese dynasty. Three good books are C. C. Bayley's *War and Society in Renaissance Florence: The De Militia of Leonardo Bruni* (1961), Geoffrey Trease's *The Condottieri: Soliders of Fortune* (1971), and Michael Mallett's *Mercenaries and Their Masters: Warfare in Renaissance Italy* (1974).

If the Roman historian Tacitus could have visited Germania in 1400, he might have been impressed by the barbarians' personal independence, glass-walled buildings, armorers, mechanics, lands won from the sea, and Latin readers from Iceland to Riga. But he would have been appalled by their indiscipline, roads, and

the discomforts of their castles. Rome was now a provincial town, while Constantinople, Alexandria, and Quinsay (in China) were still metropoli. Tacitus might well have read one of the travel books then firing Latin imaginations, that of Marco Polo the Venetian, "as told to" a fellow prisoner, the professional writer Rustician of Pisa, in Genoa in 1298.

### *The Early Modern Era*

In 1786 the funeral of Frederick the Great honored the last dynastic great captain. By that time Western armies and navies were all armed with guns, and Tacitus would have been impressed by their discipline, Latin readers and villas on five continents, and Gaul's roads and canals. Since 1400 Westerners had conquered the Atlantic Ocean and two continents; their added stocks of food, materials, power, and bullion had fueled further economic and technological development. In 1814, twenty-eight years later, Tacitus could have seen the abdication of a self-made Alexander who had lost a field army twice as large as Augustus's whole force after taking a city as far from Paris as Carrhae—where the Triumvir Marcus Crassus had lost his legions and life in 53 B.C.—had been from Rome.

In *The Rise of the West* (1963, p. 587), William H. McNeill attributes Europe's early sixteenth-century "command of all the oceans" and conquest of "the most highly developed regions of the Americas" to "(1) a deep-rooted pugnacity and recklessness; . . . (2) a complex military technology, most notably in naval matters; and (3) a population inured to" many Old World diseases. Carol. M. Cipolla's *Guns, Sails and Empires: Technological Innovation and the Early Phases of European Expansion* (1965) stresses weapons, though Old World diseases killed more American Indians than did guns. But Western pugnacity and technology do not explain Ottoman Turks taking Constantinople with guns in 1453, defeating Mameluke Egypt in 1517, attacking Vienna in 1529, or raiding Western Mediterranean coasts and commerce after 1533. While the Ottomans took Christian tribute boys into their elite Janissaries and bureaucracy, military participation ratios remained low. But the stream of equally pugnacious Western townsmen and peasants into Turkish frontier areas seems to have conferred no particular military advantage on the West.

The fifteenth century's greatest captains were Murad II (1421-51), who rearmed some archers with handguns, and Mohammed II (1451-81), whose big guns helped to take

Constantinople. The Bohemian Hussites' armored wagons had less influence on war than better quality grained or "corned" gunpowder for siege guns, mines, and matchlock handguns. Firearms were more effective against armor than crossbows or longbows, though their operators also had to be protected by pikemen because of short ranges and slow rates of fire. The best books are David Ayalon's *Gunpowder and Firearms in the Mamluk Kingdom: A Challenge to a Medieval Society* (1956), Frederick G. Heymann's *John Ziska and the Hussite Revolution* (1969), Steven Runciman's *The Fall of Constantinople* (1969), Eric Brockmann's *The Two Sieges of Rhodes* (1969) for the Turkish artillery's failure in 1480 and success in 1522, and Bertrand Gille's *Engineers of the Renaissance* (1966) for an amazing variety of civil and military engines and devices.

Better political organization meant better weapons and better subordinated men. Louis XI of France (1461-83) and Ferdinand II of Aragon (1476-1516), whom Niccolo Machiavelli saw as the ablest of the "new" princes, used methods like those of a Venetian Republic which was neither subverted nor conquered from 1310, when a Council of Ten was set up to secure social order, if not cohesion, to 1797. Venetian "great galleys" met rigid construction standards; bowmen and gunners were chosen by public competition. New navigational methods allowed even slow ships to make two Levant trips a year; greater loading capacities and lower costs generated bulk trade in alum, wheat, and cotton. By 1500 the galleys were bringing 1,500 tons of spices from Mameluke Egypt each fall; up to 1,000 percent profits financed the long Turkish wars. On this model of political and financial organization for the new national monarchs, or Machiavelli's proposed Prince for Italy, who came to dominate Europe, the best books are D. S. Chamber's *The Imperial Age of Venice, 1380-1580* (1971), Frederick C. Lane's *Venetian Ships and Shipbuilders of the Renaissance* (1934), and John F. Guilmartin, Jr.'s *Gunpowder and Galleys* (1974).

The English won another Crecy at Agincourt in 1415, but Charles VII of France (1422-61) regained Paris in 1436, after Joan of Arc had made the repulse of the English invader a national cause. The French king's *compagnies d'ordonnance* (regulations or standards) that constituted the first permanent or standing army were bands of men-at-arms and mounted archers whose quality was insured by peacetime payments from a permanent tax. A new artillery corps helped Charles recover everything but Calais by 1453. It was marriage, not conquest, however, that united the Austrian and Spanish empires and made the

Habsburg Emperor Charles V (1519-55) the most powerful prince in Europe. The details of the dynastic wars or of the English Wars of the Roses (1453-1485) are less important than the appearance of new monarchs who, like Henry VII, were primarily administrators and felt less compelled to lead, or be captured or killed, in battle. Those who find William Shakespeare's or Jean Froissart's (1337-1410) genealogies hard to follow can read Richard Vaughan's *John the Fearless* (1966) or *Philip the Good* (1970) on Burgundy and Paul Murray Kendall's *Louis XI* (1972), *Richard the Third* (1956), or *Warwick the Kingmaker* (1957).

