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a cura di
VIRGILIO ILARI



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Testiera (Shaffron) per cavallo, Brescia (?) 1560-70
Metropolitan Museum of Arts, New York. Public Domain

*Albuquerque at Malacca, 1511;
Yermak in Siberia, 1582.
The amphibious charge to global empires.*

by VLADIMIR SHIROGOROV

ABSTRACT. The transformation of warfare in the Early Modern period, embodied in the concept of the military revolution, not only changed the face of combat and societies of belligerent nations, but the global military balance as well. It gave birth to Europe's overseas and transcontinental empires among which the Portuguese conquests in South Asia and Muscovite (Russian) expansion in Siberia are the most important examples. Both of them were made possible by the gunpowder revolution in amphibious warfare that tremendously increased the effectiveness of water-based assault. The current essay researches similarities and differences between the Portuguese and Muscovite amphibious warfighting characteristic of the epoch by comparing the key operations of their expansion, the Portuguese conquest of Malacca in 1511 and the Muscovite conquest of Isker, the capital of the Siberian Khanate, in 1582. The main properties of the Portuguese and Muscovite amphibious forces are compared, including their organization, weaponry and tactics, as well as the strategy and ideology behind Portuguese and Muscovite expansion. Specific attention is given to the rulers, entrepreneurs and the military commanders responsible for their respective empire building.

KEYWORDS: MILITARY REVOLUTION, GUNPOWDER REVOLUTION, GLOBAL EMPIRES, EUROPEAN EXPANSION, AMPHIBIOUS WARFARE, FIREARMS, SIBERIA, SOUTH ASIA.

The sixteenth century was an age of empires, of large polities characterized by a distinctive centre-periphery structure.¹ Empires emerged, expanded and competed in different regions of the globe, but it was Asia that became their prime whirlpool. From four to six grand territorial empires emerged there almost simultaneously: the Ottoman empire in Asia Minor, the Near East and the Balkans; the Safavid empire in Iran, Iraq and Transcaucasia; the Mughal empire in India and Central Asia;² the Manchu empire in China

1 See as an introduction to these topics:

NEXON, *The Struggle for Power in Early Modern Europe*; SUBRAHMANYAM, *Empires Between Islam and Christianity, 1500–1800*.

2 BARKEY, *Empire of Difference. The Ottomans in Comparative Perspective*; NEWMAN, *Safa-*

and Central Eurasia;³and, in addition, the Uzbek empire in Central Asia and the Zunghar empire in Central Eurasia.⁴ At the same time, new imperial polities such as the Portuguese maritime empire in South Asia⁵ and the Muscovite riverine empire in Northern Eurasia,⁶ penetrated Asia from the outside: pursuing the control of communication lines and *entrepots*, rather than territorial domination. They were empires of conquest brought into existence thanks to the superior military power of their builders. However, the military power of both territorial empires and empires of communication lines was established based on different fighting techniques and strategical models. With the partial exception of the Ottomans,⁷ the warfare in the Asian territorial empires, although adopting the fashion of the epoch--firearms, still maintained the traditional Mongolian-Turkic nomadic pattern of the bow-shooting and shock cavalry.⁸ Empires of communication lines resorted to amphibious warfare, a new stunning phenomenon⁹ undergoing transformation due to the enhancement of gunpowder and firearms and the subsequent introduction of organizational changes in the European armies and navies of the Early Modern period.¹⁰ The current essay is a case study comparison of two key amphibious operations at the emergence of the Portuguese maritime and Muscovite riverine empires.

vid Iran: Rebirth of a Persian Empire; GOMMANS, *Mughal Warfare: Indian Frontiers and Highroads to Empire 1500–1700*.

- 3 WAKEMAN, *The Great Enterprise. The Manchu Reconstruction of Imperial Order in Seventeenth-century China*.
- 4 PERDUE, *China Marches West. The Qing Conquest of Central Eurasia*.
- 5 DIFFIE AND WINIUS, *Foundations of the Portuguese Empire, 1415–1580*; SUBRAHMANYAM, “Written on Water: Designs and Dynamics in the Portuguese Estado da Índia.”
- 6 KERNER, *The Urge to the Sea. The Course of Russian History*, - is still the best on the concept.
- 7 ÁGOSTON, *The Last Muslim Conquest. The Ottoman Empire and Its Wars in Europe*.
- 8 ÁGOSTON, “War-Winning Weapons? On the Decisiveness of Ottoman Firearms;” de la Garza, “Mughals at War: Babur, Akbar and the Indian Military Revolution, 1500 – 1605;” Lorge, “War and warfare in China 1450–1815;” Matthee, “Unwalled cities and restless nomads: firearms and artillery in Safavid Iran.”
- 9 TRIM and FISSEL (eds.), *Amphibious Warfare 1000–1700. Commerce, State Formation and European Expansion*.
- 10 GLETE, *War and the State in Early Modern Europe*; PARKER, *The Military Revolution. Military Innovation and the Rise of the West 1500–1800*, - are the reliable representation of the discourse.

Honourable Maxim.

Maxim Stroganov, as he is known from the Siberian Chronicles,¹¹ matched his actions with his dictatorial Roman name. At the close of 1577, just a few months before he turned 21 years old, Maxim inherited a third of his father Jacob's wealth and became extremely rich.¹² The Stroganov clan, of North-Russian peasant origin, was prosperous. The proverbially despotic Moscow tsar Ivan IV the Terrible relied on the clan's wealth and management in a variety of fields, including the supply of firearms and credit, fur and grain.¹³ One of Ivan IV's successors, Tsar Vasily Shuysky, in 1610 instituted for the clan the exclusive title of "Honorable men".¹⁴ The clan, which started its enterprise in the Russian North's salt production and expanded it in the Ural North-Eastern frontier region, in the second third of the XVI century became recognized as the elite true salt in what was called Muscovy in Western Europe.

However, the stunning well-being of Maxim was at risk. It was not because there were any family quarrels over the legacy of his father. It was rather due to its unanimous acceptance. In December 1577, Maxim and the other beneficiaries, his uncle Simon and his cousin Nikita peacefully divided the heritage between themselves including the salt boilers in the Ustyug and Perm regions, grain depots, iron and copper facilities, armament shops and powder mills, a fleet of riverine ships, farms and cattle, vast real estate in Moscow, the fur business, serfs and prisoners of war, stocks of goods, gold, silver and gems, cash and debtors' obligations.¹⁵ They also split the vast lands along the rivers Kama and Chusovaya in Western Ural. It was the geography of the split that jeopardized Maxim. The town of Orël, their well-established first possession on the Kama, the center of the tsar's territorial grant of 1558,¹⁶ was allotted to Nikita; the freshly colonized lands

11 *The Pogodin Chronicle; The Stroganov Chronicle; The Yesipov Chronicle*; see their description in detail in Russian: SHASHKOV, "The Pogodin's Chronicle and Inception of the Siberian Annals;" SOLODKIN, "Talking to Your Love..."; in Italian: NAPOLI, *A Caduta del Khanato Siberiano nella Cronachistica Russa della Prima Metà del XVII Secolo*, Cap.5

12 KUPTSOV, *The Clan of Stroganov*, 25

13 VVEDENSKY, *The House of Stroganov in 16th–17th Centuries*, Ch.1

14 VVEDENSKY, *The House of Stroganov in 16th–17th Centuries*, 133–34

15 VVEDENSKY, *The House of Stroganov in 16th–17th Centuries*, 37–41; 46–48

16 VVEDENSKY, *The House of Stroganov in 16th–17th Centuries*, 76

along the Chusovaya, the tsar's grant of 1568,¹⁷ were split between Simon, on the left bank, and Maxim, on the right.¹⁸ The right bank of the Chusovaya, whereto the mountain passes descend from the *Kamen*, a rocky Stone Ridge of the Urals, was an open frontier. The passes stretched over a thousand kilometers through the no-man-highlands from the Siberian Khanate, one of the successor states of the Golden Horde, the Medieval Eurasian Mongol super-empire. Maxim's patrimony was exposed to its aggressive state-building and the holy-war rush.

