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978-0-521-82274-9 - Firearms: A Global History to 1700

Kenneth Chase

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Firearms

A Global History to 1700

This book is a history of firearms across the world from the 1100s up to the 1700s, from the time of their invention in China to the time when European firearms had surpassed all others. It asks why it was the Europeans who perfected firearms when it was the Chinese who invented them, but it answers this question by examining how firearms were used throughout the world. Early firearms were restricted to infantry and siege warfare, limiting their use outside of Europe and Japan. Steppe and desert nomads imposed a different style of warfare on the Middle East, India, and China – a style with which firearms were incompatible. By the time that better firearms allowed these regions to turn the tables on the nomads, Japan's self-imposed isolation left Europe with no rival in firearms design, production, or use, with consequences that are still with us today.

Kenneth Chase is an attorney at the law firm of Cleary, Gottlieb, Steen and Hamilton. He received his Ph.D. in East Asian Languages and Civilizations from Harvard University and his J.D. from Stanford Law School.

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In Memoriam

Warren Chase

(1934–2000)

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*How, foul and pestilent discovery,
Did'st thou find place within the human heart?*

Ludovico Ariosto, *Orlando Furioso* (1516)

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Preface



I originally approached this topic from an interest in nomads. Reading up on China's relations with the Mongols in the summer of 1991, I was struck by the strategic dilemma facing the Chinese. The Chinese had to defend a thousand miles of frontier against an enemy with superior mobility, one who could choose the time and place of an attack almost at will. The Mongols lived in tents and traveled with their flocks, so the Chinese could not pin them down. Nor could the Chinese possibly hold every point along the frontier with sufficient strength. Arthur Waldron's *The Great Wall of China* analyzed the range of options open to the Chinese and showed that the decision to fortify the frontier in the 1500s was anything but a foregone conclusion.

My interest in the Mongols then took me to other places they had been, like Russia and Iran, and I was struck by the similarities and differences with the strategic situation in China. The Russian border defenses were similar in principle to those in China, albeit far less elaborate. On the other hand, there were no such defenses separating Iran from the steppe. Although China and Russia broke free of the Mongol empire in the 1300s and 1400s, respectively, Turks gained and maintained the upper hand throughout the Middle East and India. The Middle East and India might be taken as an illustration of what happened when the defenses failed, except there was no evidence of such defenses, and anyway they had failed in Russia and China without similar consequences. It was clear that the Middle East and India were hospitable to pastoral nomads in ways that China and Russia were not.

Finally, archeological evidence from the 1970s that firearms had first been invented in China, not in Europe, was just being brought to the attention of the English-reading world, thanks as usual to Joseph Needham's *Science and Civilisation in China*. I found that I already had an answer to a question that no one had given much thought to yet: Why was it the Europeans who perfected firearms when it was the Chinese who invented them? It occurred

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to me that the two areas where the Mongols had not taken me were western Europe and Japan, which were also the two places where firearms had been most prevalent. Conversely, those who routinely fought against nomads did not do much with firearms, even when they had knowledge of such weapons and the means to produce them. This insight was the basis for this book.

It is a commonplace that the steppe and the desert are like the ocean. My approach has been informed by studies of the Mediterranean that give due weight to geography: first and foremost by Fernand Braudel's *The Mediterranean*, but more proximately by John H. Pryor's *Geography, Technology, and War* and John Francis Guilmartin's *Gunpowder and Galleys*. Geography imposes constraints on human action, and especially on warfare, that are neither foreordained nor eternal. It is a geographical fact that the steppes of Mongolia receive limited rainfall, but it is also a geographical fact (and not an inevitable one) that people adapted to that environment in specific historical periods through pastoral nomadic lifestyles. It is also a geographical fact (and again, not an inevitable one) that what we call "China" was united under a single government throughout most of this period and what we call "Europe" was not. Though neither south China nor western Europe borders on the steppe, the implications are very different, because the resources of south China were mobilized to defend north China, whereas the resources of western Europe were not available to defend eastern Europe.