In 1494 Charles VIII of France opened nearly four centuries of foreign intervention in Italy by reclaiming Naples. Though their guns were the best in Europe, by 1559 the French had forced Italy and the Church to seek Habsburg protection, were allied with Suleiman the Magnificent (1520-66), and were defending Paris against Philip II of Spain. Philip had inherited Charles V's Spanish, Italian, and Burgundian possessions while his uncle shouldered the problems of the Viennese emperorship, Germany's Protestants, and the Turks on the Danube. Gonzalo de Cordoba, whose story is told in Mary Purcell's *Great Captain* (1962), devised the Spanish square of pikemen and counter-marching handgunners, a formation perfected by the Duke of Parma. Cavalry with wheellock pistols got volume fire by caracoling (making a half turn to right or left), and fortifications were thickened and lowered to take more guns and given outworks against attacking gunners, sappers, and miners. Some good books are Charles W. C. Oman's *A History of the Art of War in the Sixteenth Century* (1937), F. L. Taylor's *The Art of War in Italy, 1494-1529* (1921), Jean Giono's *The Battle of Pavia* (1963) (where Francis I of France was captured in 1525), C. G. Cruickshank's *Army Royal: Henry VIII's Invasion of France, 1513* (1969), and Harold Lamb's *Suleiman the Magnificent* (1951). *The Pirotechnia of Vannoccio Biringuccio* (modern reprint, 1959) is a fine example of the illustrated printed books which were spreading technological, scientific, military, and religious ideas.

Indian allies and Spanish armor, crossbows, guns, horses, and diseases that killed nine-tenths of Mexico's 25 million people from 1519 to 1568 explain the Spanish conquest of that country. Mercury amalgam refining added silver to the gold which supported Philip in Europe. The classics are Bernal Diaz del Castillo's *The Conquest of New Spain* (written in the sixteenth century), Francisco Lopez de Gomara's *Cortes* (1965), William H.

Prescott's *History of the Conquest of Mexico* (1843) and *History of the Conquest of Peru* (1847), and Samuel Eliot Morison's *Admiral of the Ocean Sea* (1942). Other fine works are Björn Landström's *Columbus* (1967), John Hemming's *The Conquest of the Incas* (1970), and J. H. Parry's *The Establishment of the European Hegemony, 1415-1715* (1961) and *The Spanish Seaborne Empire* (1966). The Portuguese destroyed some lighter Arab dhows at Diu, India, in 1509 and reached the Spice Islands by 1513 to cut prices and increase volume and profits by substituting one voyage for several. The Turks, Persians, Chinese, and Japanese confined Westerners to a few port "factories," but the Mogul Empire in India was breaking up when Dutch, English, and French traders later appeared. After Sebastian I of Portugal was killed by the Moors at Alcazar in 1578, Philip cashed in his dynastic claims and by the time Portugal recovered her independence in 1640, the Dutch had taken over most of her Eastern trade. Some good books are Elaine Sanceau's *Henry the Navigator* (1969), E. W. Bovill's *The Golden Trade of the Moors* (1968) and *The Battle of Alcazar* (1952), and C. R. Boxer's *The Portuguese Seaborne Empire, 1415-1825* (1970) and *The Dutch Seaborne Empire, 1600-1800* (1965).

In 1571 the Italians and Spanish defeated the Turks in the last great galley battle at Lepanto. Garrett Mattingly's *The Armada* (1959) is the book on Philip's attempt to invade England in 1588 and the first great sailing ship fight; Geoffrey Marcus's work is now called *The Naval History of England* (1971-). Blaise de Monluc's *The Habsburg-Valois Wars and the French Wars of Religion* (1972) captures the spirit of those conflicts, which ended in 1590 when Henry IV defeated a Spanish-backed army at Ivry. The Netherlands had revolted against Philip in 1568, but by the time William the Silent was assassinated in 1584, Parma had confined the rebels to seven waterlaced Dutch provinces. William's son, Maurice of Nassau, used infantry cohorts with more firepower than the heavier Spanish squares and used canals as Gustavus Adolphus of Sweden, the first of Elbridge Colby's *Masters of Mobile Warfare* (1943), was to use rivers in the Thirty Years' War (1618-1648) which devastated Germany. Trevor N. Dupuy's *Military Life of Gustavus Adolphus* (1970) discusses his salvo-firing musketeers, pikemen with shorter ironclad pikes, light guns, and sabre-armed cavalry. The Swedish King defeated the Austrian Emperor's best general, Count Albrecht von Wallenstein, at Lützen in 1632 but lost his own life in the process. Two years later Wallenstein was assassinated for allegedly plotting for the Bohemian crown.

Francis Watson's *Wallenstein* (1938) and Fritz Redlich's *The German Military Enterpriser and His Work Force* (1965) are the best works on this extraordinary soldier, while Thomas M. Barker discusses Raimondo Montecuccoli in *The Military Intellectual and Battle* (1975).

The entrance of France into the war on behalf of the German Protestants only complicated what began as a religious struggle and ended in 1659 when Louis XIV (1645-1715) married a Spanish princess who brought along a claim to the Spanish throne. At about the same time, Oliver Cromwell's son was removed as Lord Protector by the rump of a Parliament which had executed Charles I of England in 1649, and in Russia, Michael Romanov ended the Time of Troubles (1604-13) by beating back Swedish and Polish invaders and establishing the beginnings of a stable dynasty.