This Siberian rush consisted in the combining of Turkic and Muslim legacies, strengthening them in the same way as it was done in Ottoman Turkey, Safavid Iran and Mughal India. The Eurasian steppe's supreme fighting capability and its power to conquer was combined with Islamic religious devotion and Persian administrative tradition to form a powerful and dynamic symbiosis.¹⁹ It was the path on which the successor states of the Golden Horde stepped out as well, including the Khanates of the Crimea and Kazan.²⁰ Khan Kuchum ascended the throne in 1563, when his father, nomadic Khan Murtoza, together with his ally, the Uzbek khan of Bukhara Abdullah II, both descendants of Genghis Khan's grandson Shiban, launched the invasion of Siberia. They deposed and killed its lord, Beg Yediger. After a few years Murtoza passed away and Kuchum became independent.²¹ He soon recognized that the main impending danger to his realm came from the Western Ural where Moscow's eastward expansion was unfolding after the conquest of the Kazan Khanate by Tsar Ivan IV in 1552. The conquest was described in the Moscow chronicles and other literary works as a cosmic struggle of Good and Light against Evil and Darkness, that had been forecast in the Bible's prophecies and by the Saints' miracles. Thus, the first act of Moscow's mission was "through the entire world to spread the Orthodoxy among the 'barbarian nations' on the Eve of the End Times."²²

17 PREOBRAZHENSKY, *The Ural and Western Siberia at the End of the 16th – Beginning of the 18th Centuries*, 16

18 KUPTSOV, *The Clan of Stroganov*, 18

19 DALE, *The Muslim Empires of the Ottomans, Safavids, and Mughals*; HODGSON, *The Venture of Islam*. Vol. 3, *The Gunpowder Empires and Modern Times*; STREUSAND, *Islamic Gunpowder Empires. Ottomans, Safavids and Mughals*.

20 SHIROGOROV, *War on the Eve of Nations*, 139–40; 263–66

21 MASLUZHENKO and RYABININA, "The Shibanids' Restoration in Siberia and the Reign of Khan Kuchum in the Second Half of the 16th century," 100, 102

22 PELENSKI, "The Muscovite Imperial Claims to the Kazan Khanate," 571–72, 575–76

The Stroganovs became the embodiment of peril for Kuchum. They managed the Moscow frontier in the Ural, and by the 1580s, they had built-up their family holding of 25,000 square kilometers through exploitation and with options to expand it by a further four times.²³ The Stroganovs constructed wooden forts, *ostrogs*,²⁴ summoned Russian settlers, distributed lands to farmers, built dams and mills, salt boilers and metal works. They raised their own private troops, subjugated the local Uralic tribes and forced them to pay the *yasak*, a fur tribute, to the tsar of Moscow's. They advanced east and eroded the Siberian borderland. Kuchum understood that he must reform his khanate to meet these challenges. He had the patterns of state-building before his eyes, the Kazan Khanate, that had just been crushed by Moscow but had demonstrated a century-long fierce resistance,²⁵ and the Uzbek Khanate in Middle Asia that inherited the high statesmanship of the Temürid empire.²⁶ Military and religious emigres from Kazan and Middle Asia served him as advisers.

Kuchum transformed his khanate based on five principles. First, he attracted the nomadic Tatar clans in the Siberian Steppes and settled sedentary Tatar clans into the deep Siberian forests along its great rivers. Second, he submitted the Uralic tribes, that inhabited Northern Siberia, to regular tax and tribute.²⁷ Third, Kuchum imported from Middle Asia *mullas*, *muftis* and *kadis* - priests, jurists, and judges - to run the life of the Tatar Muslims as well as to instruct the pagan Uralic tribes forcefully being converted by him into Islam.²⁸ Fourth, he promoted his prime export, precious Siberian furs - sable, black fox, ermine - to the hungry markets of Middle Asia, the Near East, and Europe. Furs attracted buyers like a magnet, with Bukhara and Urgench merchants launching caravans across the

23 This is calculated by the current author according to A.S. Adrianov's map in: KUPTSOV, *The clan of Stroganov*, 22

24 On the *ostrog*, see: DAVIES, "Introduction" to *Warfare in Eastern Europe, 1500–1800*, 3

25 On the Kazan Khanate, see: SHIROGOROV, *War on the Eve of Nations*, 177–79, 260–67; on the Moscow-Kazan duality, see: ROMANIELLO, *The Elusive Empire, 1552–1671*; on the Kazan Khanate state organization, see: MUHAMED'YAROV, *The Socio-Economic and Political Structure of the Kazan Khanate*.

26 On the Uzbek states, see: MCCHESENEY, "The Chinggisid restoration in Central Asia: 1500–1785"

27 MATVEEV and TATAUROV, "On the Territorial Administration of the Siberian Khanate," 34–35

28 YARKOV and KAPITONOV, "Kuchum and Yermak: "Siberia's Axial Time," 89

wild Steppes on behalf of the Turks and Iranians,²⁹ while the English and Dutch ships pioneered the Arctic route to the Gulf of the river Ob.³⁰ The Ob traversed the Siberian Khanate, with its great subsidiary Irtysh, as the main pair of avenues. Immense wealth thus raced into the coffers of Kuchum.

Finally, the khan reorganized his Tatar cavalry, supplied it with lances, Middle Asian chain mails and helmets, and armour-piercing arrows for the famous Tatar composite bows.³¹ He purchased a few guns as well, but the number of operators of them remained in deficit. Kuchum supplemented the Tatar levy with the reputed Turkic mercenary warriors from abroad for his guard and contracted the tribal militia of the *mirzas*, the lords of Nogay, the large horde in the North Caspian Steppes, eager to serve him as the genealogically true Chinggisid master.³² The Siberian army became just as effective in a way, as its model, the Crimean army, was effective in the two Ottomans “Long Wars,” in Persia in 1578 to 1590³³ and Hungary from 1593 to 1606.³⁴

Kuchum’s state reconstruction was powerful, and by the start of the 1570s he felt strong enough to challenge Moscow’s eastward drive. Kuchum’s embassy arrived in Moscow in 1571 at the wrong moment. He witnessed the burning to ash of Ivan IV’s capital at the hands of Crimean khan Devlet Geray’s hords. Kuchum concluded that Muscovy was finished, but in July-August of the following year the Crimean army was to be annihilated by the Russians in the grandiose battle of Molodi,³⁵. He expected that Muscovy would soon have surrendered the Kazan

29 BAKHRUSHIN, *Essays on the Colonization of Siberia in the 16th and 17th centuries*, 107–108

30 APPLEBY, “War, Politics, and Colonization, 1558–1625,” 60; HORSEY, *The Travels*, 225; ISRAEL, *Dutch Primacy in World Trade*, 48; SKRYNNIKOV, *Yermak*, 75–85

31 KHUDYAKOV, “Warfare of the Siberian Khanate in the Late Medieval Time,” 241–43

32 SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 744–48

33 KORTEPETER, *Ottoman Imperialism During the Reformation: Europe and the Caucasus*, 178–164

34 KORTEPETER, “The Relations between the Crimean Tartars and the Ottoman Empire, 1578–1608,” Chs. 3–5; on Crimean Tatar military effectiveness, see: OSTAPCHUK, “Crimean Tatar Long-Range Campaigns;” on the Crimean and Siberian military similarities, see: KHUDYAKOV, “III.7.6. Warfare and the Military Culture of the Siberian Khanate;” PENSKOY, “III.7.3. Warfare of the Crimean Khanate at the End of the 15th–Beginning of the 17th century.”

35 On Devlet Geray’s raid and the battle of Molodi, see: PENSKOY, *Ivan the Terrible and Devlet Geray*, §3 and Ch. 4; SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 510–25; for an account in English, see: DAVIES, *Warfare, State and Society on the Black Sea Steppe, 1500–1700*, 55–57; FILJUSHKIN, *Ivan the Terrible: A Military History*, Ch.4

and Astrakhan Khanates, that it occupied in the 1550s, to the Crimea. He had nothing to fear to turn to confrontation.³⁶ Muscovy was split between fighting on three fronts of the pan-East-European Livonian War, against Sweden and Poland-Lithuania in Livonia (the present day Baltic states) and Western Rus' (present day Belarus); against the Crimea and Turkey in South-Western Rus' (present day Ukraine) and the Northern Black Sea Steppes; and there was incessant insurgency in the former Kazan Khanate. The remote Ural frontier was the last priority for Moscow, and it received a meagre number of troops from the center. In 1574, Ivan IV allowed the Stroganovs to fight back the rioting Uralic tribes and Siberian agents in an aggressive way.³⁷ Ivan IV also appointed as his lieutenants in Perm commanders from the Livonian front. One of them, prince Ivan Yeletsky, lieutenant in 1581, was famous for his month-long defence of the fortress of Lennwarden (Lielvarde) in Livonia in 1578 against joint Swedish and Polish-Lithuanian forces.³⁸

Chancellor Andrew Shchelkalov, the tsar's right-hand, managed the lucrative Ural affairs from the foreign agency and Kazan's regional administration which he headed as well. The agency conceived a plan to advance into Siberia according to a design that was well-tested in the extinguished Kazan Khanate³⁹ and in the Wild Steppe, *Dikoye Polye*, the no-man-land between the southern fringe of Muscovy and the pastures of the Crimea on the Black Sea's northern shore.⁴⁰ The strategy advocated a slow advance by the construction of forts well-supplied with firearms at the key communication points linked to the natural obstructions of the rivers and swamps by the abatis barriers against the penetration of the Tatar raiding parties. Shchelkalov encouraged the Stroganovs to follow the governmental plan with grants, tax exemptions, and lucrative bargains.⁴¹ Of course, he also loved their luxury fur bribes, and the silver kickbacks from their trading partners, the Dutchmen.

