

Contents

| | |
|--------------------------------------------------|------|
| <i>Preface</i> | viii |
| 1 Introduction | 1 |
| 2 Sixteenth-Century Background | 12 |
| 3 Conflict, 1590–1615 | 28 |
| 4 Conflict, 1616–1650 | 47 |
| 5 Conflict, 1650–1683 | 80 |
| 6 The Expansion of Europe | 106 |
| 7 Conflict, 1683–1707 | 134 |
| 8 Naval Capability and Warfare | 151 |
| 9 Warfare, Social Contexts and State Development | 170 |
| 10 Conclusions: Beyond the Military Revolution | 188 |
| <i>Selected Further Reading</i> | 201 |
| <i>Notes</i> | 202 |
| <i>Index</i> | 220 |

1 Introduction

War played a key role in the history of the seventeenth century. It was a prime means by which empires, states and peoples expanded and resisted expansion, and the way in which ministers, rulers, dynasties, indeed systems of control, were overthrown in particular states. War thus linked the Europeans establishing their position in North America to the Manchu taking over the most populous empire in the world, Ming China.

Method

There is a danger, however, that military history on the global scale can become a blizzard of names and dates. That is not the intention here, but neither is it the plan to reduce this fascinating and complex century to the simplicity of a clear-cut pattern with allegedly exemplary battles or leaders that apparently provide guidance to an obvious schema. No such schema existed and, however attractive, the idea of exemplary battles or leaders is highly questionable. Moreover, I reject the idea that discussion should be related to a thesis of military change based on stages established by ideal forms of conduct and paradigmatic powers providing a clear model for conduct,¹ not least because this problematic thesis leads in practice to a focus on a small number of powers, with much of the world ignored or discussed largely in terms of these powers, for example with reference to the idea of the diffusion of best practice through the emulation of their methods.

The Military Revolution

Such an approach is seen in the most influential book on the subject, Geoffrey Parker's impressive and groundbreaking *The Military Revolution: Military Innovation and the Rise of the West, 1500–1800* (1988). He argued that 'all the evidence for radical military change, whether in army size, fortifications, or firearms, comes from the lands of the Habsburgs or of their neighbours ... That was the heartland of the military revolution', and, as is normal with historians seeking to establish significance, it was the area

of Parker's expertise. The Spanish branch of the Habsburg family ruled not only Spain but also much of Italy as well as the Spanish Netherlands (modern Belgium). Elsewhere in Europe, where the changes of the Military Revolution do not take place or not to the same extent, this situation is presented as failure.² This approach is replicated by Parker at the global scale, which is highly instructive as far as linking developments across the world is concerned, notably those in Japan with those in Europe. Yet, the global approach is also unhelpful as it assumes or implies that there was a clear pattern of appropriate development predicated on an obvious best practice.

In practice, the principal modern analytical framework and device for the period, the Military Revolution, has been applied with a number of different emphases, and there is not always a ready relationship and correspondence between these. Michael Roberts, who famously advanced the idea, was particularly interested in combined arms tactics and governmental development.³ Tactics were discussed in terms of infantry volley fire, with the view that there was only one doctrine concerning the effective use of muskets in the field, and that the drill and discipline necessary to provide this became crucial to a distinctive Western way of war.⁴ Moreover, the new-model tactics presented as necessary to make best use of the pike-musket combination were regarded by those who advanced and deployed the thesis of the Military Revolution as requiring larger forces, and as both needing, and making possible, a stronger government able to support such forces.

Yet, in discussing those states, peoples and groups who acted other than in terms of this Revolution largely in terms of failure, or with that assumption at least implicit, this argument is methodologically questionable, not least as it is normal to adopt practices that seem appropriate, and past societies generally had a better idea of this than scholars writing with the confidence of posterity. Furthermore, the approach is empirically problematic as the variety of military systems and methods were fit for purpose within the constraints of the relevant social systems, the latter an insight noted by eighteenth-century writers discussing, at least *en passant*, historical sociology, most obviously Edward Gibbon and Adam Smith. The caveat of social constraints is instructive, and is frequently employed to criticise societies that did not adopt firearms, or did not use them successfully, but that simple model has to be handled with care as it makes the adoption of the gun the prime narrative and analysis of military development when the situation, in fact, was more complex.

This complexity reflects the number of routes of development, a situation that arose from the great variations in the cultural and environmental

contexts of warfare. Thus, a nomadic society in Central Asia (or Central Eurasia as it is sometimes now termed) operated in a very different fashion to urban northern Italy, an area in which states were numerous and state boundaries relatively well defined. It is also misleading to adopt a determinist approach to environmentalism and to assume that all nomadic (or urban) societies acted alike, or even were likely to do so, an approach that, in particular, can lead to the inaccurate primitivisation of the former, as in some of the writing on China's steppe opponents, those who lived on the plains to its north and north-west. As a related point, fitness for purpose, the classic definition of fighting and organisational capability, had differing meanings and consequences across the world. It is terribly tempting to search for comparisons as a means of explanation, but such comparisons have to be grounded in these understandings of contexts and meanings, rather than being used as a basis for statements about a relative capability that is wrenched out of context.

An instance of this problem is provided by the central concept employed when discussing warfare in Europe and then, by extension, the world, the Military Revolution already referred to. As originally advanced and applied, notably in the 1950s by Michael Roberts, a specialist on seventeenth-century Sweden,⁵ this thesis was an account of change within Europe (understood throughout as Christian Europe). Roberts saw the Swedish army under Gustavus Adolphus (r. 1611–32) as bringing to fruition tactical innovations developed by the Dutch in order to increase infantry firepower. The Dutch introduced broader and shallower troop formations which permitted more soldiers to fire at once, and in the 1590s they developed continuous fire by using a volley technique, so that one rank of soldiers fired simultaneously and then reloaded while other ranks fired in turn. This method produced continuous fire, and thus offered a protection against attack separate to that provided by pikemen. The method was also developed in Japan from the 1560s, but was advanced in Europe by William Lodewijk of Nassau, Governor of the Dutch province of Friesland and a scholar of Classical literature. The *Tactica* of Aelian written in about 100 CE (AD) provided the key text, and in 1594 William wrote about it to his cousin, Count Maurice of Nassau, the commanding general of the United Provinces (modern Netherlands). Aelian provided much detail in matters of drill, and this detail proved of great value to the army organisers of the period, as did his critical account of earlier works on the art of war. Editions of Aelian included a Leiden one in 1613 and *The Tactics of Aelian or art of embattailing an army after the Grecian manner* (London, 1616).⁶ Reference to Aelian reflected the authority of Antiquity and the habit of comparison with Classical methods, which were well established in the literature on war, as with Imperiale Cinuzzi's *La Vera Militar Disciplina Antica e*

Moderna (Siena, 1604), Hermannus Hugo's *De Militia Equestri Antiqua et Nova* (Antwerp, 1630) and Jacques Ozanam's *Traité de Fortification, contenant les methodes anciennes et modernes pour la construction et la deffense des places* (Paris, 1694). Authors who wrote on modern military history, such as Johann Jacobi, also published on Classical warfare, in his case *La Milice Romaine* (Frankfurt, 1616).

Maurice was impressed by Aelian's account of the drill of Classical pikemen and slingers, and he took steps to improve and standardise the drill and the army. Maurice also increased the firepower of each company and encouraged the standardisation of weapons, although this was a difficult process because the company commanders were responsible for buying the weapons themselves. Real standardisation began only after 1627 when the captains were obliged to procure their equipment from provincial arsenals.

The importance of mercenaries, which included the majority of Gustavus's troops in Germany in the 1630s, and the hiring of foreign officers helped ensure a spread in tactical innovations, as did publications such as Henry Hexham's *The Principles of the Art of Militarie; practised in the wars of the United Netherlands* (3 vols, 1635–40); but, as new methods spread, they were also changed. Whereas the Dutch had earlier tended to use the rotation of ranks of musketeers defensively, so that, having fired, they retired to reload while colleagues behind took their place, Gustavus employed rotation offensively, the other ranks moving forward through stationary reloaders. He also equipped his infantry units with mobile small cannon and trained his cavalry in a shock charge pressed home with swords in the manner of the Polish cavalry, rather than with pistol fire at short range. The latter inflicted casualties but lacked impact and decisiveness.

Roberts's concentration on the Dutch and Swedish was refocused by Parker to include Spain but was also broadened out fruitfully to consider the world scale: first, the role of the Military Revolution in giving Europeans greater relative capability, and thus aiding their expansion, and, secondly, parallel and contrasting developments across the globe. The Military Revolution therefore came to stand for the discussion of military activity and change both in a period of time – the early-modern period, generally understood as 1450–1790 – and also in terms of a particular response, that to the ready availability on a large scale of gunpowder weaponry.