J. H. Elliott's *Imperial Spain* (1964) and John Lynch's *Spain Under the Hapsburgs* (1946-69) stress the nearly insoluble communications problems that afflicted the Spanish Empire and complement Geoffrey Parker's fine *The Army of Flanders and the Spanish Road, 1567-1659: The Logistics of Spanish Victory and Defeat in the Low Countries Wars* (1972). Spain's colonists, like the self-sufficient Roman Gauls, increasingly evaded regulation. While convoys saved most ships from French, Dutch, and English interlopers, their stragglers were so rich that James I began his dynasty's financial woes by ending Elizabeth's long war with Spain. C. G. Cruickshank's *Elizabeth's Army* (1968), Kenneth R. Andrews's *Elizabethan Privateering* (1964), Julian S. Corbett's *Drake and the Tudor Navy* (1898), Cyrus H. Karraker's *Piracy Was a Business* (1953), T. Rayner Unwin's *The Defeat of John Hawkins* (1960), and Charles H. Firth's *Cromwell's Army* (1962) supplement Correlli Barnett's general *Britain and Her Army, 1509-1970* (1970). Georges Pages, in *The Thirty Years' War* (1971), saw that war as modernizing. But C. V. Wedgwood's *Thirty Years' War* (1961), like Hans J. C. von Grimmelshausen's novel *Simplicius Simplicissimus* (1669), held that it "settled nothing worth settling."

The two best short works on an era when Europe was as near anarchy as it had been in the fourteenth century are Trevor Aston's (ed.) *Crisis in Europe, 1560-1660* (1956) and Michael Roberts's *The Military Revolution, 1560-1660* (1956). They are also the best introductions to the demands for religious, political, financial, international, and military order that supported the centralizing and standardizing efforts of the so-called enlightened despots of an era that began with Louis XIV's personal

assumption of power in 1661 and ended with the financial collapse of the French monarchy in 1789. The political and military achievements of the most important monarchs are treated in Pierre Goubert's *Louis XIV and Twenty Million Frenchmen* (1970), Vasili Klyuchevsky's *Peter the Great* (1961), Gerhard Ritter's *Frederick the Great* (1968), and by Frederick himself in *Frederick the Great on the Art of War* (1966, translated and edited by Jay Luvaas). Geoffrey Symcox's (ed.) *War, Diplomacy, and Imperialism* (1974) is a more general survey, and Paul W. Bamford's *Fighting Ships and Prisons* (1973) covers the Sun King's Mediterranean galley fleets.

The financial genius of Louis XIV's "mercantilist" adviser, Jean Baptiste Colbert, allowed France to raise the largest army and navy in Europe and to pay the allies who helped Louis attack the exposed Spanish Hapsburg and Imperial lands on his northeastern frontiers. Vauban then worked each conquest into an offensive-defensive fortifications system which covered all of France and provided the protected magazines from which the armies raised and trained by the Marquis of Louvois could make their next carefully prepared forays.

International law and regular supplies and pay limited the looting which had marked previous wars, looting which had done as much damage to the armies themselves as to the economy of occupied areas. Infantry tactics became simpler when socket bayonets made flintlock muskets into pikes as well as firearms. The eighteenth-century Prussian doubled-ended iron ramrod increased loading speed and firepower and the need for march and fire discipline. Unarmored men could carry more rounds for the volume fire that preceded the decisive bayonet charges; uniformed soldiers were easier to identify and direct and less likely to desert in battle. Men wintered better in barrack workshops than when quartered on civilians. Their noble officers had to spend more time with their soldiers or at courts where the monarch could watch them for disloyalty. Hosts of royal inspectors cut down fraud and assured more regular pay and better supplies to armies which were still recruited from the lowest classes of society so that more productive small farmers, artisans, and merchants could add to the state's wealth.

The result was a series of dynastic wars that were more limited in their effects on civilian populations than those of the previous era and established the international balance of power for most of the next two centuries. Louis XIV's aggressions were finally checked in the War of the League of Augsburg, 1689-98. The War of the Spanish Succession, 1700-1714, placed a French

prince on the Spanish throne but gave Gibraltar, Minorca, Newfoundland, Hudson's Bay, and Acadia to Britain and the Spanish Netherlands and major Italian territories to Austria. It also bankrupted the French monarchy. The disorders noted in Lee Kennett's *French Armies in the Seven Years' War* (1967) were as much a result of Louis XIV's selling offices and the right to collect taxes as of Louis XV's ineptitude from 1715 to 1774. Sweden's enemies forced Charles XII to disgorge his earlier conquests in a Great Northern War, 1700-1721, which gave Peter the Great of Russia his Baltic "window" to the west and made Russia a European power. Frederick the Great of Prussia barely kept his gains from the War of the Austrian Succession, 1740-48, in the Seven Years' War, 1756-63, which made Britain the paramount power in North America and India. The biggest losers besides Spain and Sweden were Poland and Turkey. Russia, Austria, and Prussia began to partition Poland in 1772 and completed their work in 1793 and 1795. Eugene of Savoy captured all of Hungary, Transylvania, Croatia, and Slavonia for Austria in 1699, and, after a series of wars, Russia obtained the right to protect Christians in the Ottoman Empire in 1774 and in 1781 agreed with Austria on a future division of all Turkish European territories. And France, Spain, and other powers made Britain less great overseas by helping some British Americans win their independence in 1783.

