**The Gunpowder Empires and the Shifting Balance of Global Power**

Like so many of their predecessors, each of the great Muslim dynasties of the pre-modern era came to power with the support of nomadic warrior peoples. Each based the military forces that won and sustained its empire on massed cavalry. But in each case, there was a significant divergence from past conditions. As the outcome of the critical battle of Chaldiran between the Ottomans and Safavids made clear, by the 16th century firearms had become a decisive ele­ment in armed conflict—the key to empire building. In military and political terms, global history had entered a new phase.

Although the Chinese had invented gunpowder and were the first to use it in war, the Mongols were the first to realize the awesome potential of the new type of weaponry based on explosive formulas. The Mongols continued to build their armies around swift cavalry and their skill as mounted archers. But siege cannons became critical to Mongol conquests once they ventured into the highly urbanized civilizations that bordered on their steppe homelands. Mongol successes against intricately walled and heavily fortified cities in China, Russia, and the Islamic heartlands impressed their sedentary and nomadic adversaries with the power of the new weaponry and contributed much to its spread throughout the Eurasian world in the late 13th and 14th centuries.

Innovation in the use of gunpowder spread quickly to many areas, especially Europe and the Mus­lim Middle East. By the late 15th century, muskets and field cannons, however heavy and clumsy the lat­ter might be, were transforming warfare from Europe to China. In the Middle East, Janissary musketeers and heavy artillery became the driving force of Ottoman expansion. The Safavids' lack of artillery was critical to their defeat at Chaldiran. In Europe, armies were increasingly built around musket and artillery regiments. Rival states vied to attract gunsmiths who could provide them with the latest weaponry or, even better, invent guns that would give them decisive advantages over their rivals. In the Atlantic and the Mediterranean, handguns and cannons were intro­duced into sea warfare—an innovation that proved essential to the Europeans' ability to project their power overseas from the 16th century onward.

In many areas, the new military technology con­tributed to broader social and political changes. In feudal Europe and somewhat later in Japan, for exam­ple, siege cannons reduced feudal castles to rubble. In so doing, they struck a mortal blow at the warrior aristocracies that had dominated these societies for centuries. But the success of the new weaponry forced a revolution in the design of fortifications and defense strategies. The defense systems that resulted, which were expensive and elaborate, spawned corps of professional officers and engineers, vast military supply industries, and urban centers enclosed by low-lying walls and star-shaped bastions. The cost of the field artillery, siege weapons, and new defense indus­tries promoted state centralization, as the experience of the Muslim empires and the history of Europe and Japan in the gunpowder age demonstrate. Rulers with national or imperial ambitions had the firepower to level the fortresses of regional lords and thus more effectively control the populations and resources of their domains.

Although the new weaponry was vital to the rise and sustenance of nation-states and empires, some political systems were more compatible than others with efforts to exploit and improve on it. At one extreme, the Chinese scholar-gentry limited innovations in gunpowder weaponry and its use in warfare because they feared that these changes would lead to the dominance of the military in Ming and later Qing society. After the early 1600s, the shoguns, or mili­tary leaders, of neighboring lapan virtually banned the firearms that had done so much to bring them to power. In this case, a military caste feared that the spread of firearms to the general populace would destroy what was left of the feudal order they had built centuries earlier.

The obstacles faced by nomadic peoples such as the Mongols were very different. Their sparse popula­tions and arid lands simply did not generate the resources or sustained invention that would allow them to keep up with their sedentary neighbors in the expensive arms races that the new technology spawned. As the advantages of sedentary societies grew more pronounced in the 17th and 18th centuries, nomadic peoples found not only that they could no longer raid or conquer the agrarian cores but also that sedentary adversaries could advance into and occupy their homelands on the steppe and desert fringes.

Nomadic dynasties, such as the Ottomans, Safavids, and Mughals, who had won their empires in the early stages of the gunpowder revolution, did control the agrarian bases and skilled artisans needed to supply their armies with muskets and siege can­nons. But they were confronted by internal conflicts and, perhaps more critically in the long run, formi­dable external rivals. To begin with, their military technology was far in advance of the transport and communication systems of their far-flung empires. This fact, and their failure to build effective imperial bureaucracies, left them at the mercy of the warrior elites who brought them to power. In each of the three empires, the regional bases of the warrior classes became increasingly independent of the ruling dynasty. This meant that the rulers were denied rev­enue and other resources that were vital to maintain­ing competitive military establishments. Their fragile and overstretched administrative systems proved dif­ficult to reform and more and more ineffective at administering the peasant populations in their charge. Internal revolts further sapped the resources of the hard pressed Muslim dynasties.

In each Muslim empire, decline was hastened by the rise of European rivals, who proved more adept at taking advantage of the gunpowder revolution. The smaller but highly competitive nation-states of Western Europe were better able to mobilize their smaller human and natural resources than their Mus­lim counterparts. Constant struggles for survival in the multi-state European system also made the elites of Spain, England, and France more receptive to technological innovation, which became a central ingredient of political success in the gunpowder era. Emulating the more advanced states of Western Europe, for example, Peter the Great forced social reforms and military innovations that transformed a weak and backward Russia into a powerful adversary of the Ottomans and the nomadic peoples of the steppes. Thus, although it began in China and was initially spread by the Mongol nomads, the gunpow­der revolution eventually tipped the global balance of power in favor of the peoples of Christian Europe. This shift was an essential condition for Europe's rise to global power in the centuries that followed.

**Questions:**

1. What advantages would gunpowder weaponry give to those who used it over those who did not in the early modern era?
2. Why would the use of muskets and early field cannons take a higher level of military organization and troop disci­pline and training than had been needed in ear­lier time periods?
3. What made the new military technology so expensive?
4. Why did the Euro­peans adopt it more readily than most other peoples, and why were they so intent on improving it?