In turn, the period of time takes on reality in a European narrative of history that is structured in military terms with reference to this weaponry and related infantry tactics, and thus fails to give due weight to differing trajectories of development.⁷ It is not immediately clear, for example, why

so much more attention is devoted to the military history of Western Europe, the centre of the Military Revolution, rather than Eastern Europe, other than as a result of a misleading primitivisation of the latter that underplays the extent to which there were important developments in both regions. Indeed, in terms of the consolidation of states that were to be important to subsequent European history, the seventeenth century was significant in Eastern Europe, notably with the survival of Russia from the 'Time of Troubles' in its early years, and that of Austria from Ottoman (Turkish) assault in 1683. More generally, the close-order tactics used in battle in Western Europe and considered by the protagonists of the Military Revolution were not very serviceable in many contexts around the world. Even in Western Europe, the combined armed tactics of the Military Revolution were (as ever) far easier to discuss in training manuals, which emphasised drill, and to attempt in combat, than they were to execute successfully under the strain of battle. Moreover, the contrasting fighting characteristics of the individual arms – muskets, pike, cavalry, cannon – operated very differently in particular circumstances, and this situation posed added problems for co-ordination. So also did the limited extent to which many generals and officers understood these characteristics and problems.

Military adaptation is a more appropriate term than revolution, not least because the latter carries with it a meaning of clear intention and direction, and a teleology linked to that of a comparable presentation of government development. In practice, the major characteristic, in both warfare and government, was that of expedients, such that the pursuit of successful expediency became more than solely a method of response and, instead, frequently was also the goal of change. Both on campaign and on the battlefield, far from war being won by planned action, it was often the side that was less prevented from pursuing goals by its weaknesses that was successful; and coping with these weaknesses was the major skill of command. On campaign, providing supplies was both difficult and vital,⁸ while, amid the uncertainty of battle, the retention and use of reserves was often crucial.

Aside from the historical focus on the Military Revolution, the 1990s and early 2000s saw a revived interest in the concept of military revolution,⁹ as work on the contemporary 'Revolution in Military Affairs' (RMA) led to consideration of supposed antecedents.¹⁰ This, however, was a somewhat dubious proposition, not least because the self-conscious character of the RMA as a revolutionary, new development was not widely matched in the early-modern period. Instead, there was also then a strong, continued and, in many respects, new belief in the value of Classical exemplars,

and therefore a looking back to the ancient world which was still strong in the seventeenth century; indeed, aspects of the work on military tactics drew directly on Roman examples. Whether or not there is an effective modern RMA, as opposed to a discourse to that end, that offers no proof of a similar situation in the early-modern period. The case for a military revolution then remains not proven at best and dubious at worst. The relevant literature is of great value, but the increased looseness of categories (and chronological extension) for discussion of the early-modern Military Revolution is such that there is no longer the analytical clarity that was once the case.

Instead, the concept has become widely used despite, or maybe because, it can be employed with a variety of meanings as to definition and dating, causes and consequences. Moreover, the phrase Military Revolution combines a noun with an adjective such that, in grammatical terms, it should be understood as signifying a revolution that is military in kind, whereas it has been used to denote a revolution concerning the military, with the revolution understood as concerning core aspects of war making affected by weapons technology and its consequences on the conduct of war. Thus, a phrase such as 'revolution in the conduct of war' might best describe the standard thesis, although in practice there was no revolutionary change in this conduct during the period 1450–1790, at least on land. In lieu of such a revolution, the demand for maintaining the stability of the world prevailed, and the modifications in weapons technology, tactics, operations and strategy that occurred were adapted to the overall demand for this stability.

The variety of meanings can make overall assessment difficult, but there is also often insufficient attention to process when discussing the early-modern Military Revolution. Indeed, the idea of a military revolution rests essentially on a 'push' theory of warfare, which interprets war in terms of the material culture of conflict, specifically the weaponry, such that tactical factors linked to the use of weapons tend to drive the analysis. This approach devotes insufficient attention to operational 'push' factors, but even more to 'pull' factors in terms of demands on the military, in other words the purposes of military capability, use, and related force structures and doctrines. There is scant sign of a full-fledged revolution in these purposes in Europe, certainly on land, in the seventeenth century or, indeed, in the early-modern period as a whole; although, at sea, there was a new interest in Europe from the late sixteenth century in protecting or attacking transoceanic maritime links. Moreover, maritime capability required detailed planning, logistical support, political commitment, administrative competence, leadership and training, as

well as an ability to overcome the challenges posed by technological innovation. The maritime expeditionary warfare of the Mediterranean, Baltic and Atlantic was an important aspect of the conflicts of the period between European states.

Yet, despite the enhanced capability of the major European naval powers, the use of the concept of a military revolution, even at sea, and, certainly, more generally, can carry with it misleading teleological connotations. On land, military adaptation, particularly to the opportunities and problems for co-ordination of individual arms, is a more appropriate term, while the timescale of the adaptation does not anyway accord with understandings of revolution as occurring over a relatively short period. As another qualification of the concept of a military revolution, far from war being necessarily won by planned action, it was frequently the side that was less handicapped by deficiencies that was successful: coping with problems was the major skill of command, both on campaign and on the battlefield. However, in making these and other assessments, there is always the problem that operational and tactical details for many of the wars, including the deployment of forces on the battlefield and the course of engagements, are less than complete, and, for many campaign engagements, were limited.

The intention here is to consider the seventeenth century not in terms of the Military Revolution, a concept that can readily shift meaning and context, but rather to focus on capability, change and continuity, and only at the close to consider whether the Military Revolution is still a relevant concept.¹¹ Here the global reach of the Military Revolution thesis is matched with discussions of local military histories from all over the globe, discussions that undermine the single-cause determinism of that thesis. The start and end dates chosen to frame the investigation are primarily stages in Christian chronology, but they are also chosen precisely because they do not appear as turning points, and thus their choice indicates a theme of continuity that is significant. This theme links to a wider critique of a misleading tendency in work by some early-modernists to treat medieval warfare as primitive in comparison with what was to come, and also to present it in teleological terms with an emphasis on the development of infantry and, in particular, on archers, notably longbowmen, as progenitors of the subsequent introduction of hand-held gunpowder weaponry. This approach has led to a slighting of the variety of medieval warfare and to a misleading account of its development.¹²

Nevertheless, at the same time, changes did occur around the world. Aside from those of the fifteenth and sixteenth centuries, and their continuing consequences for developments in the seventeenth century, the

contexts and uses of force in 1700 were not identical with those in 1600. That situation highlights the need to consider changes during the century, albeit again without overloading any particular chosen turning point. For example, although warships in 1700 were still wooden vessels dependent on wind power or that of human rowers, the organisation and firepower of European warships changed greatly during the century and there has been discussion of an early-modern naval revolution.¹³ However, the 'although' phrase captures the difficulty of deciding where to place the emphasis, a perennial issue for historians, and one that is of particular note for a century generally discussed for Europe in terms, first, of the supposed revolutionary character of its early decades and, secondly, of a more conservative, or at least non-revolutionary, second half.

Ironically, in so far as significant European changes can be discerned, these, indeed, should be dated to the period 1660–1760, rather than the previous century, the period of the classic Military Revolution as advanced by Roberts. In particular, to consider the period from 1660, the tactical innovations focused on line-ahead tactics at sea and the development of the bayonet on land, both measures that enhanced firepower and mobility, can be set alongside the significant development in British and Russian military power, as well as the growth of what have been termed fiscal-military states. In the sense of 'beyond', it is also necessary to ask how the relationship between the seventeenth century and the following century is to be considered. In particular, there is the question of whether the closing decades of the seventeenth century established a pattern, of change and/or continuity, that was the key element for most of the eighteenth, the approach taken for example both by those who discern Europe in terms of fiscal-military states and by scholars who focus on the concept of Absolutism. This topic relates to how the period of the alleged early-modern Military Revolution links with that beginning with the French Revolutionary Wars.¹⁴ In doing so, it is appropriate to address these issues at the world scale as this approach provides a way to gauge their wider significance.

Linked to the standard chronological approach, with its emphasis on the early decades of the seventeenth century, as well as to the idea of an early-modern Military Revolution that imposed heavy burdens on states and societies, comes the concept of a general seventeenth-century crisis, which has been held to be the consequence and cause of political and military events and developments around the world. This concept has been applied both specifically to the mid-century and, more generally, to the century as a whole with its varied and related demographic, economic, social and political problems. The crisis may have been triggered by a sudden change

in global temperature which had drastic effects on the food supply and stability of peoples across the world.¹⁵ As such it is a reminder that human agencies, whether or not in warfare, were not necessarily the drivers of change.