Technological development continued in areas which, as in the fourteenth century, saw little fighting. Religious uniformity increased local social cohesion; John Prebble's *Culloden* (1962) and Glencoe (1968) show the savagery with which the divine-right kings might keep order. One in forty Frenchmen served in Louis's forces and thirty-five Prussians supported every soldier, so military participation was still under Roman Punic War ratios. But there was now no question of the military subordination of the soldiery to monarchs. Winston Churchill's *Marlborough* (1933-38) and Nicholas Henderson's *Prince Eugen of Savoy* (1965) cover Britain's and Austria's greatest captains in the wars of Louis XIV. Reginald Blomfield's *Sebastien le Prestre de Vauban* (1938) treats an engineer in the French king's service who was also an economist, but technology's application to warfare was still largely one of adopting such "random" craft innovations as bayonets, iron ramrods, antiscurvy agents, copper-bottomed ships, and better roads, bridges, and waterways to get more men and guns to more distant targets. Other fine books are John Stoye's *The Siege of Vienna* (1964), R. E. Scouller's *The Armies of Queen Anne* (1966), Frans G. Bengts-

son's *The Life of Charles XII* (1960), Jon Manchip White's *Marshal of France: The Life and Times of Maurice, Comte de Saxe* (1962), and Reginald Savory's *His Britannic Majesty's Army in Germany During the Seven Years' War* (1966).

Alfred Thayer Mahan's *The Influence of Sea Power Upon History 1660-1783* (1890), Herbert Richmond's *Statesmen and Sea Power* (1946), Gerald S. Graham's *Empire of the North Atlantic* (1958), and Geoffrey Marcus's *Heart of Oak* (1975) only suggest the developments in gunnery, fleet and convoy and amphibious tactics, logistics, and medicine which enabled Britain to throw 32,000 men—Hannibal's force at Cannae or Caesar's at Pharsalus—at New York in 1776. Geoffrey Marcus's *Quilberon Bay: The Campaign in Home Waters, 1795* (1960) and Charles P. Stacey's *Quebec, 1759* (1959) are fine studies of an earlier war (1756-1763) in which the British pocketed twelve ships of the line and five million dollars in money and goods at Havana, a ransom of four million for Manila, and seven million dollars in treasure from two galleons in 1762. Shelford Bidwell's *Swords for Hire* (1972), Desmond Young's *Fountain of the Elephants* (1959), and Michael Edwardes's *Plassey: The Founding of an Empire* (1970) deal with the adventurers who established a new European empire in India, while the forces that brought down the old systems of statecraft and war in Europe proper are best seen in the first volume of Robert R. Palmer's *The Age of the Democratic Revolution* (1959). The Comte de Guibert, who disowned his ideas for larger and more popular and national armies after meeting Frederick, was only one of many reformers discussed in Robert S. Quimby's *The Background of Napoleonic Warfare* (1957) who wanted reform rather than revolution in what Karl von Clausewitz many years later described as a restricted, shriveled-up form of war.

## Bibliography

- Adcock, Frank E. *The Greek and Macedonian Art of War*. Berkeley: Univ. of Calif. Press, paperback, 1957.
- . *The Roman Art of War Under the Republic*. Rev. ed. New York: Barnes and Noble, 1963.
- Allmand, C. T., ed. *Society at War: The Experience of England and France During the Hundred Years' War*. New York: Harper and Row, 1973.
- Anderson, J. K. *Military Theory and Practice in the Age of Xenophon*. Berkeley: Univ. of Calif. Press, 1970.
- Anderson, R. C. *Oared Fighting Ships: From Classical Times to the Coming of Steam*. London: Percival Marshall, 1962.
- Anderson, Romola, and Anderson, R. C. *The Sailing Ship: Six Thousand Years of History*. New York: Robert M. McBride, 1947.