36 SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 744–46

37 PREOBRAZHENSKY, *The Ural and Western Siberia at the End of the 16th – Beginning of the 18th centuries*, 20–21

38 VLASJEV, *The Offsprings of Rurik*, 517–18

39 ROMANIELLO, "The Façade of Order: Claiming Imperial Space in Early Modern Russia," 199–202

40 DAVIES, *Warfare, State and Society on the Black Sea Steppe, 1500–1700*, 44–47

41 PREOBRAZHENSKY, *The Ural and Western Siberia at the End of the 16th – Beginning of the 18th centuries*, 22

With the chancellor's incentives, the Stroganovs built capable household troops; in 1572 their private regiment of 1,000 handgunners took part in the battle of Molodi where the Crimean army was annihilated by the Muscovite firepower.⁴² Those 1,000 handgunners were a decent force if concentrated, but to be able to hold an area a few hundred kilometers wide and long, it was a tiny group. This became evident at the start of the 1580s. In the summer of 1581, the chieftain of the Uralic tribes of Vogul (present day Mansi), *Beg* Bekbely Agtakov, raided the Stroganovs' possessions through the mountain passes. Bekbely attacked Russian villages and advanced on the town of Chusovoy, Maxim's stronghold. Maxim and Simon Stroganov exited to meet Bekbely. They needed victory, otherwise the overall riot of the local tribes would have smashed the tiny Russian communities. The Stroganovs confronted Bekbely in the "narrow place" and, thanks to their massed gunnery, destroyed his army in a day-long dogfight. But the Voguls' guerrilla war continued. They attacked the Russians in their farms and businesses so intensively that the settlers ran away. Khan Kuchum was the instigator both of Bekbely's incursion and the Vogul riot.⁴³ Simon, as the elder of the Stroganovs' clan, departed to Moscow with proposals for a change of strategy against Kuchum. The 24-year-old Maxim had remained alone when the major disaster erupted.

In the summer of 1582 the joint army of Khan Kuchum, under his son Aley (Ali) and Ablegirim (Abdul-Kerim), the Muslim-convert *Beg* of the Uralic principality of Pelym at the river Ob's estuary, descended on the Stroganovs' possessions through the mountain passes along the river Sylva.⁴⁴ They slipped upstream along the Kama looking for a bigger and easier prize than Stroganov's forts which all bristled with guns. This was the wealthy salt-producing town of Solikamsk, capital of the Moscow voivodeship of Cherdyn. Solikamsk, as a town in the peaceful rear, wasn't fortified. The allies sacked it and burned it, slaughtering its population, and marching then to Cherdyn. Alerted in time and thanks to their firepower, the garrison at Cherdyn held out against the odds of multiple Siberian and Uralic forces. The allies devastated Cherdyn's vicinity, then Ablegirim set off homeward through the northern passes along the river Lozva, and Aley turned back

42 SKRYNNIKOV, *The Yermak's Siberian Expedition*, 74

43 SKRYNNIKOV, *Yermak*, 72; VVEDENSKY, *The House of Stroganov in 16th–17th Centuries*, 94–95, 104

44 SHASHKOV, "The Beginning of the Takeover of Siberia," 32

to the river Chusovaya intending to avenge his arch enemies, the Stroganovs.⁴⁵ Moscow's military prestige in the region was shattered. As it turned out, the Russian population was defenseless in the face of a joint Siberian and Uralic aggression. While awaiting the Siberian army to be in his possession, Maxim didn't have any doubts about the strategy. Shchelkalov's concept was clever and reliable. But it didn't solve his immediate problem. Whichever long-run schedule the tsar's clerks had designed, Maxim needed to deal with the Siberian Khanate before the impending fatal invasion. He had neither enough years nor months for the strategical deployment of forts and colonists, as he had not more than a few weeks to prepare. What he was urging for was not a strategical but an operational solution and of the kind that his resources were able to maintain. Simon was still away, and nothing was heard from him. It was Maxim's choice of life and death to activate the plan before it was approved by the tsar and the chancellor. Maxim reasonably concluded that death under the sabres of Aley's Siberian horsemen was much more of a probability than having to face the remote fury of Ivan IV with his legendary bloodthirstiness. Maxim thus boldly resolved to cross his "Rubicon," i.e. the Chusovaya river. He triggered the Stroganovs' plan and put it in motion. Aley was shocked, and rushed away, hurting the hooves of his precious horses on the Ural rocky trails, towards the capital of his father, Khan Kuchum.

Dom Manuel.

The king of Portugal Dom Manuel I, who reigned 7,000 kilometres away and circa three-quarters of a century before, presented himself in his instructions to his field commanders⁴⁶ as a visionary. His *regimento* to the first viceroy of India Francisco de Almeida would have looked similar to the ideas of Alfred Thayer Mahan,⁴⁷ if the king had not preceded the American naval scholar-strategist of the nineteenth century by 400 years. It was only the third major Portuguese expedition to the Indian Ocean, and its seas and shores were little known, but Dom Manuel instructed his appointee as if with present day detailed maps and political studies on his lap.

45 SKRYNNIKOV, *The Yermak's Siberian Expedition*, 133–34; SKRYNNIKOV, *Yermak*, 86–87

46 On the *regimento*, see: REGO, *Portuguese Colonization In the Sixteenth Century: A History of the Royal Ordinances (Regimentos)*.

47 MAHAN, *Mahan on Naval Strategy*; MAHAN, *Naval Strategy Compared and Contrasted With the Principles and Practice of Military Operations on Land*.

The commitment of making “war with the Moors and trade with the heathen”⁴⁸ in the *Estado da India*, which had been established in 1505, was dual but not contradictory. Gaining monopolistic control over the marine routes in South Asia was the tool to achieve both commitments. Ravaging the Moorish commerce was presented as an admirable “service of God our Lord.” However, the king never hid his true intentions and the “principal motives of the enterprise” in East Asia. The soaring profit from the fortyfold increase in the selling price of spices in Lisbon over their cost in the “Indies” was a by-product of “an opportunity for destroying the Moors of those parts.”⁴⁹ Don Manuel’s enterprise was the continuation of the Iberian Reconquista and Crusades to North Africa. The exploration along the western coast of Africa was launched to envelop the North African Moors and establish an alliance with the fabulous Christian empire of the East, the “Land of Prester John.”

In the last third of the 15th century, crusading ambitions soared to reach a global dimension, although the globe itself as a fact was still seeking confirmation. The overland and amphibious onslaught by the combined armies and fleets of Christian powers on Constantinople and the Holy Land came under discussion.⁵⁰ The details of the grim dogfight against the Ottomans on the boundaries of the Hungarian mainland and the Venetian seaside did not suggest that the Christian forces had achieved the tactical superiority that prompted the rush to change strategy. Vice versa, the Turks demonstrated a better capability in raiding wars and the struggle over the frontier territories. They raided as far as Inner Austria and Friuli, cracking the Hungarian fortresses one after another, and wrestled Morea and Dalmatia.⁵¹ The Holy See desperately stitched the anti-Ottoman alliances together to save the Christian Balkans and South-Central Europe.⁵²

However, in the Western Mediterranean, the course of the Muslim-Christian confrontation took the opposite direction. In the XV c. the Christian kingdoms of Iberia overran the Peninsula’s Muslims. Spain, as the union of Castile and Aragon under the “Catholic monarchs” Isabella and Ferdinand, and Portugal under the

48 NEWITT, *A History of Portuguese Overseas Expansion 1400–1668*, 67

49 SALMAN, “Aspects of Portuguese Rule in the Arabian Gulf, 1521–1622,” 70,74–75

50 HOUSLEY, *Crusading and the Ottoman Threat, 1453–1505*, 66–69

51 See in brief: ÁGOSTON, *The Last Muslim Conquest. The Ottoman Empire and Its Wars in Europe*, P.4

52 WEBER, “Toward a Global Crusade?” 30

dynasty of Aviz did not consider the Ottomans to be a superhuman danger. For them, the Turks were only one of the devils that radiated from the Islamic heartland in the Near East where the Holy Land cried for liberation. The Iberian kingdoms acquired a messianic consciousness and came to contest world domination in the global struggle against Islam, which was seemingly underway. Spain and Portugal imagined that the Lord blessed them with undisputable military superiority over the Muslim forces, no matter whether Turkish or not. They looked for channels to project their military might right into the heart of Islam for its decisive destruction and believed that Islam would crumble in the debris once its sanctuaries of Mecca and Medina had been smashed.