Suggesting that discussion can, indeed should, move beyond the idea of an early-modern military revolution raises questions that are both latent throughout the text and that can guide the response to it. In particular, there is the question of whether there is an overarching thesis to replace that of the early-modern Military Revolution and, if so, what its relationship with that concept will be. Alternatively, can the concept of the Military Revolution be adapted to make sense of developments around the world during the seventeenth century? The concept has been used thus, notably by Parker and, for Morocco, by Weston Cook, and also, for example, to discuss West Africa in the 1690s.¹⁶ Nevertheless, there is room to ask whether the very concept of the early-modern Military Revolution can be employed, even transformed, to respond to the variety of developments, particularly in China and India as well as Europe; or whether the challenge is too great, such that a new concept is required. Peter Lorge's argument that a military revolution, in the shape of the ability to produce and sustain effective gun-using forces, occurred in Asia and then spread to Europe is valuable, but may also indicate an overloading of the term.¹⁷

The interrelated nature of wars in different regions certainly represented a form of transmission between events and developments in particular areas. Thus, the Ottoman empire's ability to respond to challenges from Safavid Persia to its east was, at least in part, dependent on the state of its relations with Christian Europe to its west and north. Yet, there was also more separateness than was allowed for by those who suggested that such relationships could readily be affected. In February 1676, a British envoy in The Hague, the capital of the United Provinces (Netherlands), noted the talk there that the hostile Louis XIV of France would ensure peace between Poland and the Ottomans, so as to enable Poland to attack Brandenburg-Prussia, which would weaken the coalition opposed to France in the Dutch War that had started in 1672. Meredith added, 'yet they do not seem to think the influence of that king [of Poland] upon his nation to be such as can bring that design to pass without great opposition and on the other side they seem very confidently to build upon the Muscovites [Russians] engaging for them against the Swedes',¹⁸ who, in turn, were allied with Louis XIV and opposed to Brandenburg-Prussia and the Dutch. In the event, Poland and Russia did not attack Brandenburg-Prussia and Sweden respectively.

Themes

The tension between the specific and the general, and between research and theorisation, is a common one in history, and military history is no exception. Thus, for example, the sweeping statements frequently made about the Military Revolution or concerning European *ancien régime* warfare (that of 1648–1789), and their ‘location’ in terms of general theories of military development, appear misleading, if not glib, as any consideration of the excellent detailed work available suggests. Notably, *ancien régime* European warfare can be dismissed as rigid and anachronistic, as is frequently done from the generalists’ perspective, only if a very narrow and misleading view of it is taken. Instead, this warfare displayed both dynamism and flexibility, although, at the same time, its dynamism and flexibility should not detract attention from the variety of military systems and conflict elsewhere in the world. This comparative dimension is an important topic for research and discussion, and must not be reduced to a consideration only of warfare between Europeans and non-Europeans.

More generally, models of military development that assume some mechanistic search for efficiency and a maximisation of force do violence to the complex process by which interests in new methods interacted with powerful elements of continuity. For example, a stress on the value of morale and the importance of honour came naturally to the aristocratic order that dominated war making, and traditional assumptions about appropriate conduct were important in force structure and tactics. Across the world, notions of best practice and effectiveness were framed and applied in terms of dominant cultural and social patterns. Thus, although gunpowder-armed forces pressed hard in the seventeenth century on those who lacked such armaments,¹⁹ bellicosity, capability and sophistication were far from restricted to the world of gunpowder empires.

The cost of war

Lastly, a simple point that is always pertinent for military historians. In writing and reading about the subject, it is all too easy to forget the pain and suffering involved in conflict and warfare, for soldiers and civilians alike. Given both personal experience and accounts of atrocities, for example Christian Loper’s *Laniena Paswalcensis: that is, a tragical relation of the plundering, butchering, ravishing of the women and firing of the town of Pasewalke in Pomerland [Pomerania] (1631)*, that was not a mistake made by contemporaries, and is not the case here. The killing of civilians and rape of women was commonplace²⁰ and in Western Europe was not limited to the barbarities

of the Thirty Years' War (1618–48), as is sometimes implied. It is arresting to note in the archives accounts of episodes such as that at Maastricht (in the Netherlands), a fortress captured by the French from the Dutch in 1673. In September 1676, the French sent out a raiding party that burned down houses, took prisoners and extorted contributions of supplies to support their garrison. The Dutch, however, forbade their subjects to pay these contributions, and, as a result of the non-payment, the French executed their hostages in May 1677.²¹ The military themselves suffered terrible casualties. Visiting the Dutch camp before besieged Maastricht in July 1676, John Ellis found many wounded 'maimed many of them as if they had been in a sea-fight, such scarcity of legs and arms there is amongst them'.²² Thus, read about war, but also be aware of what you read.

Index

- Abahai, 50
 Abatis Line, 20, 90
 Abbas I of Persia, Shah, 29, 30, 45–6, 57,
 62, 123, 182, 196
 Abbas II of Persia, Shah, 57
 Abd al-Malik, 29
 Abd Allah Sultan, 30
 absolutism, 8, 104
 Abyssinia (Ethiopia), 14, 44, 80, 139
 Aden, 152, 157
 Aelian
 Tactica, 3, 4
 aesthetics of warfare, 181–2
 Afghanistan, 56
 Africa, 115–21, 138–9, 162–3, 167, 168
 establishment of new trading posts
 through co-operation, 120–1
 javelin-men, 119
 Portuguese in, 115–18
 slave trade, 121, 162
 style of warfare, 119–20
 transformation of peasants into
 effective soldiers, 120
 use of firearms, 116, 119–20
 Afridi, rebellion of (1672), 85
 Agung of Mataram, Sultan, 152
 Ahmadnagar, 57, 63, 68
 Ahmed I, 37
 Ahom, 55–6, 85, 86, 137
 Aix-la-Chapelle, Treaty of (1668), 95
 Akbar, 15, 57
 Akwamu, 119, 120
 Alba, Duke of, 70
 Albazin, sieges of (1685/6), 106
 Alcazarquivir, battle of (1578), 29
 Alexander the Great, 18
 Alexei, Tsar, 93, 94, 149, 171
 Algiers, 14, 121, 122, 156
 Ali Janbulad, 38
 Aloma, Idris (ruler of Bornu), 44–5
 Ambar, Diwan Malik, 68
 Ambuila, Battle of (1665), 117
 American War of Independence, 75
 amphibious operations, 159–60
 Anatolia
 rebellion against Ottomans, 37–8, 51
ancien regime, 10, 27, 190
 Andrusovo, Truce of (1667), 95
 Anglo-Dutch Wars, 159
 (First) (1652–4), 160
 (Second) (1665–7), 94
 (Third) (1674), 12, 97
 Angola, 112, 116, 117, 162
 Antonio I of Kongo, 117
 Arakan, 59, 152
 archers, 7, 14, 15, 17, 54, 119
 mounted, 13, 15, 16, 17–18, 32, 48, 56,
 66
 aristocracy
 remilitarisation of English, 76
 Armada (1588), 38, 39
 Army of Flanders, 70, 71, 93
 army size, 187
 Arrianus, Flavius
 Ars Tactica, 189
 artillery, 53, 191
 developments of, 78
 Mughal empire, 15, 58, 138

