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Greek Fire, Poison Arrows & Scorpion Bombs: Biological and Chemical Warfare in the Ancient World

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experience of the First World War that marked the passing of the Mahanian ideal of climactic shoot-outs between battleships and pointed to new realities in naval strategy? Almost from the time the echo of the guns in the North Sea faded, naval strategy shifted to things radically different from decisive battles between capital ships. The strategic framework of *Forward . . . from the Sea* appears to have little in common with Jutland or Dogger Bank.

Nevertheless, the struggle to adapt to this shift is part of the experience we see unfolding in *Castles of Steel*. Jellicoe came to realize that his fleet's primary purpose "was not destruction of the enemy fleet, but command of the sea with the accompanying ability to maintain the blockade." Ultimately, we see a successful adjustment on the strategic level by the British, contrasted with a complete failure of German grand strategy. Finally, this is clearly a well researched book. Telling figures on German economic imports show precisely the effect of the British blockade. Information on the coal consumption of ships could easily have been left out, but because of its inclusion, we have a much better understanding of a ship's limitations and abilities. The reader comes to know the characters involved in the drama, and we can thereby understand their choices better. Robert Massie's careful attention is evident throughout the book and contributes to its stature as a seminal volume in understanding World War I at sea, as well as the evolution of seapower and strategy in the early twentieth century.

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Mayor, Adrienne. *Greek Fire, Poison Arrows & Scorpion Bombs: Biological and Chemical Warfare in the Ancient World*. New York: Overlook, 2003. 319pp. \$27.95

Adrienne Mayor's recent effort is a comprehensive review of the use of biological and chemical weapons by ancient cultures. Mayor is an independent scholar of the classics and folklore who lives in Princeton, New Jersey. She has been published in *MHQ: Quarterly Journal of Military History* and various archeology journals, and she is the author of *The First Fossil Hunters: Paleontology in Greek and Roman Times* (Princeton Univ. Press, 2000); a similarly titled program is scheduled for the History Channel in July 2004.

This work describes in detail the use of weapons of mass destruction by the ancient cultures of Greece, Rome, China, India, Islamic regions, and Mongolia. Mayor presents a much needed update of the historical use of these weapons. If modern scientists appear to understand the nature and effects of chemical and biological weapons through their expertise in biochemical and molecular sciences and epidemiology, ancient civilizations created and used similar weapons by empirical evidence alone.

The (mythical) first use of a biological weapon in the ancient world was by Hercules, who dipped his arrows in the venom of the slain Hydra. Ancient myths may also reflect the realities of their time. Descriptions of poisoned wounds in the Trojan War accurately depict the effects of snake venom and other toxins, lending confirmation of the use of this type of weapon. In AD 198–99, the citizens of Hatra (the

remains of this city are located south of Masul, Iraq) successfully defended their city from a Roman attack by the use of clay-pot bombs likely filled with scorpions and other venomous insects gathered from the surrounding desert. Hannibal catapulted earthenware jars filled with venomous snakes during a decisive naval battle against King Eumenes of Pergamum between 190 and 184 BC.

One of the greatest current concerns in homeland defense today is the protection of food and water supplies from intentional contamination. Mayor presents evidence that purposeful poisoning of food and water sources as a military tactic was once commonplace. The earliest documentation of poisoned drinking water referenced is from Greece in 590 BC, when hellebore was used to poison the water source of the city Kirrha by the Amphictyonic League, causing the inhabitants to become "violently sick to their stomachs and all lay unable to move. The Amphictyons took the city without opposition." Aeneas the Tactician in 350 BC wrote a siegecraft manual recommending that military commanders "make water undrinkable" by polluting rivers, lakes, springs, wells, and cisterns. A more recent analogy is presented with the Iroquois' use of animal skins to cause illness in the water supply of over a thousand French soldiers during the eighteenth century.

The earliest recorded use of incendiary weapons was of flammable arrows by Persia against Athens in 480 BC. Chemical additives soon followed in order to enhance burning characteristics against more sturdy defenses. The use of fire and incendiary material was an important tool during early naval battles. During Alexander the Great's siege of

Tyre in 332 BC, the Phoenicians refitted a large transport ship as a floating chemical firebomb with sulfur, bitumen, pitch, and kindling material. The Phoenicians ignited the ship just before it struck a pier on the fortified island; the pier was destroyed.