When he gained the Portuguese throne not in the linear hereditary way, Dom Manuel sensed that he was celestially appointed. There were six heirs before him, but God had revoked all of them one after another to place the crown on Dom Manuel's head for him to engage in a special mission. After Africa was circumnavigated, a stunning project took shape, the destruction of the vicious "Sultanate of Babylonia, Mamluk's Egypt, identified with the symbolic Babylon of the St. John Apocalypse."⁵³ The crash of "Babylonia" would open the prospect of a thrust into the Holy Land and the Muslim heartland of Hedjaz⁵⁴ by way of a "two-pronged attack" along the Mediterranean coast of North Africa and across the Indian Ocean via the Red Sea.⁵⁵

In Dom Manuel's *regimento* to Almeida, who departed to India in 1505 with an armada of 22 ships and 1,500 men, two principal strategies for the Portuguese expansion in South Asia were delineated. The first one was based on the Portuguese's experience in West Africa, primarily in Guinea where they based their operations almost exclusively on their ships, avoiding commitment in the coastal strongholds.⁵⁶ The second one was generated in North Africa where the Portuguese undertook amphibious ventures to capture the coastal forts for region-

53 THOMAZ, "Factions, Interests and Messianism," 103

54 SUBRAHMANYAM and THOMAZ, "Evolution of Empire," 300–301

55 SUBRAHMANYAM, "Written on Water: Designs and Dynamics in the Portuguese Estado da Índia," 53–54; SUBRAHMANYAM and THOMAZ, "Evolution of Empire," 301

56 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, Ch.5 and 96–102; KHAZANOV, *Portugal's Expansion in Africa and the African Peoples' Struggle for Independence*, Ch. 2; NEWITT, *A History of Portuguese Overseas Expansion 1400–1668*, P.2; see also an anthology of sources in English: NEWITT, *The Portuguese in West Africa, 1415–1670. A Documentary History*.

al control and inland expeditions.⁵⁷ Almeida was ordered to capture and fortify the ports of Kilwa and Mombasa on Africa's east coast to be used as transit bases on the route to India, and use the island of Angediva off India's west coast as a base for operations. Dom Manuel also required Almeida to build a fortress at the mouth of the Red Sea, "rather inside it than outside."⁵⁸ King Manuel oscillated between whichever of the two operational plans was more effective for both the fulfilment of his Predestination and commercial success. Eventually, the North African strategical model would prevail in his mind. One year later, Almeida was instructed to capture and fortify the island of Ceylon and the port Malacca.⁵⁹

However, the viceroy emerged as an adept of the other model, the West African concept based on sea domination. Almeida abstained from following Dom Manuel's instructions in full. In his letter to the king of late 1508, he claimed that having distributed bases was dispersive: the forces must be kept together and based at sea. Almeida sacked Mombasa and fortified Angediva; in India, he confirmed his protection over the allied Quilon and Cochin shore sultanates, then he cruised over the spice routes.⁶⁰ Almeida professed an exclusively naval and commercial strategy.⁶¹ As the true inventor and first practitioner of the naval strategy of sea domination, he was much ahead of contemporary naval thinkers; the advocates of sea domination ever since are heavily indebted to him. "Portuguese supremacy resulted from the conquest on the sea, not on land".⁶² Almeida turned out to be more allured by commerce than might have been expected from a veteran *fidalgo*. He preferred collecting protection payments from spice traders and stockpiling spices for his return rather than projecting Christian power through the universal destruction of the Moors.

Soon Almeida's attraction for the strategy of sea domination became personally motivated. In March of 1508, his son, Laurengo was killed in the harbour of Chaul during the clash between the small Portuguese naval squadron and the

57 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, Chs. 4 and 109–112; SUBRAHMANYAM and THOMAZ, "Evolution of Empire," 303; RODRIGUES, "The Portuguese Art of War in Northern Morocco during the 15th Century," 333

58 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 227

59 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 228

60 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 227, 229

61 NEWITT, "Portuguese Amphibious Warfare in the East," 108

62 SALMAN, "Aspects of Portuguese Rule in the Arabian Gulf, 1521–1622," 75

much bigger joint fleet of the Egyptian Mamluks, which had arrived from the Red Sea headed by Amir Hussein al-Kurdi and Malik Ayaz, governor of Diu for the sultan of Gujarat, Mahmud Begada.⁶³ Mutilated by a cannonball in the heat of the action, Laurenco was bound to the mast by the ship's crew so that he could continue to keep command while his ship was sunk. Almeida devoted himself to avenge the son, as he "who eat the young rooster have to taste the old rooster,"⁶⁴ and so he concentrated all ships and men under his hand. In February of 1509, the viceroy annihilated the fleet of Amir Hussein in the harbor of Diu which bristled with Malik Ayaz's batteries. He erased them with gunfire and led his ships right between the anchored Egyptian vessels to allow point-blank range for his expert gunnery. Although severely hurt, Amir Hussein managed to escape, while shrewd Malik Ayaz begged to be taken into Portuguese vassalage. The triumphant "old rooster" was sailing along the Indian coast and shooting out the severed heads of the Mamluk captives from his guns on the streets and roofs of disloyal towns.⁶⁵

Almeida was a great naval commander, but his gorgeous victory at Diu, as well as his lucrative cruising on the commercial routes, did not advance the cause of Dom Manuel, which was to bring about the final crushing of the global Moors by destroying their sacred heartland. Almeida's empire was "the empire of plunder,"⁶⁶ but Dom Manuel's heart was not charged with greedy impulses. He liked booties indeed, who did not? But he cared about his predestination much more. The king sensed the countdown of time divinely bestowed to him. He felt on the brink of an apocalyptic precipice and Almeida's misdeeds frustrated him.

Why didn't Almeida follow both the messianic way of Dom Manuel and his direct instructions? He was vengeful and greedy, but wasn't that the norm for a general fighting against enormous enemy's odds on the brink of the universe? The odds are the answer. The Portuguese were a tiny military minority in East Asia,

63 See on those distinctive figures: CASALE, *The Ottoman Age of Exploration*, 26–27; ROSS, "The Portuguese in India and Arabia between 1507 and 1517," 547–49

64 See on the battle: DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 237; the battle in the Muslim sources: ROSS, "The Portuguese in India and Arabia between 1507 and 1517," 549–51

65 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 240–41; LONGWORTH DAMES, "The Portuguese and Turks in the Indian Ocean in the Sixteenth Century," 9–10

66 NEWITT, *A History of Portuguese Overseas Expansion, 1400–1668*, 71

2,500 men in 1513, and 4,000 in 1516,⁶⁷ while Almeida had fewer, with only a few hundred men against hundreds of thousands of native combatants. Almeida did not believe that the Portuguese troops under his command had the tactical edge that enabled them to overcome the locals' numerical odds. He did not know how to overrun Asia with that knot of men. Almeida artfully used his men on the water, annihilating his naval enemies and gaining ocean domination to collect protection fees and grab cheap spices. Then he stalled.

Dom Manuel, as visionary as he was, felt the stagnant side of Almeida's nature long before he received the viceroy's reports about his naval feat at Diu and the notices of his foes about his preference for spoil-hunting rather than following the king's peremptory instructions. It took three months to communicate from East Asia to Lisbon if the news was carried undercover through the Near East and one year if it went around the Cape of Good Hope. But in the same February of 1509, when Almeida's armada blazed into the hell-packed harbor of Diu, another armada sailed off from Lisbon under farewell salvos. The marshal of Portugal Fernando Coutinho, second highest in the military hierarchy of the kingdom, led it, with 15 ships and 3,000 men at his disposal.⁶⁸ He had an order to establish a firm Portuguese foothold on East Asian soil. The soil was Calicut, the capital of the Zamorin kingdom. In January 1510, Coutinho launched an amphibious assault on Calicut carrying out the regular design of Portuguese amphibious operations of the time. But he made the mistake of landing far from the city. It was chaotic; the march to Calicut was tiring; the engagement was messy; the expected gunfire support from the ships was not delivered. The troops under the marshal broke into the city, but they got bogged down in its maze and extensiveness, far different from European urban terrain. Coutinho oversaw plenty of destruction and marauded a good share of Calicut but lost his life. He was a rock of a man brought into action by his retainers, and he was not able to escape when natives ambushed his party, which was dragging the precious doors of the king's palace. Eighty Portuguese men were slain, and many more of them were wounded. Portuguese prestige in East Asia was shattered.⁶⁹ Portugal's numerous enemies rose and united, while their few allies wavered.