- and process of mathematisation, 191
 publications, on, 65–6, 192
- artillery fortresses, 81, 107
- Asante, 119, 120
- Asebu army, 119
- Athlone, 143, 144
- Aughrim, Battle of (1691), 144
- Aurangzeb, Prince, 56, 57, 78, 83, 84, 85,
 86, 92, 105, 122, 136, 137, 138
- Austrians, 171–2
 abandonment of pike and
 deployment of bayonet, 140
 and Peace of Westphalia, 69
 system of warfare, 132–3
 Thirteen Years' War against the
 Ottomans (1593–1606), 33–4, 45,
 51, 124, 176
 and Thirty Years' War, 60–4, 66
 war against Ottomans (1683–99),
 128–33
- Ayuuki Khan, 150
- Azov, 19, 110, 131, 149, 156, 165
- Aztecs, 14, 20
- Babur, 15, 16
- Baghdad, 25, 45, 62, 110, 125
- ballistics, 78, 191, 192, 194
- Baner, Johan, 68
- Bank of England, 166
- Bantry Bay, Battle of (1692), 160
- Banu Khalid rebellion (1670), 118
- Barbary states, 155–6, 157
- Barcelona, 88, 146
- Barfleur, Battle of (1692), 160
bargi-giri, 136
- Barlow, William
The Navigators Supply, 164
- Barriffe, William, 189–90
- Bart, Jan, 167
- Basra, 46, 157
- Basta, Giorgio, 192
- Batavia, 114, 115, 151
- Bavaria, 60, 63, 68, 145, 186
- bayonet drills, 140
- bayonets, 8, 139–40, 148, 192
- Béarn, 46
- Belarus, 94
- Belgorod Line, 90
- Belgrade, 131, 132
- Bengal
 revolt against Mughal rule
 (1696–8), 138
- Bernard of Saxe-Weimar, Duke, 65
- betrayal, 19, 33, 36, 37, 83, 107, 177
- Bijapur, 57, 58, 85, 86, 106, 136
- Bishops' Wars (1639–40), 72, 181
- Blenheim, Battle of (1704), 147
- blockades, 99–100, 126, 157, 158, 159, 164
- Bohemia, 60, 66
- Bohemian Revolt (1618/20), 172, 181
- Bolotnikov, Ivan, 36
- Bombay, 121, 122, 155
- Bonn, 96
- Bornu, 44
- Boyne, Battle of the (1690), 142–3
- Brandenburg-Prussia, 9, 73, 101
- Braun, Ernst, 191
- Brazil, 67, 162, 163
- Breda, siege of (1625), 65, 78
- Breitenfeld, Battle of (1631), 62, 67, 68
- bridging points, 143
- brigandage, 155
- Britain
 civil wars (1638–52), 72–8, 88, 181
see also England
- British Indian Army, 55
- Buchner, Johann, 192
- Buda, 33, 110, 125, 129
- bureaucratic systems, 180
- Burma, 59, 109
- Caesar, Julius, 189
- Cambodia, 180
- Candia (Crete), 125, 126
- cannon, 13, 14, 15, 21, 31, 34, 49, 77–8
- canoes, 167
- Cape Navarino, Battle of (1827), 132
- Cape Town, 151

- capitalism, 175
 Caribbean, 161–2
 Caroline Islands, 154
 Casale, 146
 casualties, 199–200
 Catalan war of independence, 70, 87, 171, 181
 Cateau-Cambrésis, Treaty of (1559), 39
 Catherine of Braganza, 121
 Catholic Counter-Reformation, 172
 Catholic League, 60, 67
 Catholicism
 divide between Protestantism and, 172–3
 cavalry, 16, 23
 Eastern Europe, 71–2, 93
 and English Civil War, 77
 and environmental factors, 17
 impact of disease and climate on, 54
 importance of in conflicts, 53–4
 Manchu, 16, 53
 Maratha, 86
 Mughals, 15, 58, 86
 use of in Thirty Years' War, 54–5, 66, 68
 use of in war between Spain and Portugal (1640–68), 72
 Caxton, William, 190
 Cayenne (French Guiana), 162
 Cellarius, Andreas, 192
 Chandos, Lord, 129
 Charles Emmanuel I, Duke, 185
 Charles Emmanuel II, Duke, 186
 Charles Emmanuel III, Duke, 185
 Charles I, King of England, 72–3, 74, 75, 77, 88
 Charles II, King of England, 89–90, 147, 183–4
 Charles II, King of Spain, 104, 139
 Charles of Lorraine, 97, 130
 Charles of Södermanland, Duke, 35
 Charles V, Emperor, 38–9
 Charles V of Lorraine, 97, 129
 Charles X, King of Sweden, 91
 Charles XI, King of Sweden, 97, 98
 Charles XII, King of Sweden, 108, 139, 148, 150
 charts/maps, 164
 Ch'en Lin, 32
 China, 3, 15, 19–20, 80–2, 109–10, 134–6
 conflict with Dutch, 114, 153
 conflict with the Dzhungars, 109–10, 134–6
 conflict with Russia, 134
 and fortifications, 19–20, 110
 and gunpowder weaponry, 13
 internal stability, 82
 and Japan's invasion of Korea (1590s), 31–2, 48
 logistical and organisational system under Manchus, 135
 Manchu conquest of Ming, 32, 41, 47, 48–53, 54–5, 79, 80–1, 84
 military capability, 53–5
 Ming, 19–20, 135, 197–8
 Mongol invasion, 20, 52, 53
 naval capability/warfare, 152–3
 occupation of Taiwan, 105
 and Rebellion of the Three Feudatories, 55, 81–2, 84, 92, 110, 134, 181, 185
 rebellions in, 50, 51
 success in 1690s, 135–6
 use of European artillery experts, 195–6
 Chinggis Khan, 12, 15, 48
 Chios, 156–7
 Chittagong, 85, 115
 Christian IV, King of Denmark, 61, 63
 Chukchi, 111
 Cinuzzi, Imperiale, 4
 civil wars, 22, 180–1 *see also* English Civil Wars
 civilians, killing of, 10–11
 classical warfare/texts, 3–4, 5–6, 189, 192
 Clement VIII, Pope, 45
 climate, 8–9, 54

- close-order tactics, 5, 119
- Clubmen movement, 74
- Colbert, Jean-Baptiste, 103, 164
- Columbus, Christopher, 12
- combined arms approach, 2, 15, 16, 50, 58
- command skills, 24
and English Civil War, 77
- commanders
deaths of in battles, 144
- composite forces, 83
- Condé, Prince of, 77, 91, 94–5, 97, 102
- conscription, 174, 178, 179, 182
- consolidation, 21, 40, 54, 80, 88, 90–2, 172
- Constantinople, fall of to Ottomans
(1453), 12
- Cook, Weston, 9
- Cork, 143
- Cossacks, 35, 37, 90, 94, 156, 184
- Coysexov, Antoine, 101
- Créqui, 97
- Crete
Ottoman campaign against (1645–69),
125–6, 156, 157
- Crimean Tatars, 17, 20, 28, 90, 125, 126,
135, 149
- Cromwell, Oliver, 75, 77, 88–9
- Cruso, John, 190
Castrametation, 74
- cultural dimensions, 199
- Cyprus, 156
- Czarniecki, Stefan, 91
- Dahomey, 120
- Dara Shikoh, 78, 83
- Dardanelles
Venetian attempts to blockade
(1647–8), 126, 157
- Dassié, Sieur de, 164
- de Brito, Philip, 180
- de Croy, Charles, 194
- de Fer, Nicolas, 194
- de Gaya, Louis, 192
- de Medrano, Sebastián Fernández, 98
- de Ville, Antoine, 98
- defection
role of in conflicts, 36, 45
see also mutinies
- demographic approach, 47
- Denmark, 62, 97–8, 139, 148, 178, 185
- Denys, Guillaume, 164
- desertion, 22, 63, 102, 141, 178
- Devolution, War of (1667–8), 94, 96,
102
- Dilich, Wilhelm, 192
- disease
use of as a weapon, 56
- ditches, 63
- Dobrynichi, Battle of (1605), 35–6
- Dögen, Matthias, 193
- domestic politics, 42, 79
- Dorgon, 50
- Downs, Battle of the (1639), 159
- drill, 3, 4, 5
- drill manuals, 189–90
- Dublin, 142, 143
- Duffy, Christopher, 199
- Dunbar, Battle of (1650), 77, 89
- Dunes, Battle of the (1658), 93
- Dunkirk, 93
- Dutch, 81
assault on Hispanic world, 153, 161
Brazilian operations, 162, 173
conflict with China, 114, 153
conflict with Portuguese, 158
in East Indies, 111, 122–3, 153–4, 163
independence from Spain (1648),
41, 172
invasion of England by William III or
Orange (1688), 41, 141, 160
naval capability/warfare, 153, 158, 166
reliance on local support in conflicts,
122–3
tactical innovations, 3
and Thirty Years' War, 61, 65, 67
war against English *see* Anglo-Dutch
Wars
war against France (1672–8), 95–102,
104, 161–2, 163