- Andreski, Stanislav. *Military Organization and Society*. 2nd ed. Berkeley: Univ. of Calif. Press, paperback, 1968.
- Andrews, Kenneth R. *Elizabethan Privateering: English Privateering During the Spanish War, 1585-1603*. New York: Cambridge Univ. Press, 1964.
- Arday, Robert. *The Territorial Imperative: A Personal Inquiry Into the Origins of Property and Nations*. New York: Atheneum, 1966. Dell paperback, 1971.
- Asprey, Robert B. *War in the Shadows: The Guerrilla in History*. 2 vols. Garden City, N.Y.: Doubleday, 1975.
- Aston, Trevor, ed. *Crisis in Europe, 1560-1660*. New York: Basic Books, 1965. Doubleday-Anchor paperback.
- Atiya, Aziz S. *Crusade, Commerce, and Culture*. Bloomington: Ind. Univ. Press, 1962. New York: Wiley, paperback, 1966.
- Ayalon, David. *Gunpowder and Firearms in the Mamluk Kingdom: A Challenge to a Medieval Society*. London: Valentine, Mitchell, 1956.
- Bachrach, Bernard S. *Merovingian Military Organization, 481-751*. Minneapolis: Univ. of Minn. Press, 1972.
- Bamford, Paul W. *Fighting Ships and Prisons*. Minneapolis: Univ. of Minn. Press, 1973.
- Barker, John W. *Justinian and the Later Roman Empire*. Madison: Univ. of Wisc. Press, 1966.
- Barker, Thomas M. *The Military Intellectual and Battle: Raimondo Montecucoli and the Thirty Years' War*. Albany: State Univ. of N.Y. Press, 1975.
- Barnett, Correlli. *Britain and Her Army, 1509-1970: A Military, Political, and Social Survey*. New York: William Morrow, 1970.
- Bass, George F., ed. *A History of Seafaring Based on Underwater Archaeology*. New York: Wallace, 1972.
- Bayley, C. C. *War and Society in Renaissance Florence: The De Militia of Leonardo Bruni*. New York: Oxford Univ. Press, 1961.
- Beeler, John. *Warfare in Feudal Europe, 730-1200*. Ithaca, N.Y.: Cornell Univ. Press, 1971.
- Bengtsson, Frans G. *The Life of Charles XII, King of Sweden, 1697-1718*. Translated by Naomi Walford. New York: St. Martin's Press, 1960.
- Bidwell, Shelford. *Swords for Hire: European Mercenaries in Eighteenth Century India*. New York: Transatlantic Arts, 1972.
- Blackmore, Howard L. *Arms and Armour*. London: Studio Vista, 1965. New York: Dutton, paperback.
- . *Firearms*. London: Studio Vista., 1964. New York: Dutton, paperback.
- Blomfield, Reginald. *Sebastien le Prestre de Vauban 1633-1707*. London: Mathsun, 1938.
- Bovill, E. W. *The Battle of Alcazar: An Account of the Defeat of Don Sabastion of Portugal at El-Ksar el kebir*. London: Batchworth Press, 1952.
- . *The Golden Trade of the Moors*. 2nd ed. New York: Oxford Univ. Press, 1968.
- Boxer, Charles R. *The Dutch Seaborne Empire, 1600-1800*. New York: A. A. Knopf, 1965.
- . *The Portuguese Seaborne Empire, 1415-1825*. New York: A. A. Knopf, 1970.
- Bramson, Leon, and Goethals, George W., Jr., eds. *War: Studies from Psychology, Anthropology, Sociology*. New York: Basic Books, 1964.
- Brockman, Eric. *The Two Sieges of Rhodes, 1480-1522*. London: John Murray, 1969.
- Brodie, Bernard, and Brodie, Fawn. *From Crossbow to H-Bomb*. New York: Dell, paperback, 1962.

- Casson, Lionel. *Ships and Seamanship in the Ancient World*. Princeton, N.J.: Princeton Univ. Press, 1971.
- Chambers, D. S. *The Imperial Age of Venice, 1380-1580*. New York: Harcourt Brace Jovanovich, paperback, 1971.
- Churchill, Winston. *Marlborough: His Life and Times*. 4 vols. London: Harrap, 1933-38.
- Cipolla, Carlo M. *Guns, Sails and Empires: Technological Innovation and the Early Phases of European Expansion, 1400-1800*. New York: Patheon Books, paperback, 1965.
- Cleator, P. E. *Weapons of War*. New York: Thomas Y. Crowell, 1968.
- Colby, Elbridge. *Masters of Mobile Warfare*. Princeton, N.J.: Princeton Univ. Press, 1943.
- Corbett, Julian S. *Drake and the Tudor Navy*. 2nd ed. London: Longmans, 1898.
- Cottrell, Leonard. *Hannibal: Enemy of Rome*. New York: Holt, Rinehart and Winston, paperback, 1961.
- Cruikshank, Charles Grieg. *Army Royal: Henry VIII's Invasion of France, 1513*. New York: Oxford Univ. Press, 1969.
- . *Elizabeth's Army*. 2nd ed. New York: Oxford Univ. Press, paperback, 1968.
- Culican, William. *The First Merchant Venturers: The Ancient Levant in History and Commerce*. New York: McGraw-Hill, paperback, 1966.
- De Beer, Gavin. *Hannibal: Challenging Rome's Supremacy*. New York: Viking Press, 1969.
- Denison, George T. *History of Cavalry*. 2nd ed. London: Macmillan, 1913.
- Diaz del Castillo, Bernal. *The Conquest of New Spain*. Translated by J. M. Cohen. Baltimore: Penguin, paperback, 1963.
- Divine, David. *Hadrian's Wall: A Study of the North-West Frontier of Rome*. Boston: Gambit, 1969.
- Douglas, David C. *The Norman Achievement 1050-1100*. Berkeley: Univ. of Calif. Press, 1969.
- Dumas, Maurice, ed. *History of Technology and Invention: Progress Through the Ages*. Multivolume. New York: Crown 1971-.
- Dupuy, R. Ernest, and Dupuy, Trevor N. *The Encyclopedia of Military History from 3500 B.C. to the Present*. New York: Harper and Row, 1970.
- Dupuy, Trevor N. *The Military Life of Gustavus Adolphus: Father of Modern War*. New York: Franklin Watts, 1970.
- Edwardes, Michael. *Plassey: The Founding of an Empire*. New York: Taplinger, 1970.
- Elliott, John H. *Imperial Spain: 1469-1716*. New York: St. Martin's Press, paperback, 1964.
- Firth, Charles H. *Cromwell's Army*. 2nd ed. London: Methuen, 1962.
- Frederick the Great on the Art of War*. Translated and edited by Jay Luvaas. New York: Free Press, 1966.
- Fuller, J. F. C. *Decisive Battles: Their Influence upon History and Civilization*. New York: Scribner's, 1940.
- . *The Generalship of Alexander the Great*. New Brunswick, N.J.: Rutgers Univ. Press, 1960. New York: Funk and Wagnalls, paperback, 1968.
- . *Julius Caesar: Man, Soldier, and Tyrant*. New York: Funk and Wagnalls, paperback, 1969.
- . *A Military History of the Western World*. 3 vols. New York: Funk and Wagnalls, paperback, 1954.
- Garlan, Yvon. *War in the Ancient World: A Social History*. London: Chatto and Windus, 1975.