67 SUBRAHMANYAM and THOMAZ, "Evolution of Empire," 318

68 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 247

69 BETHENCOURT, "The Political Correspondence of Albuquerque and Cortes," 225

The ocean remained the domain of the Portuguese as yet unchallenged, but it was evident that neither sea patrolling nor the volume of spices shipped to Lisbon, 500 tons in 1513 and 2,000 tons in 1517⁷⁰, could restore the status of Portugal in East Asia and bolster the Dom Manuel's predestination. The king's messianic cause had to be rethought and restarted. Dom Manuel was called the Fortunate, and not in vain. Just one and half years later, East Asia, a quarter of the world, was overwhelmed by tiny Portugal; the Portuguese became the obsessive phobia of the local rulers from Japan to Arabia. The scaremonger Sharif, guardian of Mecca, was hiding his gold and harem in desert dens, fearing the oncoming Portuguese charge "to take out the treasures in Mecca and Mohammed's corps in Medina" and "permanently terminate" his "cult."⁷¹

Amphibious revelations of the gunpowder era

Despite their different conditions and ambitions, Honourable Maxim and Dom Manuel were both in the same power projection business and concomitant commerce. King Manuel kept for himself the decision-making center of the expansion while Maxim Stroganov was relegated to its frontier. Nevertheless, the ventures under their leadership were similar twins. The Stroganovs' possessions in the middle of the enormous landmass of Northern Eurasia were no less remote from the heartland of Muscovy than the *Estado da India* from Portugal. Kazan, the nearest major metropole with established Moscow power, was over 800 kilometres of wildness away from the Western Urals, and Moscow itself was at the same distance further on. Overland roads were virtually absent, so the river Volga and its grand tributary Kama served as the single communication line, doubling the distance. Isker, the capital of the Siberian Khanate, was located a further 800 kilometres directly to the east from Stroganovs' possessions over the mountainous Ural.

The traditional northern route around the ridge with shipping via the Arctic Ocean and the river Ob's Gulf, which had been used by the Novgorodian and Moscow fur expeditions since the thirteenth century, was tremendously difficult

70 OZBARAN, "Ottoman naval policy in the south," 58–59

71 ISLAHI, *Muslim economic thinking and institutions in the 10th AH/16th Century*, 59; XAVIER, "The biggest enterprise a Christian prince ever had in his hands", 10

and required a year of laborious journeying.⁷² After the Stroganovs moved to the Kama, their scouts started to reconnoitre the possible portages linking the Kama's tributaries on the Ural ridge's western side with the Ob's tributaries on its Siberian side. The Stroganovs engaged friendly Vogul pathfinders in the same way that Dom Manuel's commanders attracted the Arabian pilots in the Indian ocean when the Portuguese circumnavigated Africa.⁷³ Supposedly, the Ural portages straightened the way to Isker and turned the expedition there into one manageable in a single season. However, by the 1580s, the portages were still insufficiently explored and were exposed to Tatar and Vogul ambushes. Both Dom Manuel's and Maxim's power projection was water-based, and combined geographical exploration with thrust delivered on the onshore marine and riverine objectives⁷⁴ by amphibious means.⁷⁵

The invention of firearms and their introduction into military practice, the "gunpowder revolution" as this process is labelled in historiography,⁷⁶ brought two major changes in amphibious warfare with features that had been unseen before. First, in addition to the action of landing troops launched on the scene, ships for amphibious operations became capable of inflicting damage to the onshore-based enemies. Neither in Antiquity nor in the Middle Ages did substantial enough equipment exist to strike directly from a ship's deck to the shore. The catapults and other mechanical projectile machines were too large and cumbersome to be transported ready to use. They were not able to operate on Antique and Medieval ships with their limited space and cargo capacity.⁷⁷ Instead they were transported disassembled and were partly manufactured onsite. The "Greek fire," a destructive weapon in the arsenal of the fleet of the Byzantine Empire, the

72 KERNER, *The Urge to the Sea*, Ch. III esp. Map 4 on p. 26–27; MARTIN, *Treasure of the Land of Darkness*, P.4 esp. Map 2 on p.98

73 CORREA, *The Three Voyages of Vasco Da Gama*, Ch.15 etc.

74 On riverine amphibious warfare, see: TRIM, "Medieval and Early Modern Inshore, Estuarine, Riverine and Lacustrine Warfare."

75 On amphibious warfare in general, see: TRIM and FISSEL (eds.), "Amphibious Warfare, 1000–1700: Concepts and Contexts;" HECK and FRIEDMAN (eds.), *Evolving Role of Amphibious Operations in the History of Warfare; Doctrine for amphibious operations*, 1-3:100a,101a

76 See, first, two essays that are highly relevant to the topic of this discussion: BLACK, "European Overseas Expansion and the Military Revolution;" PARKER, "Europe and the Wider World, 1500–1700: The Military Balance."

77 BENNETT et al., *Fighting Techniques of the Medieval World, AD 500-1500*, 226

most technologically advanced sea-power of the European Early and the High Middle Ages, was “a petroleum-based substance, put under pressure, ignited, and discharged through bronze tubes,” effective only in a close boarding against the wooden constructions of enemy ships.⁷⁸ The Greek fire was of no use against either stationary or makeshift coastal fortifications. The Chinese, pioneers of artillery, did not deploy guns on their ships due to their wrong construction and the low quality of their gunpowder. The huge Chinese junks, venturing on the South-East Asian roundtrip from present day Indonesia to Arabia during the reign of the emperor Yung-lo (1405–33), were packed with professional soldiers but lacked artillery.⁷⁹

The ships of Antiquity and of the Early Modern era were deprived of the power to strike onshore targets in a “deck-to-shore” manner other than by using light projectile weapons like a bow and crossbow. However, they had almost negligible effect on onshore targets due to their short-distant range and low destructive force. The introduction of onboard artillery, effective against onshore targets in Europe in the middle of the 15th century,⁸⁰ prompted the “revolution” in amphibious warfare. “A vessel had become a platform for deck-to-shore gunfire concentrated upon shore-based targets.”⁸¹ A ship for amphibious operations grew beyond its traditional function as a troop transportation vehicle and took equal part in the assault on onshore enemies due to the landing troops that it brought to the objective.

Another “revolutionizing” element of the “gunpowder revolution”, the introduction of handheld and mobile firearms, changed landing troops. Before deck-to-shore gunfire was introduced, the landing troops remained the sole assault agent of the amphibious forces immediately battering the onshore enemy. However, the landing troops’ fighting capacity was in general lower than the fighting capacity of the land-based troops of a similar warfare type. The cavalry was the main

78 TALBOT and SULLIVAN, transl., *The History of Leo the Deacon*, 5; PRYOR and JEFFREYS, *The Age of the ΔΡΟΜΩΝ*.

79 SUBRAHMANYAM and PARKER, “Arms and the Asian,” 14

80 DEVRIES, “The Effectiveness of Fifteenth-Century Shipboard Artillery,” 393; RODGER, “The Development of Broadside Gunnery, 1450–1650”, 302

81 SHIROGOROV, “Chapter 6. A True Beast of Land and Water: The Gunpowder Mutation of Amphibious Warfare.”

force in the most strategic cultures of Antiquity and the Middle Ages.⁸² It was the manoeuvrable strike troops that brought victory on the battlefield. For most societies of the period, it was the fighting embodiment of the martial class, representing the elite of military knowledge and fighting expertise. However, Antique and Medieval vessels did not have the cargo capacity for bulk transportation of horses.⁸³ The landing troops arriving on hostile shores were thus deprived of the requisite number of cavalry. Besides that, the conditions of engagement often required heavy equipment, like projectile machines, prefabricated field fortifications, war-wagons, siege ladders and traps, and large weaponry like long pikes and *paveza* shields.⁸⁴ The landing troops did not have all of these in necessary abundance and were at a disadvantage against their better supplied, land-based adversaries. The “gunpowder revolution” turned the tables. Due to the well-studied improvement of the artillery and handguns at the end of the fifteenth century,⁸⁵ troops equipped with firearms achieved a fighting capacity that rivalled the best traditionally armed troops. Amphibious troops rushed to rearm with gunpowder. Artillery and handguns brought them an offensive and defensive potential equal and superior to land-based enemies, substantially increasing their chances of survival and operational success.⁸⁶

82 On the pros and cons of this well-discussed phenomenon, see: MORILLO et al., *War in World History*. Vol. 1, *To 1500* and Vol. 2, *Since 1500* P. 4; OMAN, *A History of the Art of War. The Middle Ages from the Fourth to the Fourteenth Century*; and *A History of the Art of War in the Sixteenth Century*; NICHOLSON, *Medieval Warfare. Theory and Practice of War in Europe 300–1500*; NICOLLE, *European Medieval Tactics*. (1) *The Fall and Rise of Cavalry*; VERBRUGGEN, “The Role of the Cavalry in Medieval Warfare.”