- Dutch East India Company, 158
 Dutch Revolt, 38, 39, 41, 42, 61, 69, 91,
 172, 177
 Dutch West Africa Company, 163
 Dutch West India Company, 121
 dynasticism, 60
 Dzhungars, 82, 109–10, 134–6
- East India Company, 29, 122
 East Indies (Indonesia), 122–3
 Dutch in, 111, 122–3, 153–4, 163
 Portuguese in, 122–3
 Eastern Europe, 5
 peace treaties (1660–7), 93
 sieges, 94
 and value of cavalry, 71–2
 Eastern Question, 109
 Edgehill, Battle of (1642), 74
 Edict of Nantes, Revocation of (1685),
 42, 142
 Egypt, 14, 19, 20, 109, 125, 132, 157
 Eldred, William, 66
 elephants
 use of by Mughals in war, 15, 16, 55
 élite consent, 104, 185–6
 Ellis, John, 11, 184
 England, 183–4
 Exclusion Crisis, 104
 and Franco-Spanish war, 93
 invasion of by William III of Orange
 (1688), 41, 141, 160
 invasions of by Scotland, 72, 74, 88
 naval power, 165
 and parliamentary government, 147
 shipbuilding industry, 167
 war with Spain (1585–1604), 38, 39
 wars with Dutch *see* Anglo-Dutch
 Wars
 English Civil Wars, 71, 78–9
 First (1642–6), 73–7, 88
 Second (1648–9), 88–90
English Pilot, The, 164
 environmental factors, 17, 18, 59
 equal-population cartograms, 47
 Errard, Jean, 193
 Eschinardi, Francesco, 66
 Estrées, Count of, 161–2
 Ethiopia/Ethiopians, 44, 179–80 *see also*
 Abyssinia
 Eugene of Savoy, 131
 Europe, 20–1, 87–94, 139–50
 and Africa, 115–22
 expansion of, 20–1
 fortifications in sixteenth century,
 21–2
 increase in domestic divisions
 within, 21
 limited extent of expansion and
 failures, 108–9
 naval capability, 20
 and North America, 112–14
 and Ottomans, 124–7
 political dimension and capability
 of, 122–3
see also individual countries
 European Scientific Revolution, 194
- Fabre, Jean, 193
 False Dmitrii (First), 35–6
 False Dmitrii (Second), 36, 37
 False Peter, 36
 Fan Chengmo, 82
 Fartuwa, Ibn, 45
 Fasiladas, 139
 Fazil Ahmed, 126
 Fazil Mustafa Köprülü, 130, 144
 Fehrbellin, Battle of (1675), 97
 Ferdinand of Bavaria, 186
 Ferdinand II, Emperor, 60, 61, 62, 63,
 64, 66, 69, 172
 Fernández de Córdoba, Don Gonzalo,
 60
 feudalism, 175
 Feudatories *see* Rebellion of the Three
 Feudatories
 firepower/firearms, 2, 77
 absence of in some countries, 24
 and Africans, 116, 119–20
 development in infantry, 3–4
 diffusion of, 179–80

- increase in importance of, 16–17
 use of in sixteenth century, 16–19
see also gunpowder weaponry
- Firrufino, Julio, 66
- First World War, 70, 71
- fitness for purpose, 3, 24, 25, 59
- flintlock muskets, 19, 138, 140, 192
- food supplies, strategic importance
 of, 167
- Fort Jesus (Mombasa), 117, 118
- Fort Zeelandia, siege of (1661–2), 81
- forts/fortifications, 24–5, 33–4, 98,
 107
 artillery fortresses, 81, 107
 built by Louis XIV, 102–3, 108
 Chinese, 19–20, 110
 European sixteenth-century, 21–2
 Maratha, 137
 publications and diagrams on, 66,
 98, 107, 191, 193
 and *trace italienne*, 21, 34, 107, 137, 187
 Vauban-style, 137
- France, 22, 26, 172
 deficiencies in war making, 103
 and Dutch War (1672–8), 95–102, 104,
 161–2, 163
 early wars of Louis XIV, 94–105
 fortifications and siegecraft under
 Louis XIV, 98–9, 102–3, 108
 and *Frondes* *see* *Frondes* rebellions
 logistical system, 102
 military dominance and prowess,
 102–3
 military reform under Louis XIV,
 102
 naval capability, 103, 165
 and Nine Years' War (1688–97), 104,
 130, 139, 141, 145–7, 162, 166
 offensive–defensive character to war
 making, 99
 Spanish Netherlands campaign,
 94–5, 99–100, 105
 support of James II in battle against
 William III of Orange, 142
 and Thirty Years' War, 62, 68
- use of 'small warfare' and blockades,
 99–100
 and War of the Spanish Succession
 (1701–14), 104
- Franco-Spanish war (1635–59), 70, 84,
 87–8, 92, 93, 197
- Frederick William I, Great Elector of
 Brandenburg-Prussia, 73, 97, 101
- Freitag, Adam, 65
- French Revolution, 75
- Frondes* rebellions (1648–52), 51, 71, 72,
 73, 84, 87–8, 91, 92, 183, 186
- Frontinus, 189
- funding, for warfare, 22
- Furttenbach, Joseph, 191, 193
- Gadadhar Singh, King of Ahom, 137
- Gage, Sir Henry, 78
- Galdan Boshughtu, Taishi, 134, 135
- Galileo, 191
- galleons, 157
- galleys, 157
- Gedda, Peter, 164–5
- Geng Jingzhong, 52, 82
- Genoa, 156, 186
- Germany
 and Nine Years' War, 145
 and Peace of Westphalia, 69–70
 and Thirty Years' War, 67
- ghulams*, 45, 46, 182
- Gibbon, Edward, 2
- Ginkel, Godard van Reede de, 144
- Giray, Murat, 132
- Glete, Jan, 168
- gloire*, 25, 40, 92, 101, 171
- Goa, 115, 123
- Godunov, Boris, 35, 36
- Golconda, 57, 58, 86, 106, 115, 136, 163
- Golitsyn, Prince Vasilii, 149
- Gratiani, Caspar, 61
- Great Northern War (1700–21), 139,
 148–9, 150
- gunpowder weaponry, 4, 12–13, 23
 capability advantage in sixteenth
 century, 16

- gunpowder weaponry – *continued*
 disadvantages, 18
 genesis and development, 12–13
 influence of environment, 17
 spread of, 17
 use of by Mughals, 15, 16
 use of by Ottomans, 13
- Gustavus Adolphus, 3, 4, 59, 62–4, 67,
 77, 144, 178
- Guttenberg, Johannes, 190
- Győr, 33, 128
- Habsburgs, 1–2, 15, 26, 45, 90, 126,
 127–8 *see also* Austrians
- Hague, The, 9
- Hale, Thomas, 167
- hand-to-hand weapons, 141
- Hawai'i/Hawai'ians, 23–4
- headhunting, 24
- Henry IV, King of France, 34, 35, 39
- Herat, 30, 45
- Hexham, Henry
The Principles of the Art of Militarie, 4
- Hideyoshi, Toyotomi, 31, 32, 33
- Holk, Heinrich, 177
- Holland, 95, 96 *see also* Dutch; United
 Provinces
- Holloway, William, 196
- Holy Alliance, 131–2
- Holy League, 129
- Hong Chengchou, 52
- honour, 10, 76
- Hormuz, 46, 115, 123
- horse archers *see* archers, mounted
- horsemanship, military, 54
- horses, 15, 17, 23, 32, 55, 68, 86, 135
- Hugo, Hermannus, 4, 65, 78
- Hungary, 33–4, 125
 conquest of by Austrians against
 Ottomans, 128–31
- Iasi, Battle of (1620), 61
- Ibrahim Qutab (Sultan of Golconda), 17
- Ibrahim, Sultan, 125, 126, 157
- Ieyasu, Tokugawa, 32–3, 105, 154
- Imbangala, 117
- Incas, 20
- India, 29, 78
 environmental constraints in
 southern, 17
 Mughal *see* Mughals/Mughal India
- Indian Ocean, 20, 117, 118, 155, 157
- Indonesia, 122–3
- infantry manuals, 193
- information
 and the military, 189–94
- Innocent XI, Pope, 145
- international politics, 79
- Ireland, 141–2
 Cromwell's campaign against, 88–9
 William III's conquest of (1690–2),
 142–5, 173
- Ireton, Henry, 89
- Iroquois, 171
- Iskandar Muda, Sultan, 59, 152
- Islamic naval powers, 155–8
- Itakhuli, Battle of (1682), 137
- Italy, 3, 12
 and fortifications, 21
 Spanish attempt to dominate, 92–3
- Ivan IV (Ivan the Terrible), 15
- Iyasu I, King, 139
- Iziuma Line, 94
- Jacobi, Johann, 4
- Jacobites, 141
- Jahan, Shah, 57, 82
- Jai Singh I, 85
- James I, King of England, 61
- James II, King of England, 141, 142–3,
 146, 147
- janissaries, 14, 15, 22, 64, 124, 175–6, 182–3
- Jankov, Battle of (1645), 66
- Japan, 3, 30–1, 105, 109, 153, 198
 attempt to conquer Taiwan (1616), 154
 invasion of China (1931–45), 32
 invasions of China/Korea by
 Hideyoshi (1592/97), 31–2, 48