Greek fire, an ancient predecessor of napalm, was a weapons system used to attack ships during naval engagements. Pressurized distilled naphtha was pumped through bronze tubes aimed at ships. The delivery system was capable of shooting liquid fire from swiveling nozzles mounted on small boats. It was first used to break the Muslim navy's siege of Constantinople in AD 673, and again saved the city from this fleet in AD 718. From the seventh century, the Byzantines and Arabs formulated variations on Greek fire, which resembled napalm, for "it clung to everything it touched, instantly igniting any organic material—ship's hull, oars, rigging, crew, and their clothing. Nothing was immune." A paper published for Napoleon claims to have rediscovered the lost recipe for Greek fire, with the disturbing title "Weapons for the Burning of Armies."

A thread throughout Mayor's history is unease or taboos associated with biological and chemical weapons. Victims of Hercules' poison arrows included Chiron, a centaur who taught the medical arts to humans, and Hercules' son, Telephus. Such instruments violated the "traditional Hindu laws of conduct for Brahmans and high castes, the Laws of Manu." In 1139 the Second Lateran Council decreed that Greek fire and similar burning weapons were "too murderous" to be used in Europe. A modern chemical weapon tragedy recounted by Mayor is the 2 December

1943 German bombing of the SS *John Harvey*, which was docked in Bari, Italy, secretly holding two thousand M47A1 sulfur mustard (H) bombs. The explosion exposed U.S. personnel and Italian citizens to chemical weapons, which resulted in hundreds of deaths.

This work imparts seminal information on the use of biological and chemical weapons in the ancient world, and as such it provides an outlook missing from much current thought about this era. It is highly recommended.

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Rubin, Barry, and Judith Colp Rubin. *Yasir Arafat: A Political Biography*. New York: Oxford Univ. Press, 2003. 354pp. \$27.50

The Palestinian people would have been better off as citizens of Israel. That is a conclusion one can reach after digesting the political biography of Yasir Arafat by the veteran Middle Eastern writer-reporter team of Barry Rubin and Judith Colp Rubin.

The book is clear on its takeaways. To understand Arafat, you must understand the “struggle” as well as his record of failure. Arafat now holds the record for creating, and remaining the leader of, the planet’s longest-running revolutionary movement, while at the same time failing to bring the Palestinian struggle to a successful conclusion.

In his adult life, Arafat has spent five decades as a revolutionary, forty years as chief of his own group, thirty-plus years as a leader of an entire people, and seven years as head of a government.

Despite all the opportunities and responsibility, Arafat has not brought the Palestinian people peace, victory, or an independent state. His failures and his own vision of the “struggle” have cost the Palestinians dearly. When, in 2000 at Camp David, he was offered a recognized Palestinian state on generally reasonable terms, he walked away. His rejection of the offer ignited the current *intifadah*.

This fresh dissection of Arafat should be of great interest to *Review* readers looking for insight as to why the United States has often appeared “eager to give Arafat another chance” in its own quest to broker a lasting Middle East peace. For years, no matter how many times Arafat proved unreliable, the United States found reasons to give him another chance. Either he is indispensable to the peacemaking process, or he is the lone remaining roadblock. If the United States is ever to break this maddening cycle, it must first know Arafat for who he really is.

The Rubins’ portrait of Arafat may be the most intimate to date, exposing him to the reader and asking questions that beg for answers. How did such a man become the leader of his people? What human “tools” does Arafat exploit?

If one reads only a single chapter, make it “Being Yasir Arafat.” Reading like a psychological profile from a CIA dossier, this chapter not only details some of Arafat’s most intimate behavior, habits, beliefs, and idiosyncrasies but goes on to connect the dots to provide the *why* of his behavior: Why does Arafat forever wear the traditional Arab *kaffiya* head garb, and why is it folded a certain way? Why does he always sport the scruffy beard? Why is he always dressed in a military uniform when he