83 PRYOR and JEFFREYS, *The Age of the ΔΡΟΜΩΝ*, 325; ROSE, *Medieval Naval Warfare 1000–1500*, 44

84 For details on the importance of large Medieval fighting equipment, see: SMITH and DEVRIES, *Medieval Weapons. An Illustrated History of their Impact*.

85 See the account in: HALL, *Weapons & Warfare in Renaissance Europe*, Chs. 3 and 4

86 On the prominence of the landing troops equipped with the handguns and mobile artillery in the Ottoman taking of Rhodes in 1522, see, for example: SMITH and DEVRIES, *Rhodes Besieged*, 95–111; in the Spanish-Imperial taking of La Goletta and Tunis in 1535: GÜRKAN, “Ottoman Corsairs in The Western Mediterranean,” 115–36; and CARVALHAL and DE JESUS, “The Portuguese Participation in the Conquest of Tunis (1535),” 170–77; in the Moscow taking of Kazan in 1552: SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 57–117; in the English taking of Leith in 1544: FISSEL, *English Warfare 1511–1642*, 27–28; and POTTER, *Henry VIII and Francis I*, 109, 222–23; in the Portuguese relief of Diu in 1546: DE JESUS, *O Segundo Cerco de Diu (1546)*, 127–31, - the narratives demonstrate the trend unequivocally. See further references in: SHIROGOROV, “Chapter 6. A True

However, in the 16th century, the new properties of amphibious warfare, brought in by the “gunpowder revolution,” were much less evident than they are today. It required the vision of rulers to rely on them as part of their strategy, and the resolution of the commanders to implement them in their operational and tactical decisions. Both the Portuguese king Dom Manuel and the Stroganov clan leaders Maxim and Simon urgently needed their best men on the battlefield.

The man of Dom Manuel’s Predestination

Dom Manuel found his man in Afonso de Albuquerque. First of all the king promoted him as a co-thinker rather than as a military man or administrator. Albuquerque was brought up and educated in the palace of King Afonso V. The palace training and education consisted of indoctrination and learning practical skills including martial arts and court functions. There was a royal library in the palace with a collection of Antique and Medieval treatises. It was not out of mere vanity that Albuquerque called himself a “great scholar” with “much prudence, discretion and knowledge”.⁸⁷ The eager young man was nourished with readings and discourses, but nowhere in the opuses of Caesar or Cicero could he find the warfighting ideas which he later professed. The tales told by the court veterans of the Portuguese North-African expeditions and the West-Atlantic exploration were more educative and stimulating. The storming of the Moorish Atlantic port fortress of Alcazarseguir on 22 to 24 October 1458⁸⁸ was the first great success in the saga of Portuguese amphibious warfare. Seasoned Prince Henry the Navigator, leading the operation under King Alfonso V, massed dozens of wrought-iron guns on the *carracks* and caravels of the 220-ship Portuguese armada that surrounded the protruding fortress from its three sea sides, and in the batteries erected at its narrow cape neck.⁸⁹ The defenders of the town, expecting the Portuguese landing parties in the light barges, *barchas*, and boats under their seemingly impregnable stone walls were overwhelmed. The walls were crushed and the onslaught of 25,000 amphibious troops, many of whom were equipped with handguns, suppressed the resistance.

Beast of Land and Water: The Gunpowder Mutation of Amphibious Warfare.”

87 XAVIER, “The biggest enterprise a Christian prince ever had in his hands”, 18, 22–23

88 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 110

89 PURTON, *A History of the Late Medieval Siege, 1200–1500*, 346

The Portuguese taking of Alcazarseguir, when the prime innovative property of amphibious operations in the Early Modern era, the ships' deck-to-shore gunfire, was spectacularly utilized, was a revelatory moment in the history of warfare. The story of the taking of Alcazarseguir had its sequel in 1472 when Alfonso V captured Tangier. His armada of 300 ships brought an amphibious force of 24,000 men at Asilah (Azila), around 40 kilometres away. The Portuguese cleared the port of resistance using the ships' gunneries and landed there, then unloaded the heavy bombards and stormed the town and castle simultaneously from land and water. A few days after Asilah had fallen, terrified Tangier gave up.⁹⁰ But it was not just a question of the ships' overwhelming deck-to-shore gunfire and the landing troops' superiority in firearms. In both cases the leadership of the commander who had mastered fighting on water and onshore like a true amphibian beast must be emphasized.

Albuquerque started his military career at the age of 14 in the lost battle of Toro in March 1476, fought between the Portuguese forces of King Afonso V and the Castilian pretender Prince John against the army of the "Catholic monarchs" of Castilla and Aragon. He continued it in the Portuguese naval squadron sent in 1481 to assist the king of Naples, Ferdinand I, to dislodge the Turks from their Apulian foothold of Otranto.⁹¹ The squadron was a large amphibious force consisting of 20 caravels and one cargo *carrack*, under the leadership of Garsia Meneses, the bishop of Evora.⁹² Probably it was the Otranto lesson⁹³ that pushed the Portuguese to equip the caravels, initially a light vessel used in Atlantic Africa's slave-hunting, with heavy guns to crack the stone fortifications onshore.⁹⁴ The presence of Albuquerque at that moment is significant.⁹⁵

Albuquerque, secretly appointed to replace Almeida in the office of India's governor, commanded a squadron in the 15-ship fleet of Tristão da Cunha that de-

90 PURTON, *A History of the Late Medieval Siege, 1200–1500*, 346

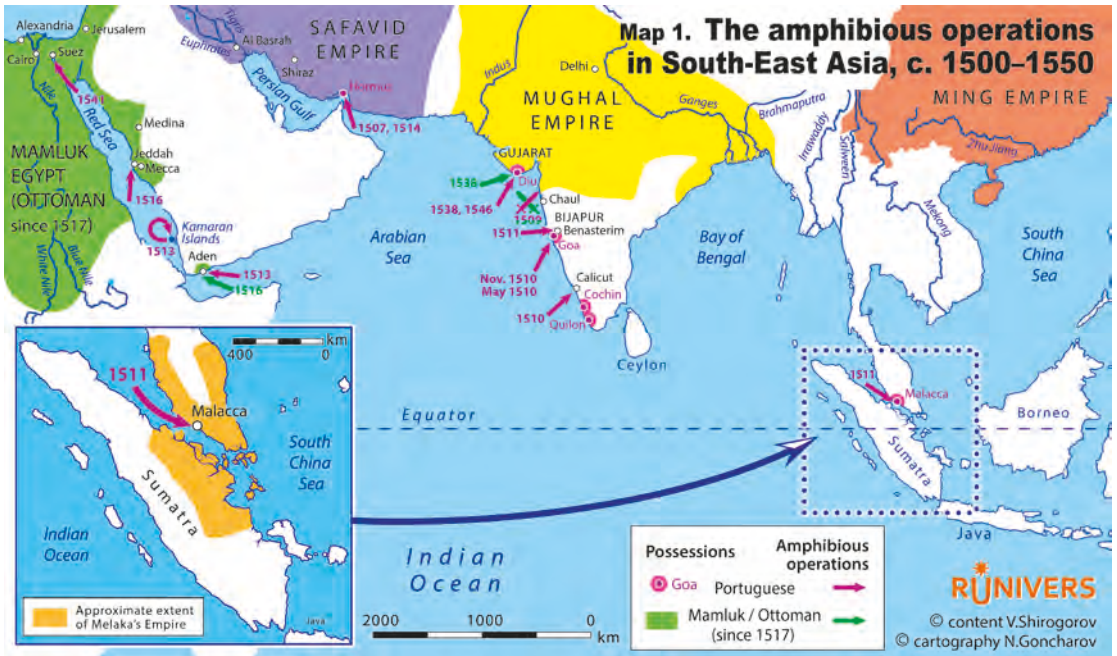
91 XAVIER, "The biggest enterprise a Christian prince ever had in his hands", 21

92 SETTON, *The Papacy and the Levant, 1204–1571*, 372

93 The Christians were denied access into Otranto's harbour by the Ottoman shore batteries. See: PURTON, *A History of the Late Medieval Siege, 1200–1500*, 385; SCARPELLO, *Aspetti di Storia Militaria nella Guerra d'Otranto*, 62–65