- war with Russia (1677–81), 127
 withdrawal from long-distance
 maritime activity, 154
 Jats, 138
 Java, 123, 152, 163
 javelin-men, 119
 John of Austria, Archduke, 93
 Jurchens, 48

 al-Kahhar, Sultan, 158
 Kaifeng, 51
 Kalenderoghlu Mehmed, 37–8
 Kalmyks, 150
 Kandahar, 46, 57, 84
 Kandy, kingdom of, 123, 124, 163
 Kangxi emperor, 41, 82, 135, 136–7, 138,
 180, 185, 187
 Kanissa fortress, 33
 Kara Mustafa, Grand Vizier, 127, 128
 Karlowitz, Treaty of (1699), 131
 Karnal, 57, 106, 110
 Kazaks, 16, 30
 Keelung, 81, 161
 Kemeny, Janos, 126
 Kerala, 59
 Khajwa, Battle of (1659), 83
 Kiev, 94
 Killiecrankie, Battle of (1689), 141
 Kirkuk, 62
 Klushino, Battle of (1610), 71, 177
 Kochersberg, Battle of (1677), 97
 Kongo, kingdom of, 116–17
 Korea
 conquering of by Manchu (1636–7),
 49, 153
 Japanese invasion (1952/57), 31–2, 48
 Korean War, 31
 Koryaks, 111
 Kuyuju Murad, Grand Vizier, 38, 51

 La Rochelle, 22, 170, 186
 Lahori, Abdul Hamid, 58
 Lala Mehmed Pasha, 125
 Land Pattern Musket, 140

 lapalapa, 24
 Le Brun, Charles
 The Resurrection of Christ, 101
 Le Tellier, Louvois, 102
 Le Tellier, Michel, 102
 ‘leather guns’, 78
 Leopold I, 94, 96, 127–8, 131, 145, 147
 Les Baux-de-Provence, 170
 Leslie, David, 89
 Li Zicheng, 36, 50–1, 52
 Liaoyang, 49, 50
 Liège, 186
 Limbourg, siege of (1676), 98
 Limerick, 143, 144
 line-ahead tactics, 8, 160, 198
 Lipsius, Justus, 101, 189
 literacy, 193
 Lodis, 16
 logistics, 67–8, 86, 89, 99, 102, 196–7
 London, 73, 74
 Loper, Christian, 10
 Lorge, Peter, 9
 Lorini, Buonaiuto, 66
 Louis XIII, King of France, 46
 Louis XIV, King of France 9, 42, 73, 85,
 93, 106, 108, 137, 138, 145–6, 165
 celebration of triumphs of, 101
 early wars of, 94–105
 and Nine Years’ War, 145, 146–7
 Louisiana, 113
 Lovell, Archibald, 103
 Lützen, Battle of (1632), 63–4, 67, 144
 Luxembourg, 147
 siege of (1684), 106
 Luxembourg, Duke of, 148

 Maastricht (Netherlands), 11, 98, 102,
 184
 Madagascar, 139, 167
 Malacca, 123, 152
 Mali, 29
 Malik Ambar of Ahmadnagar, 63, 68
 Malta, 156
 Mamluk empire, 14, 19

- Manchu, 16, 92
 and cavalry, 196
 conquest of Ming China, 32, 41, 47,
 48–53, 54–5, 80–1, 84, 153
 naval operations, 155
 resistance to conquest in south, 80–1
- Manesson-Mallet, Allain, 193
- Manila
 rebellion against Spanish rule by
 Chinese (1603), 114–15
- Månsson, Johan, 164
- al Mansur, Sultan Mawláy Ahmad, 28
- manuals, 193
- Maori, 23–4
- maps, 164–5, 173
- Marathas, 18, 57, 84, 85, 136–7, 185
- Mariana Islands, 154
- maritime capability *see* naval capability/
 warfare
- Marlborough, Duke of, 26, 141, 143
- Marolois, Samuel, 191
- Marston Moor, Battle of (1644), 74–5, 77
- mathematics/mathematicians, 191
- Maurice of Nassau, Count, 3, 4, 100
- Mawlay Isma'íl, Sultan, 182
- Max Emmanuel, Elector, 145–6
- Maximilian of Bavaria, Duke, 60
- Mazarin, Cardinal, 92–3, 94
- Mbumbi, Battle of (1622), 116–17
- Mehmed III, 34, 37
- Mehmed IV, 127, 129
- Mehmed Köprülü, 126
- Melder, Gerard, 193
- Melzo, Lodovico, 54
- Mercator, 190
- mercenaries, 4, 59, 174–5, 176–8, 180, 185
 'changing of sides', 177
 reasons for recruiting, 177–8, 179
- Meredith, Roger, 184
- Merian, Mattháus, 126
- Merina, kingdom of, 139
- Messina (Sicily)
 rising in (1674), 159–60
- Mexico, 154
- Meynier, Honorat de, 22
- Mező-Keréztés, Battle of (1596), 34, 37
- Michael of Wallachia, Prince, 34, 124
- Mieth, Michael, 22
- Mikhail Romanov, Tsar, 37
- military environments
 variety of in sixteenth century, 22–5
- military-industrial complexes, 166
- Military Revolution, 1–9, 28, 171, 188, 199
 and Thirty Years' War, 64–71
- militias, 178, 185
- Ming China *see* China
- Modena, 93
- Moldavia 34, 61, 124, 130
- Mombasa, 19, 117, 118
- Monck, George, 183, 194
- Mongolia, 134
- Mongols, 12, 15, 16
 invasion of China, 20, 52, 53
 and Manchu, 49
- Mont Cassel, Battle of (1677), 99
- Montauban, 170
- Montecuccoli, Raimondo, 96, 97, 126,
 140
- Montpellier, Peace of, 68
- Moore, Jonas, 98
- morale, attempts to maintain military,
 175–6
- Moretti, Tomaso, 98
- Moriscos, 42
- Morocco/Moroccans, 9, 28–9, 121–2
- Mountain-Sea Pass, Battle of the (1644),
 51–2
- Mozambique, 115, 118
- Mughals/Mughal India, 15–16, 17, 18,
 55–9, 82–6, 110, 136–8
 ability to adapt to variety of
 environments, 96
 Ahom challenge to, 55–6
 Aurangzeb's campaigns and
 overextension of, 85, 92, 136, 138
 challenge from the Marathas, 18, 57,
 84, 85–6, 136–7, 185
 collapse of, 86

- competition with Safavids over
 Kandahar, 57, 84
 conflict with Uzbeks in Afghanistan,
 56–7
 dynastic conflict, 82–4
 expansion and successes, 57–8
 limitations and weaknesses in
 warfare, 84, 136–7
 logistical problems, 67–8
 naval capability/warfare, 152
 opponents of, 197
 revolts against, 84–5, 137–8
 siege artillery and siegecraft, 58, 84, 137
 weaponry, 138
 Muley-Ismael, Sultan, 121
 Murad IV, Sultan, 25, 61–2, 64
 Muscat, 117, 152, 155
 musketeers, 3, 4, 139, 140
 muskets, 2, 15, 30
 English Land Pattern, 140
 flintlock, 19, 138, 192
 matchlock, 17
 replacement of matchlock with
 flintlock, 120, 140
 Mustafa, Sultan, 25, 61
 Mustafa II, Sultan, 131
 Mut, Vincente, 66
 Mutapa (Zimbabwe), 115–16
 mutinies, 22, 176, 177–8