- Gelzer, Matthias. *Caesar: Politician and Statesman*. Translated by Pete Needham. Cambridge, Mass.: Harvard Univ. Press, 1968.
- Gille, Bertrand. *Engineers of the Renaissance*. Cambridge, Mass.: MIT Press, 1966.
- Giono, Jean. *The Battle of Pavia: 24th February, 1525*. Translated by A. E. Murch. New York: Fernhill, 1963.
- Glubb, John Bagot. *The Great Arab Conquests*. London: Hodder and Stoughton, 1963.
- Gomara, Francisco Lopez de. *Cortes*. Translated and edited by Lesley Byrd Simpson. Berkeley: Univ. of Calif. Press, 1965.
- Goubert, Pierre. *Louis XIV and Twenty Million Frenchmen*. Translated by Anne Carter. New York: Pantheon Books, paperback, 1970.
- Graham, Gerald S. *Empire of the North Atlantic: The Maritime Struggle for North America*. 2nd ed. Toronto: Univ. of Toronto Press, 1958.
- Grant, Michael. *The Ancient Mediterranean*. New York: Scribner's, 1969.
- Green, Peter. *Alexander the Great*. New York: Praeger, 1970.
- . *Armada from Athens*. Garden City, N.Y.: Doubleday, 1970.
- . *Xerxes at Salamis*. New York: Praeger, 1970.
- Grimmelshausen, Hans J. C. von. *Simplicius Simplicissimus*. Translated by Helmuth Weissenborn and Lesley Macdonald. London: J. Calder, 1965.
- Grousset, Rene. *Conqueror of the World*. Translated by M. McKellar and D. Sinor. New York: Orion, 1966.
- Guilmartin, John F., Jr. *Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century*. New York: Cambridge Univ. Press, 1974.
- Hackett, John Winthrop. *The Profession of Arms*. London: Times Publishing Co., 1963.
- Heer, Friedrich. *The Medieval World*. New York: Praeger, 1970.
- Hemming, John. *The Conquest of the Incas*. New York: Harcourt Brace Jovanovich, 1970.
- Henderson, Nicholas. *Prince Eugen of Savoy: A Biography*. New York: Praeger, 1965.
- Herodotus. *The Histories of Herodotus*. Translated by George Rawlinson. Edited by E. H. Blakeney. New York: Dutton, 1964.
- Hewitt, H. J. *The Organization of War under Edward III, 1338-1362*. New York: Barnes and Noble, 1966.
- Heymann, Frederick G. *John Ziska and the Hussite Revolution*. New York: Russell and Russell, 1969.
- Hogg, Oliver F. G. *Artillery: Its Origin, Heyday and Decline*. Hamden, Conn.: Archon, 1970.
- . *Clubs to Cannon: Warfare and Weapons before the Introduction of Gunpowder*. London: Duckworth, 1968.
- Hughes, Quentin. *Military Architecture*. London: Hugh Evelyn, 1975.
- Jenkins, Romilly. *Byzantium: The Imperial Centuries, A.D. 610-1071*. New York: Random House, 1966.
- Jobé, Joseph, ed. *Guns: An Illustrated History of Artillery*. New York: Crown, 1971.
- Jones, Gwyn. *A History of the Vikings*. New York: Oxford Univ. Press, 1968.
- Karraker, Cyrus R. *Piracy Was a Business*. Rindge, N.H.: Richard R. Smith, 1953.
- Kendall, Paul Murray. *Louis XI: The Universal Spider*. New York: W. W. Norton, 1972.
- . *Richard the Third*. New York: W. W. Norton, 1956.
- . *Warwick the Kingmaker*. London: George Allen and Unwin, 1957.