94 On the caravel's evolution, see: CIPOLLA, *Guns, Sails and Empires: Technological Innovation and European Expansion 1400–1700*, 80–81; GUILMARTIN, "The Earliest Shipboard Gunpowder Ordnance," 665

95 XAVIER, "The biggest enterprise a Christian prince ever had in his hands", 21–23



Map 1. The Amphibious operations in South-East Asia, c. 1500–1550

parted for South Asia in April 1506. He was chosen and favored by Dom Manuel's inner circle of millenarian advisers who "felt that the time was ripe to mount an assault on the Islamic bloc."⁹⁶ As it seems, Albuquerque liked spices, protection cash, and Indian spoils much less than Almeida. As well as Dom Manuel, he made it a priority to crush the Moors in their own shrine. He did not spend time in vain while waiting for the expiration of Almeida's term. After capturing the defenseless island of Socotra, Albuquerque proceeded to Hormuz. At the end of September 1507, he demanded the submission of the shah of Hormuz, Saif Al-Din Abu Nadar. When the shah refused, Albuquerque destroyed the Muslim ships in the island's harbor and landed his troops to occupy the port area. Although the shah was reduced to Portuguese vassalage, the captains of the squadron's ships pressed Albuquerque to drop the affair and he unwillingly evacuated.⁹⁷ But Albuquerque had successfully tested his operational skills. He now realized that

⁹⁶ THOMAZ, "Factions, Interests and Messianism," 103

⁹⁷ LONGWORTH DAMES, "The Portuguese and Turks in the Indian Ocean in the Sixteenth Century," 8; SALMAN, "Aspects of Portuguese Rule in the Arabian Gulf, 1521–1622," 79–80

the combination of the fleet as a deck-to-shore gunfire platform with the landing troops equipped with firearms was a fighting technique that the South Asian commanders and troops could not resist despite their enormous advantage in men, vessels and guns.

In November 1510, two months before the disastrous storming of Calicut, marshal Coutinho liberated Albuquerque from his home confinement that had been ordered by Almeida and appointed him to the office of India's governor. On his way back homeland, Almeida was killed by a poisoned arrow in Africa, and the strategy of sea domination temporarily lost his champion before King Manuel I. With the marshal slain in the storm, during which he himself had been wounded, Albuquerque became able to exercise his strategy to spread the Portuguese overseas empire undisturbed. He had elaborated it during his long first voyage there in March 1503 to September 1504 as an eschatological plan: "Our Lord carries the business of India in His hand."⁹⁸ Albuquerque understood that "to use India as a springboard against the Muslim Near East was not possible without a well-grounded position in India itself."⁹⁹ His strategy emphasized amphibious assault; naval superiority, Almeida's absolute, was a prerequisite for it.¹⁰⁰ Albuquerque planned to establish four port-fortress-*entrepots* as the axis of power projection in South-East Asia. Three of them were Malacca at the axis' south-eastern extremity, Goa and Hormuz at its middle. Besides their strategic position, Goa, Hormuz and Malacca were the *entrepots* for control over the "coastal and inter-regional trade [that] would provide larger and safer profits than [the spice export by] the Cape route."¹⁰¹ Albuquerque needed fast cash to maintain his forces. He dashed to conquer these objectives. Albuquerque's strategy was relentless, and it required an unleashing military power along the projection's axis toward the final thrust on Hijaz and Jerusalem. The fourth stronghold of the power projection axis was to be identified and captured in their vicinity, at the Red Sea.

Goa was captured without great ado in 1509 by a Portuguese fleet of 23 ships with 1,200 landing troops. Albuquerque had taken the almost unguarded fort of

98 XAVIER, "The biggest enterprise a Christian prince ever had in his hands", 10

99 THOMAZ, "Factions, interests and messianism," 103

100 BETHENCOURT, "The Political Correspondence of Albuquerque and Cortes," 224; Newitt, "Portuguese Amphibious Warfare in the East," 108

101 THOMAZ, "Factions, interests and messianism," 103

Pajim at the mouth of the river Mandovi and moved upstream to the Hindu sector of Goa where the garrison willingly surrendered and opened the gates. In May 1510, an army of 50,000 men of the ruler of the Bijapur sultanate Ismael Adil Shah pressed the Portuguese out.¹⁰² The stubborn Albuquerque waited offshore until reinforcements from Portugal arrived, then he built a force of 2,000 men, advanced on Goa along the Mandovi and, on 25 November 1510, stormed the city.¹⁰³ He applied a tactic that due to the “gunpowder revolution,” became a pattern in amphibious warfare. The deck-to-shore gunfire destroyed the enemy’s shore fortifications and softened the opposing troops, before the landing parties were sent onshore. Along with the landing troops, it dealt with the resistance in depth, and assisted them in holding on to the foothold in case of an enemy’s countercharge.

In his letters to King Manuel just before and after the second capture of Goa, Albuquerque asked him to send infantry arms, spears, pikes and shields, more men, and “Swiss captains” to discipline and lead them. The king met his requests, including sending Swiss-trained foot commanders and German gunners. The traditional Portuguese forces, organized according to the clientele semi-feudal model,¹⁰⁴ did not match the East Asian challenges, as they were insufficiently professional, trained and disciplined. While hitherto his regular standing forces in Asia consisted of Portuguese and local mercenaries,¹⁰⁵ now Albuquerque started to assemble troops of new type, trained in the advanced infantry “pike and shot” tactic typical of the Italian Wars.¹⁰⁶ This build-up fed his aggressive campaigns of conquest, and their showpiece was the storming of Malacca in July 1511. Albuquerque masterfully concentrated the men, guns and ships of Portuguese

102 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 251–52

103 ALBUQUERQUE, *The Commentaries of the Great Afonso Dalboquerque*, 4–15; historians emphasize different sides of Albuquerque’s tactics. See: BETHENCOURT, “The Political Correspondence of Albuquerque and Cortes,” 226; DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 253; NEWITT, *A History of Portuguese Overseas Expansion, 1400–1668*, 78; OLIVEIRA E COSTA and RODRIGUES, *Campanhas de Afonso de Albuquerque*, Vol. I, *Conquista de Goa*, 56–57

104 See on the Iberian military organization: KAMEN, *Spain, 1469–1714: A Society of Conflict*, 16–29

105 THOMAZ, “Factions, interests and messianism,” 104

106 DE JESUS, “Reassessing Portuguese military superiority in Asia in the sixteenth century – the case of land warfare,” 157

India for this enterprise.¹⁰⁷ When Albuquerque sailed to Malacca in June 1511 with an armada of 16 to 18 ships with between 700 and 1,600 landing troops consisting of two-thirds native Portuguese and one-third Malabar auxiliaries,¹⁰⁸ his intentions were resolute. Similar to Almeida's strategy of sea domination, Albuquerque's amphibious strategy was the product of his intimate personal feelings. It was part of Albuquerque's absolute belief in Portuguese combat superiority and his own Predestination.

The man of Maxim's doctrine

Maxim Stroganov was not a military man; he was a businessman and administrator. He was looking for a professional commander able to implement his strategy in Siberia. The Stroganovs probably queried their court patron, the chancellor Shchelkalov, who turned them on to Prince Dmitry Khvorostinin, his associate. The latter who, by the 1580s had made himself a formidable reputation as a combatant, suggested one of his officers, Yermak, who, not being a noble, but a military entrepreneur, was free from the regular Moscow duty required from a nobleman. The only reliable documented event of Yermak's military career refers to the Livonian War against Poland and Lithuania. In June 1581, Princes Michael Katyrev and Dmitry Khvorostinin led a mobile corps of horse and mounted foot with firearms to raid the Polish-Lithuanian rear. They stormed and burned the town of Shklov in present day Belarus, then went on to the larger city of Mogilev, sacked it, but the arrival of the Lithuanian *hetman* Krzysztof Mikołaj Radziwiłł prevented them from storming Mogilev's castle. The Polish governor of Mogilev, Marcin Strawiński, reporting to King Stephen Bathory on the composition of the Muscovite forces, mentioned Yermak as the leader, *ataman*, of a contracted band of Volga and Don Cossacks. With Vasily Yanov, the head of commissioned Cossacks, he led a unit of about 1,000 footmen with firearms.¹⁰⁹

If Khvorostinin was the fighting tutor of Yermak, his was the best possible tutor-

107 BETHENCOURT, "The Political Correspondence of Albuquerque and Cortes," 228

108 CHARNEY, "Iberians and Southeast Asians at War," 2; DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 255; McROBERTS, "An Examination of the Fall of Melaka in 1511," 26; NEWITT, *A History of Portuguese Overseas Expansion, 1400–1668*, 78; OLIVEIRA E COSTA and RODRIGUES, *Campanhas de Afonso de Albuquerque*, Vol. II, *Conquista de Malaca, 1511*, 40

109 SKRYNNIKOV, *The Yermak's Siberian Expedition*, 82–83;

ing. In the grandiose battle of Molodi in 1572, the Stroganovs' detachment of 1,000 men, in which Yermak possibly served, was integrated into the Khvorostinin's reserve division. In the crescendo of the battle, Khvorostinin brought into action the "Narva" horse regiment modelled after the German armoured *Schwarze Reiter*, armed with pistols and carbines and stuffed with Livonian, Prussian and German mercenaries. The Stroganovs' arquebusiers' salvo and the assault of the "Narva" horse regiment broke the Crimean center and caused the collapse of the Tatar array.¹¹⁰ Later on, in 1582 and 1590, Khvorostinin gained victories in two battles in Livonia against the advanced masters of firearms, the Swedes. In both cases, he applied his handgunners better than his opponents and outshot them.¹¹¹ For a foot commander, service under Khvorostinin was a combat school of the first class.