The influence of geography on warfare is nowhere more apparent than in logistics. If we say that the steppe and the desert are like oceans, it is not only because they seem flat and featureless. Armies entering the steppe were like ships putting out to sea. They carried their own provisions with them, and they had to return to the "shore" before those provisions ran out. In the days before railroads and trucks, land transportation was slow and expensive, and soldiers could not easily carry provisions for more than ten or twenty days. Needless to say, nomads did not wander through the steppe and desert with carefree abandon either. Their migrations from summer camp to winter camp and back each year were carefully timed and planned to take advantage of the grass and water along the way. However, nomads were at home under these conditions in ways that others were not. Steppe and desert nomads did not need to fight if they could avoid combat long enough for invaders to run out of supplies. Military historians have rediscovered logistics in recent years, but generals never had the luxury of forgetting them.

I do not argue that technology and geography alone account completely for all experience with firearms. What I do argue is that technology and geography account for the most variation with the fewest factors. There are still cases that deviate from what we would expect based on this hypothesis, but the deviations are fewer than they would be with any equally elegant

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explanation. Technology and geography provide the baseline of expectations by which the truly exceptional cases can be identified. For example, one would expect an advanced country with a long coastline to have a strong navy. It is not really surprising to find that England usually has had a strong navy, nor is it surprising that Madagascar has not (despite its long coastline) or that Switzerland has not (despite its advanced technology). This does not mean that *every* advanced country with a long coastline *always* has a strong navy: China let its navy decline after 1433, and Japan did not build a navy in the 1700s, and we might legitimately expect to find some cultural or political reasons why. Until we know what to expect, however, we will hardly know what to find surprising.

I do believe that rational explanations generally suffice to account for the use and nonuse of firearms in the period covered by this book. It goes without saying that history is full of irrational behavior, but to quote Marshall Hodgson: “However irrational human beings may be, in the long run their irrationalities are mostly random. It is their rational calculations that can be reinforced in continuing human groups and can show persisting orientation and development – even when they are calculations on misconceived presuppositions.”¹ If Shah Ismaïl and his Qizilbash cavalry charged Ottoman musketeers protected by a line of wagons at Chaldiran in 1514 (see Chapter 5, the section “Azarbayjan”), that was a stupid decision, pure and simple. Military history is full of them. If Shah Ismaïl’s successors continued to fight the Ottomans for more than a century with cavalry instead of infantry, that is a sign that something else was going on.

Consistent with this approach, I have little to say about different cultural constructs of war. The truly different examples come from small isolated societies like the Moriori of the Chatham Islands, a peaceful and friendly people enslaved by the Maoris in 1835.² Societies capable of producing firearms were all pretty much indistinguishable from the Maoris in this regard. None of them bore the slightest resemblance to the Moriori. Weaknesses stemming from idiosyncratic notions about the conduct of warfare were exposed and ruthlessly exploited by neighbors who did not share them. Isolated cases did exist – there were European generals during World War I, and maybe even during World War II, who refused to admit that cavalry was no longer the decisive branch of the ground forces. Such notions did not survive long because the people who held them did not survive long. The examples to the contrary most often cited turn out to be questionable (see Chapter 4, note 78 on the Mamluks), or worse, simply wrong (see Chapter 7, note 84 on the Japanese).

As for what Hodgson called “misconceived presuppositions,” some striking ones are held by modern historians about early firearms. When David

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Ayalon expresses surprise that a Muslim historian who died in 1469 never “so much as hinted that bow and lance were obsolete weapons,”³ or when Ray Huang concludes that Chinese firearms must have been poorly manufactured if a Chinese general who died in 1588 “maintained that each company of musketeers must be accompanied by a company of soldiers carrying contact weapons,”⁴ then there is clearly some misunderstanding about certain basic facts of military history even among historians of this caliber. In 1565, a century after the death of the Muslim historian and in the middle of the career of the Chinese general, a typical picture of a European battlefield (see Figure 3.1) still shows, among other things, (1) two bodies of lancers on horseback and (2) pikemen marching in formation in front of musketeers.