 Nadir Shah, 57, 110
 Nanjing, siege of (1659), 80–1
 Nanjing, Treaty of (1842), 81
 Narva, Battle of (1700), 148–9, 150
 Naseby, Battle of (1645), 53, 76–7, 139
 Native Americans, 23, 112, 113
 naval capability/warfare, 6–7, 24,
 151–69, 196, 198
 and amphibious operations, 159–60
 and Asia, 151–5
 attacks on colonial bases of other
 powers, 161–2
 charts and maps, 164–5
 choke points, 152
 development of warships and
 enhancement of firepower, 160–1
 goal-based approach, 168–9
 importance of against ‘land
 islands’, 162
 Islamic, 155–8
 knowledge and Western naval
 power, 163–4
 line-ahead tactics and focus on ships
 of the line, 8, 24, 160, 198
 and Ottomans, 156–8
 and professionalism, 198
 range of naval activities, 159
 requirements for victory at sea, 161
 Western navies and state power, 165–8
 writings on naval activity, 164
 Nazar Muhammad Khan, 56
 Ndongo, kingdom of, 116, 117
 Nepal, 59
 Nepalese Gurkhas, 141
 Nerchinsk, Treaty of (1689), 134
 New Mexico, 41
 New Model Army, 75–6, 88, 183–4
 New Zealand
 pā settlements, 23
 Newbury, First Battle of (1643), 74
 Nieuwpoort, Battle of (1600), 39
 Niger region, 28–9
 Nijmegen, Treaty of (1678), 102
 Nine Years’ War (1688–97), 26, 104, 130,
 139, 141, 145–7, 162, 166
 Nizam Shahis, 57
 Njinga, Queen, 116, 117
 nomadic societies, 3, 23
 Nördlingen, Battle of (1634), 64, 67
 North Africa, 121–2
 North America, 112–14
 Norton, Robert, 66
 Norwood, Richard
 Fortification, 78
 Noryang Straits, Battle of the (1598), 32
 Nottnagel, Christopher, 191
 Novgorod, 36, 37
 Nurhaci, 48, 49, 50

- Nye, Nathaniel
The Art of Gunnery, 78
- Oirats, 134, 150
- Omani Arabs, 56, 117–18, 155, 158
- Orientalism, 41
- Oromo, 44, 139
- Ortelius, 190
- Osman, Shah, 176
- Osman, Sultan, 25, 61, 64
- Otter, Christian, 65
- Ottomans/Ottoman Empire, 5, 13–15,
 16–17, 25, 41–2, 58–9, 61
 attempt to overrun Ethiopia, 44
 campaign against Crete (1645–69),
 125–6, 156, 157
 campaigns against Europe, 124–7
 and cannon, 34
 conflict with Persia, 45–6, 61, 62, 110,
 125, 196
 conflict with Venetians, 125–6, 130, 156–7
 conquest of Constantinople (1453), 12
 conquest of Mamluk Egypt, 19
 defeat at Vienna siege (1683), 105, 106,
 108, 111, 124, 128, 132
 defeat of Peter the Great at River
 Pruth (1711), 108–9
 dynastic division, 61
 and *janissaries*, 14, 15, 22, 64, 124,
 175–6, 182–3
 logistical strengths, 124–5, 132
 and naval capability/warfare, 156–8
 peace with Austrians (1699), 131
 rebellions against, 37–8, 51
 rise of, 13
 and Saudi Arabia, 118
 strength and diversity of military
 system, 14–15
 struggle with Poles and Russians over
 dominance of Ukraine, 126–7, 130
 style of war making, 124
 support of Hungarian rebels under
 Thököly, 127
 Thirteen Years' War against
 Austrians, 33–4, 45, 51, 124, 176
 transition to a mixed force, 14
 war against Austrians (1683–99),
 128–33
 war with Poland (1620–1), 61, 125, 130
 war with Russia (1677–81), 127
- overreach, 39–42
- Oyo, 120
- Ozanman, Jacques, 4
- paiks*, 18
- Paitan River, Battle of (1616), 63
- Palakka, Arung, 123
- Palatinate, 60, 145
- Panipat, First Battle of (1526), 16
- paradigm-diffusion model, 195
- Parker, Geoffrey
The Military Revolution, 1–2
- Parliamentarians, 73, 74–5, 76–7, 90
- Parma, Duke of, 100
- patronage, 70, 71, 172
- Pavia, 92
- peace negotiations, 146
- Penghu Islands, 114
- Persia, 13, 16, 45–6, 158
 conflict with Ottomans, 45–6, 61, 62,
 110, 125, 196
 conflict with Uzbeks, 45
see also Safavids
- Pest, 33, 125
- Peter the Great, 108, 131, 149–50, 165
- Philip II, King of Spain, 38–9, 40, 41, 42, 91
- Philip III, King of Spain, 39, 40, 41, 42, 121
- Philip IV, King of Spain, 40, 41, 60, 92,
 94, 153, 171
- Philippines, 38, 154
- pike/pikemen, 3, 17–18, 139, 140
- Plassey, Battle of (1757), 29
- Podolia (Ukraine), 126, 130, 131
- Poland, 9, 34–7, 71, 90
 civil war (1665–6), 94
 conflict with Russia, 35–7, 93, 94
 Cossack rebellion (1648), 90
 musketeer force, 15
 truce with Russia (1618), 37
 truce with Russia (1667), 94, 95

- war with the Ottomans (1620–1), 61,
 125, 130
 war with Sweden, 62, 91
 politics, 43–4
 Polynesia, 23
 Portuguese/Portugal, 19, 20, 115
 and Africa, 115–18
 attacking of bases by Omani Arabs, 155
 conflict with Dutch, 158
 in East Indies (Indonesia), 122–3
 positions lost to Asian attack, 115
 war with Spain (1640–68), 70, 72,
 94, 143
 Prague, Peace of (1635), 64, 69
 printing, 193
 Protestant Reformation, 21, 60, 172
 Protestantism
 divide between Catholicism and, 172–3
Proviandhausen, 132
 Prussia, 97, 165 *see also* Brandenburg-
 Prussia
 publications, war, 189–94
 Pueblo Rebellion, 113
 push theory of warfare, 6
 Pyrenees, Peace of the (1659), 88, 93, 95

 Qishm, 158
 Québec, 161

 Rabát-i Pariyán, Battle of (1598), 45
 Rajasimha II of Kandy, 123
 Rama Raja, 17
 Razin, Stenka, 94, 181, 184
 Rebellion of the Three Feudatories, 55,
 81–2, 84, 92, 110, 134, 181, 185
 Recife (Brazil), 162, 173
 recruitment, 174–80
 and conscription, 174, 178, 179, 182
 of deserters, 178
 of disbanded men, 178
 of mercenaries, 174–5, 176–8
 Reformation *see* Protestant
 Reformation
 religious division
 and conflict, 172–3

 resources issues, 92
 Revolution in Military Affairs (RMA),
 5–6
 Rheinfelden, Battle of
 (1638), 65
 (1678), 97
 Rheinfelden, siege of (1676), 99
 Richelieu, Cardinal, 26, 62, 69, 103, 170
 Rijswick, Treaty of, 146–7
 river gunboats, 24
 Roberts, Michael, 2, 3, 28, 64, 108
 Rocroi, Battle of (1643), 53, 67, 70, 71, 91, 92
 Rome, decline and fall of, 54
 Rotterdam, 123
 Rowlands, Guy, 166
 Royalists, 73, 74, 75, 76–7, 88, 89, 183
 Ruggiero, Pietro, 66
 Rupert, Prince, 75, 76, 77
 Russia, 20, 30, 35–6, 90
 Civil War, 75
 competing Polish and Swedish
 intervention in from 1609, 35–7
 conflict with China, 134
 conflict with Poland, 35–7, 93, 94
 conquest of Siberia, 47, 111–12
 construction of defensive lines, 90,
 94, 107
 difficulties of steppe conflict, 127
 and Great Northern War, 139, 148–9,
 150
 invasion of by False Dmitrii (1604),
 35–6
 invasions by Crimean Tatars, 90
 military development and borrowing
 of European methods, 149
 military reform under Peter the
 Great, 149–50
 ‘Time of Troubles’, 5, 181
 truce with Poland (1618), 37
 truce with Poland (1667), 94, 95
 voevoda system of local government,
 118–19
 Russo-Japanese War (1904–5), 32
 Russo-Ottoman War (1677–81), 127
 Ryukyu Islands, 154