- Kennett, Lee. *The French Armies in the Seven Years' War: A Study in Military Organization and Administration*. Durham, N.C.: Duke Univ. Press, 1967.
- Kiernan, Frank A., Jr., and Fairbank, John K., eds. *Chinese Ways in Warfare*. Cambridge, Mass.: Harvard Univ. Press, 1974.
- Klyuchevsky, Vasilii. *Peter the Great*. Translated by Lillian Archibald. New York: Vintage, paperback, 1961.
- Kranzberg, Melvin and Pursell, Carroll W., eds. *Technology in Western Civilization*. 2 vols. New York: Oxford Univ. Press, 1967.
- Lamb, Harold. *Cyrus the Great*. Garden City, N.Y.: Doubleday, 1960.
- . *Suleiman the Magnificent: Sultan of the East*. Garden City, N.Y.: Doubleday, paperback, 1951.
- . *Tamerlane: The Earth Shaker*. New York: H. M. McBride, 1928.
- Landström, Björn. *Columbus*. New York: Macmillan, 1967.
- . *The Ship: An Illustrated History*. Garden City, N.Y.: Doubleday, 1961.
- Lane, Frederick C. *Venetian Ships and Shipbuilders of the Renaissance*. Baltimore: Johns Hopkins Univ. Press, 1934.
- Lewis, Archibald R. *Naval Power and Trade in the Mediterranean, A.D. 500-1000*. Princeton, N.J.: Princeton Univ. Press, 1951.
- Lloyd, E. M. *A Review of the History of Infantry*. London: Longmans, Green, 1908.
- Lopez, Robert S. *The Birth of Europe*. New York: M. Evans, 1967.
- Luvaas, Jay. See *Frederick the Great on the Art of War*.
- Lynch, John. *Spain Under the Hapsburgs*. 2 vols. New York: Oxford Univ. Press, 1964-69.
- McNeill, William H. *The Rise of the West: A History of the Human Community*. Chicago: Univ. of Chicago Press, paperback, 1963.
- Mahan, Alfred Thayer. *The Influence of Sea Power upon History*. Boston: Little, Brown, 1890. New York: Hill and Wang, paperback, 1957.
- Major, Ralph H. *Fatal Partners: War and Disease*. Garden City, N.Y.: Doubleday, 1941.
- Mallett, Michael Edward. *Mercenaries and Their Masters: Warfare in Renaissance Italy*. Totowa, N.J.: Rowman and Littlefield, 1974.
- Marcus, Geoffrey. *Heart of Oak*. New York: Oxford Univ. Press, 1975.
- . *A Naval History of England*. Boston: Little, Brown, 1962-.
- . *Quiberon Bay: The Campaign in Home Waters, 1759*. London: Hollis and Carter, 1960.
- Marsden, E. W. *Greek and Roman Artillery: Historical Development*. New York: Oxford Univ. Press, 1969.
- Mattingly, Garrett. *The Armada*. Boston: Houghton Mifflin, paperback, 1959.
- Monluc, Blaise de. *The Habsburg-Valois Wars and the French Wars of Religion*. Edited by Ian Roy. Military Memoirs, edited by Peter Young. Hamden, Conn.: Archon, 1972.
- Morison, Samuel Eliot. *Admiral of the Ocean Sea: A Life of Christopher Columbus*. Boston: Little Brown, 1942.
- Montgomery, Field Marshal Bernard L., Viscount. *A History of Warfare*. Cleveland: World, 1968.
- Montross, Lynn. *War Through the Ages*. 3d ed. New York: Harper, 1960.
- Nef, John U. *War and Human Progress: An Essay on the Rise of Industrial Civilization*. Cambridge, Mass.: Harvard Univ. Press, 1950. As *Western Civilization Since the Renaissance*. New York: Harper Torchbook, 1963.
- Oman, Charles W. C. *The Art of War in the Middle Ages, A.D. 378-1515*. Revision edited by John H. Beeler. Ithaca, N.Y.: Cornell Univ. Press, 1953.
- . *A History of the Art of War in the Sixteenth Century*. New York: Dutton, 1937.

- Pages, Georges. *The Thirty Years' War, 1618-1648*. Translated by D. Maland and J. Hooper. New York: Harper and Row, 1971.
- Palmer, Robert R. *The Age of the Democratic Revolution: A Political History of Europe and America, 1760-1800*. 2 vols. Princeton, N.J.: Princeton Univ. Press, paperback, 1959.
- Parker, Geoffrey. *The Army of Flanders and the Spanish Road, 1567-1659: The Logistics of Spanish Victory and Defeat in the Low Countries War*. New York: Cambridge Univ. Press, 1972.
- Parry, J. H. *The Establishment of the European Hegemony, 1415-1715: Trade and Exploration in the Age of the Renaissance*. New York: Harper, 1961.
- . *The Spanish Seaborne Empire*. New York: A. A. Knopf, 1966.
- Peltier, Louis C. and Percy, G. Etzel. *Military Geography*. Princeton, N.J.: Van Nostrand, paperback, 1966.
- Perroy, Eduoard. *The Hundred Years' War*. Translated by W. B. Wells. New York: Capricorn, paperback, 1965.
- Phillips, Thomas R., ed. *Roots of Strategy: A Collection of Military Classics*. Harrisburg: Military Service Publishing Co., 1940.
- Piggott, Stuart. *Ancient Europe from the Beginnings of Agriculture to Classical Antiquity*. Chicago: Aldine, 1965.
- The Pirotechnia of Vannoccio Biringuccio*. Introduction and notes by Cyril Stanley Smith and Martha Teach Gnudi. New York: Basic Books, 1959.
- Polybius. *The Histories*. Translated by Mortimer Chambers. Edited and abridged by E. Badian. New York: Washington Square, paperback, 1966.
- Prawer, Joshua. *The World of the Crusaders*. New York: Quadrangle, 1972.
- Prebble, John. *Culloden*. New York: Atheneum, paperback, 1962.
- . *Glencoe: The Story of the Massacre*. Harmondsworth: Penguin, 1968.
- Prescott, William H. *History of the Conquest of Mexico*. Original in 3 vols., 1843. Abridged by C. H. Gardiner. Chicago: Univ. of Chicago Press, 1966.
- . *History of the Conquest of Peru*. Original in 2 vols., 1847. New York: Heritage, 1957.
- Preston, Richard A.; Wise, Sidney F.; and Werner, Herman O. *Men in Arms: A History of Warfare and Its Interrelationships with Western Society*. 2d rev. ed. New York: Praeger, paperback, 1970.
- Purcell, Mary. *The Great Captain: Gonzalo Fernandez de Cordoba*. Garden City, N.Y.: Doubleday, 1962.
- Quimby, Robert S. *The Background of Napoleonic Warfare: The Theory of Military Tactics in the Eighteenth Century*. New York: Columbia Univ. Press, 1957. AMS Press, 1968.
- Redlich, Fritz. *The German Military Enterpriser and His Work Force: A Study in European Economic and Social History*. 2 vols. Wiesbaden: Franz Steiner, 1964-65.
- Richardson, Lewis Fry. *Statistics of Deadly Quarrels*. Edited by Quincy Wright and C. C. Lienau. Pittsburgh: Boxwood, 1960.
- Richmond, Herbert. *Statesmen and Sea Power*. Oxford: Clarendon Press, 1946.
- Ritter, Gerhard. *Frederick the Great: A Historical Profile*. Translated with introduction by Peter Paret. Berkeley: Univ. of Calif. Press, 1968.
- Roberts, Michael. *Essays in Swedish History*. London: Weidenfeld and Nicolson, 1967.
- . *The Military Revolution, 1560-1660*. Belfast: Queens Univ. Press, 1956.
- Runciman, Steven. *The Fall of Constantinople, 1453*. London: Cambridge Univ. Press, paperback, 1969.
- . *A History of the Crusades*. 3 vols. London: Cambridge Univ. Press, paperback, 1951-55.