If we do not know what people knew, then we can hardly know what they thought. If people knew that matchlock muskets could not be loaded on horseback; if they knew that pistols had an effective range of less than six feet; if they knew that musketeers without pikemen would be cut to pieces by cavalry with swords; if they knew that Mongols rode horses and lived in tents and had no cities or castles; if they knew that infantry could not carry much more than ten days’ rations or march much more than twelve miles in a day – then we need to know some of the same things if we hope to understand why they thought what they thought and why they did what they did.

This is not a comprehensive history of warfare across the world in the first six centuries of the existence of firearms. Such a history would require many volumes much larger than this one. This book is an attempt to call attention to one particular influence (the relationship of nomads to firearms) on one particular facet (the successes and failures with firearms) of that history. I have had to keep the focus as tight as possible in order to keep this book down to a readable length. Where I have used primary sources, limitations of space have kept me from going into them in any great detail, and I have been forced to summarize more often than I would like. Where I have quoted translations other than my own, I have changed the romanization of names as necessary to conform to the romanization used elsewhere in the book.

I owe thanks to more people than I can possibly mention by name, but I will do the best that I can.

I was fortunate to grow up in a town with a fine public school system and a fine public library, and I would like to thank all the people who made these possible. I was also fortunate to have many enthusiastic language teachers throughout my education, but I would especially like to thank my teacher of classical Chinese at Princeton University, Yuan Nai-ying, whose commitment

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and enthusiasm are known to generations of students. I had many great professors at Princeton, but I should give special thanks to Arthur Waldron.

In the Department of East Asian Languages and Civilizations at Harvard University I would particularly like to thank my advisors, Peter Bol in Chinese history and Harold Bolitho in Japanese history, to whom I am indebted for my professional training as a historian. While conducting research at Kyoto University, I was privileged to study with two outstanding scholars, Mano Eiji in Central Asian and Islamic studies and Sugiyama Masaaki in Mongol and Chinese history, who started me thinking about world history. I am indebted to Robert Hymes and Manouchehr Kasheff for making my year at Columbia University both pleasant and productive.

When I returned to Harvard to complete my dissertation and begin this project, I benefited from the guidance of Roy Mottahedeh as well as the support of the Academy Scholar program; I feel like the black sheep of the program, most of whose alumni have gone on to successful academic careers, so I would like to take this opportunity to record my gratitude to Ira Kucin and Henry Rosovsky. I am extremely grateful to Wheeler Thackston, who spent years patiently helping me read Persian, both while I was in graduate school and long after I had gone off to law school.

Over the years that I have been working on this book, I have received encouragement and comments and suggestions and help from a great many people. Gunder Frank gave both suggestions and encouragement at an early stage. John Woods was very kind in sharing with me his own unpublished research on the history of firearms in Iran and Central Asia, for which I am very grateful. David Graff shared some of his knowledge of military history with me, and Leo Shin gave me timely help with some of the citations.

A number of people read drafts of this work or sat patiently through long explanations of it. Special thanks are due to Peter Lorge, William McRae, Karl Gerth, Judy Chase, and the two anonymous readers for Cambridge University Press, who gave me valuable suggestions and encouragement. If I was too stubborn to take full advantage of all their comments I have only myself to blame, and the reader need hardly be told that responsibility for all remaining errors is completely my own.

I would also like to thank Gang Gong and Ryan Duty for their patience through countless drafts of the maps, and the staff at the Starr East Asian Library at Columbia University, the New York Public Library, the Princeton University Library, and Art Resource for their assistance with the illustrations.

Finally, and above all, I would like to thank my family.