- Safavids, 13–14, 19, 25, 58–9, 115, 172
 competition with Mughals over
 Kandahar, 57
- St Denis, Battle of (1678), 99, 102
- St Helena, 151
- Samoans, 23, 24
- Samuagarh, Battle of (1658), 78, 83
- Sandwip Island, 85, 115
- Santa Fé, 113–14
- São Tomé, 161, 163
- Sardi, Pietro, 192
- Saudi Arabia, 118
- Scheither, Johann, 126
- Schlüter, Andreas, 101
- Schmalkaldic War (1540s), 172
- Schomberg, Duke of, 142
- scorched-earth tactics, 72
- Scotland, 141
 invasion of by Cromwell (1650),
 89–90
 invasions of England, 72, 74, 88
 rising (1683), 72
- Second World War, 68
- Sekigahara, Battle of (1600), 33
- Self-Denying Ordinance (1644), 75
- Selim I 'the Grim', 13, 19
- Selim Shah of Arakan, 115
- Serse-Dingil, King of Abyssinia, 44
- Shambhaji, 136
- Shang Kexi, 82
- Shaybani Khan, 30
- shaykas*, 156
- Shenyang, 49, 50
- Shimábava Rebellion (1638), 50
- Shimazu, 154
- ships of the line, 24, 160
- ships/shipbuilding, 157, 167, 192 *see also*
 naval capability/warfare; warships
- Shivaji Bhonsla, 85–6
- Shivaji II, 136
- Shuiskii, Prince Vasili, 36
- Shuja, Muhammad, 83
- Siberia, 47, 111–12
- Sicily, 34, 87, 104, 157, 159–60
- siege artillery, 21, 89
 and Mughals, 58, 84, 137
- sieges/siegecraft, 19, 21, 47, 98–9, 106–8
 1680s, 106–7
 cannon used in, 77, 78
 Eastern Europe, 94
 and French, 98, 99
 in Low Countries during Thirty
 Years' War, 65
 Mughal India, 137
 problems encountered, 98–9
- Siemienowicz, Kasimierz, 192
- Sigismund III of Poland, 34–5, 44
- Simbirsk, 90
- Siraj-ud-daula, 29
- sixteenth century, 12–27
- Skelton, William, 97
- Skopin-Shuiskii, Mikhail, 36
- slave soldiers, 117, 176, 182
- slavery/slave trade, 118, 121, 162, 165
 'small warfare'
 use of by French, 99–100
- Smith, Adam, 2
- Smith, John, 164
- Smolensk (Russia), 21, 37, 94
 siege of (1654), 94, 171
- Sobieski, John, 77, 126, 128, 129, 148
- social Darwinism, 170
- social politics and military, 180–3
- social stability and military, 183–6
- society impact of on military capability
 and conflict, 173–4
- Solbovo, Treaty of (1617), 37
- Songhay, 16, 28–9
- Sophia, Regent, 149
- South Asia, 15–17, 47
- Spain, 15, 34, 35, 38–9, 70–1, 147, 153
 attempt to dominate Italy, 92–3
 and Catalan war of independence,
 70, 87, 171, 181
 crisis of, 38–9
 and Dutch Revolt, 38, 39, 41, 42, 69,
 91, 172, 177
 monarchy, 147

- and Nine Years' War, 145
- and North Africa, 121–2
- and North America, 113–14
- and overreach, 40–2
- and Peace of Westphalia, 69
- in Philippines, 154
- rebellions in, 87
- and Thirty Years' War, 61
- war with England (1585–1604), 38, 39
- war with France (1635–59), 70, 84, 87–8, 92, 93, 197
- war with Portugal (1640–68), 70, 72, 94, 143
- Spanish Netherlands, 98, 145
 - French campaign, 94–5, 99–100, 105
 - and Nine Years' War, 146
- spear, 18, 30, 32, 182
- Spinola, Ambrogio, 60, 65, 100
- Sprigge, Joshua, 194
- Sri Lanka, 115, 123, 161, 163
- standing armies, 92, 179
- state development and war, 170–4, 180–1
- Stevin, Simon, 65, 191
- strategic cultures, 25–7
- strategic overreach, 39–42
- streltsy*, 127, 150
- Suleiman II, 130
- Suleiman the Magnificent, 33, 128–9
- Sumatra, 59
- Susenyos, 44
- Sweden, 3, 35, 62, 97
 - civil war (1597–8), 35
 - conflict with Russia from 1609, 35, 36–7
 - and Great Northern War (1700–21), 139, 148, 150
 - reliance on militia, 178
 - and Thirty Years' War, 62–4, 66, 67, 68
 - war with Poland, 62, 91
- Swedish African Company, 120–1
- Syria, 14
 - rebellion against Ottomans, 38, 51
- Syriam, 180
- Székesfehérvár, 33
- Tabriz, 45
- tábúr cengi*, 16
- Tahiti, 23
- Tahmasp I of Persia, 16
- Tai ping Revolution, 53
- Taiwan, 81, 82, 105, 153, 154
- Tall Halil, 37
- Tangier, 121
- Tanjore, 137
- Tatar Golden Horde, 111
- Temesvár, 131
- temperature, change in global, 8–9
- Tensini, Francesco, *La Fortificatone*, 107
- Teyler, Johonnes, 193
- Thirteen Years' War (1593–1606), 33–4, 45, 124, 176
- Thirty Years' War (1618–48), 22, 26, 47, 52, 59–71, 78–9, 175, 181
 - Battle of Lützen (1632), 63–4, 67, 144
 - beginning of, 60
 - conflicts involved in, 60
 - contribution to population crisis, 67
 - ending of and Peace of Westphalia, 69–70
 - Gustavus Adolphus's campaign, 62–4
 - importance of cavalry, 54–5, 68
 - and mercenaries, 176
 - and Military Revolution, 64–71
 - numbers of troops issue and recruitment problems, 67
 - shift to smaller forces, 67, 68
 - sieges in Low Countries, 65
 - tactical formations, 66
 - usefulness of experienced armies, 64–5, 66–7
- Thököly, Imre, 127
- Tilly, Count, of 60, 61, 62, 63, 67
- Timbuktu, Pasha of, 28
- Tobago, 161–2
- Tokugawa shōgunate, 33, 154
- Tondibi, battle of (1591), 16, 28, 29

- top-down command structures, 182
 Torstensson, Lennart, 66, 68
trace italienne, 21, 34, 107, 137, 187
 Transoxiana, 30
 Transylvania, 34, 71, 126, 129
 Triple Alliance, 95
 Tripoli, 45, 121, 122, 155
 Tunis, 121, 122, 123, 183
 Turckheim, Battle of (1675), 97
 Turenne, 68, 77, 92, 93, 94, 96–7, 102
 Turin, Battle of (1706), 147
 ‘turtle ships’ (Korean), 31
 two-deckers, 160
- Ufano, Diego, 65–6
 Ukraine, 71, 90, 94, 108, 126
 United East India Company, 114
 United Provinces (Dutch Republic),
 91, 104, 114, 145 *see also* Dutch;
 Holland
 Utrecht, Union of, 91
 Uzbeks, 16, 17, 29–30, 45, 56
- Valenciennes, 92, 93
 variety, centrality of, 195–8
 Vasa dynasty, 35, 60
 Vasvar, Peace of (1664), 126
 Vauban, Sébastien Le Prestre de, 98, 103
 Veloso, Diego, 180
 Venetians, 14, 20, 108
 conflict with Ottomans, 125–6, 130,
 156–7
 Vera, Melchor de, 154
 Verbiest, Ferdinand, 195
 Vervins, Treaty of (1598), 39
 Victor Amadeus II, 146
 Vienna, siege of (1683), 53, 105, 106, 108,
 111, 124, 128, 132, 149
 Vigevano, Peace of (1696), 146
 Vitoria, Francisco de, 101
 volley fire tactics, 2, 3, 15, 93, 100, 112, 124
- Wallachia, 34
 Wallenstein, Albrecht von, 61, 63, 64, 177
- war
 cost of, 10–11
 and state development, 170–4, 180–1
 War of the Mantuan Succession
 (1628–31), 67
 War of the Spanish Succession (1701–14),
 104, 122, 133, 139, 147, 148
 Wars of Religion, 22, 38, 42, 172
 warships, 8, 24, 31, 58, 155, 160–1
 weaponry, 54
 changes in Japanese, 30
 development and changes in, 118,
 139–40
 gunpowder *see* gunpowder
 weaponry
 Mughal India, 138
 see also firepower/firearms
 Westphalia, Peace of (1648), 69–70, 172
 Wheatcroft, Andrew
 The Enemy at the Gate, 124
 White Lotus uprising (1625), 50
 White Mountain, Battle of the (1620),
 60, 61, 66–7
 Wilhelm, Ludwig, 130
 William III of Orange, 41, 96, 99, 102,
 141–5, 147, 173, 184
 Wladyslaw, 35, 37
 Wrangel, Karl Gustav von, 68
 Wu Sangui, 51, 52, 81–2
- Yellow Sea, Battle of the, 31
 Yi Sun-Shin, 31, 32
 York, 74, 75
 Yunnanfu, siege of (1681), 82
 Yusuf, Sultan Muhammad, 117
 Yusufzai, 85
- Zálankermén, Battle of (1691), 130, 144
 Zepeda y Adradas, Alonzo, 66
 Zhang Xianzhong, 50
 Zhang Yong, 82
 Zheng Chenggong (Coxinga), 80, 81, 92
 Zheng Jing, 81
 Zsitvatorok, Peace of (1606), 62