- . *The Sicilian Vespers: A History of the Mediterranean World in the Later Thirteenth Century*. London: Cambridge Univ. Press, paperback, 1958.
- Sanceau, Elaine. *Henry the Navigator: The Story of a Great Prince and His Times*. Hamden, Conn.: Shoe String Press, Archon, 1969.
- Savory, Reginald. *His Britannic Majesty's Army in Germany During the Seven Years' War*. New York: Oxford Univ. Press, 1966.
- Scouller, R. E. *The Armies of Queen Anne*. New York: Oxford Univ. Press, 1966.
- Scullard, H. H. *Scipio Africanus: Soldier and Politician*. Ithaca, N.Y.: Cornell Univ. Press, 1970.
- Smail, R. C. *Crusading Warfare, 1097-1193*. London: Cambridge Univ. Press, 1967.
- Snodgrass, A. M. *Arms and Armour of the Greeks*. Ithaca, N.Y.: Cornell Univ. Press, 1967.
- Spaulding, Oliver L., Jr.; Nickerson, Hoffman; and Wright, John W. *Warfare: A Study of Military Methods from the Earliest Times*. Washington: Infantry Journal Press, 1939.
- Stacey, Charles P. *Quebec, 1759: The Siege and the Battle*. New York: St. Martin's Press, 1959.
- Starr, Chester G., Jr. *The Emergence of Rome as Ruler of the Western World*. Ithaca, N.Y.: Cornell Univ. Press, paperback, 1953.
- . *The Roman Imperial Navy, 31 B.C.-A.D. 324*. Ithaca, N.Y.: Cornell Univ. Press, 1941.
- Storr, Anthony. *Human Aggression*. New York: Atheneum, 1968.
- Stoye, John. *The Siege of Vienna*. London: Collins, 1964.
- Sun Tzu. *The Art of War*. Translated with an introduction by Samuel B. Griffith. New York: Oxford Univ. Press, 1963.
- Symcox, Geoffrey, ed. *War, Diplomacy, and Imperialism, 1618-1763*. New York: Harper and Row, 1973.
- Taylor, F. L. *The Art of War in Italy, 1494-1529*. London: Cambridge Univ. Press, 1921.
- Thompson, E. A. *The Early Germans*. New York: Oxford Univ. Press, 1965.
- Toy, Sidney. *A History of Fortification from 3000 B.C. to A.D. 1700*. London: Heinemann, 1955.
- Trease, Geoffrey. *The Condottieri: Soldiers of Fortune*. New York: Holt, Rinehart and Winston, 1971.
- Tunis, Edwin. *Weapons: A Pictorial History*. Cleveland: World, 1954.
- Turney-High, Harry Holbert. *Primitive War: Its Practice and Concepts*. 2d ed. Columbia: Univ. of S.C. Press, paperback, 1971.
- Unwin, T. Raynor. *The Defeat of John Hawkins: A Biography of His Third Slaving Voyage*. New York: Macmillan, 1960.
- Vaughan, Richard. *John the Fearless: The Growth of Burgundian Power*. New York: Barnes and Noble, 1966.
- . *Philip the Bold: The Formation of the Burgundian State*. Cambridge, Mass.: Harvard Univ. Press, 1962.
- . *Philip the Good: The Apogee of Burgundy*. New York: Barnes and Noble, 1970.
- Walbank, Frank William. *The Awful Revolution: The Decline of the Roman Empire in the West*. Toronto: Univ. of Toronto Press, paperback, 1969.
- Waltz, Kenneth N. *Man, the State, and War: A Theoretical Analysis*. New York: Columbia Univ. Press, 1959.
- Watson, Francis. *Wallenstein: Soldier Under Saturn*. London: Chatto and Windus, 1938.
- Watson, G. R. *The Roman Soldier*. Ithaca, N.Y.: Cornell Univ. Press, 1969.

- Webster, Graham. *The Roman Imperial Army*. New York: Funk and Wagnalls, 1970.
- Wedgwood, C. V. *The Thirty Years War*. Harmondsworth: Penguin, 1961.
- White, Jon Manchip. *Marshal of France: The Life and Times of Maurice, Comte de Saxe (1696-1750)*. Chicago: Rand McNally, 1962.
- White, Lynn, Jr. *Medieval Technology and Social Change*. 2d ed. New York: Oxford Univ. Press, paperback, 1962.
- Winter, F. E. *Greek Fortifications*. Toronto: Univ. of Toronto Press, 1971.
- Wintringham, Thomas Henry. *The Story of Weapons and Tactics*. Updated by J. N. Blashford-Snell. Harmondsworth: Penguin, 1974.
- Wright, Quincy. *A Study of War*. Abridged and edited by Louise L. Wright. Chicago: Univ. of Chicago Press, paperback, 1965.
- Yadin, Yigael. *The Art of Warfare in Biblical Lands in the Light of Archaeological Study*. 2 vols. New York: McGraw-Hill, 1963.
- Young, Desmond. *Fountain of the Elephants*. New York: Harper, 1959.