The patronage of chancellor Shchelkalov over Khvorostinin and his officers was a smooth guide to transferring the mercenary bands, consisting mostly of the Volga and Don Cossacks, into the private troops of the Stroganovs after their dismissal from the tsar's army following the armistice with the Polish-Lithuanian commonwealth negotiated in December 1581 to January 1582. Shchelkalov lobbied with the tsar for permission for the Stroganovs to contract the handy Cossack bands,¹¹² and introduced the best Cossack commanders to their new paymaster. The contracting of ready Cossack bands was the obvious solution. The Stroganovs could multiply their military power immediately, much faster than the slow commissioning of disbanded men. The available bands were preferable due to their combat cohesion and well-tested weaponry. Contracting was more expensive than commissioning, but money was not Simon's and Maxim's main concern when the Siberian horse army traversed their possessions; money was something they had. Yermak's band was the best possible investment for them, and they did not hold back on it. The Cossacks' skills as foot soldiers with handguns and artillery in holding off fortifications were essential. However, the potential of the riverine amphibious assault was rated much higher in the new aggressive Siberian strategy of the Stroganovs.

Moscow tested amphibious warfare from the beginning of its eastward expan-

110 DAVIES, *Warfare, State and Society on the Black Sea Steppe, 1500–1700*, 57

111 SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 510, 515, 521, 732, 815

112 PREOBRAZHENSKY, *The Ural and Western Siberia at the end of the 16th – beginning of the 18th centuries*, 48

sion in the last third of the fifteenth century, which coincided with the formation and rise of the Kazan Khanate as a successor of the Golden Horde with great North-Eurasian ambitions.¹¹³ The river Volga was the prime communication avenue between the two emerging East-European regional great powers. Moscow's striking base against the city of Kazan was the city of Nizhniy Novgorod, 400 kilometres upstream. Massive invasion campaigns against Kazan with the shipping and landing of thousands of troops were launched in 1467, 1468, 1469, 1487, 1506,¹¹⁴ 1523, 1527, 1530,¹¹⁵ and the final onslaught occurred in 1552 when the city of Kazan was fiercely bombarded, mined and stormed.¹¹⁶ During this period of almost a century, Moscow's amphibious warfare evolved from the auxiliary shipping of communal militia footmen accompanying the Moscow grand prince's household and territorial cavalry, into the prime operational deployment of the new fighting capabilities of ships and landing troops that emerged after the introduction of firearms.

During the century-long Kazan epic, Moscow's amphibious warfare acquired a feature that determined its gains and limitations, namely its commitment to the principle of joint operations.¹¹⁷ The Moscow amphibious forces seldom carried out substantial operations alone, but always interacted with the land army that marched to the objectives overland. Muscovy was not alone in this commitment, as the "escort design"¹¹⁸ was preferred by the amphibious combatants in the fifteenth to sixteenth centuries. The Ottomans became its adepts in the East Mediterranean and the Black Sea;¹¹⁹ the Italians, pioneers of the firearms' use

113 SHIROGOROV, *War on the Eve of Nations*, 177–79

114 SHIROGOROV, *War on the Eve of Nations*, Chs. 4–6;

115 SHIROGOROV, *Ukrainian War*. Vol. I, *Melee of Rus*, 684–93, 732–35, 750–756; 758–762

116 SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 57–117

117 For the concept, see: CAHILL, "An Unassailable Advantage."

118 The denotation is discussed in: SHIROGOROV, "Chapter 6. A True Beast of Land and Water: The Gunpowder Mutation of Amphibious Warfare."

119 See a survey in: SHIROGOROV, "Chapter 6. A True Beast of Land and Water: The Gunpowder Mutation of Amphibious Warfare;" and some on-case studies: the taking of Lepanto in 1499, GOFFMAN, *The Ottoman Empire and Early Modern Europe*, 143; the taking of Sinope and Trabzon in 1461, MAGOULIAS, *Decline and Fall of Byzantium to the Ottoman Turks*, 20–21; the siege of Belgrade in 1456, PÁLOSFALVI, *From Nicopolis to Mohács*, 174–87; the conquest of Negroponte in 1470, SETTON, *The Papacy and the Levant, 1204–1571*, 300–303; the storm of Pskov by the Livonian Order in 1480, SHIROGOROV, *War on the Eve of Nations*, 234–35; the taking of Kiliya and Akkerman in 1484, PILAT and CRISTEA, *The Ot-*



Map 2. The amphibious operations in Eastern Europe, c. 1550–1600

in amphibious warfare, utilized it in their inland riverine and lacustrine operations;¹²⁰ and the armies of the Italian Wars (1494–1559) preferred it as well.¹²¹ Foot and artillery were transported to the objectives via water, which solved the issue of their mobility, and the cavalry marched overland for joint action with them. Although the all-importance of the cavalry on the battlefields relatively decreased after the introduction of firearms, the deployment of pikemen columns, wagon-camp array, pike and the adoption of shot tactics and other features of the “infantry revolution”,¹²² the cavalry remained a first-rate component of armed forces. It provided the power of shock and manoeuvre in combat, and it prevailed in the operational warfare of raids, manoeuvres and scorched land, and fighting

to man Threat and Crusading, 211–13.

120 The Venetian advance on Ferrara in 1482 and other operations, MORO, “Venetia Rules the Rivers.”

121 See, for example, the advance on Genoa in 1494, CLOUGH, “The Romagna Campaign of 1494,” 196–98; the advance on Naples in 1528, MALLETT and SHAW, *The Italian Wars 1494–1559*, 158

122 On the concept, see: HOUSLEY, “European Warfare c. 1200–1320,” 115–16; ROGERS, “The Age of the Hundred Years War,” 142–44



Fig. 1 and 2 Two miniatures demonstrating the Muscovite amphibious operation of the escort design against the Livonian fortress of Neuschloss (Syrensk, Vasknarva) at the river Narova's egress from Lake Peipus (Chudskoye), Estonia and Russia, in 1558. One of the best Muscovite commanders of the amphibious forces in the middle of the 16th century, Daniel Adashev was in charge of the assault. The first miniature depicts the landing of the troops from their ships and their deployment at Neuschloss under the protection of gabions. Adashev is the figure in the fur hat on the front left side. The second picture depicts action against the fortress with the amphibious foot in the trenches and the siege artillery bombarding from behind the gabions. Some Muscovite troopers still use their composite bows while the Muscovite artillery throws advanced incendiary bombs. *The Russian Illustrated Anthological Chronicle of the Sixteenth Century. The Synod's Volume*, Moscow, Russia, Sixteenth Century. Courtesy of the State Historical Museum of Russia. © Исторический Музей, СИН-962_353, СИН-962_355



И оучали по горѣ стрѣляти и зъ сего
 нарядѣ . и спичален по окномѣ . и
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 Іюна въ 5 . дѣ .

over the lines of supply.¹²³ The “escort design”, while guaranteeing success for the amphibious operations, at the same time could be an impediment. For it to be fully applicable, it required the availability of two routes -- waterway and overland--leading to the objective as well as conditions for the deployment of the forces in the operational theater and on the tactical terrain.

The “escort design” was suitable and fruitful in the Moscow operations against the Kazan Khanate, and it was manageable in Livonia (present day Estonia and Latvia), to which the main weight of the Moscow military commitment was shifted in the 1560s. But it was useless for offensive operations against the Siberian Khanate from the Stroganovs’ West-Ural possessions. The Stroganovs had no cavalry to march over the Ural accompanying the amphibious component. The Muscovite cavalry was territorial, based on the martial estate of the landowners.¹²⁴ The agricultural conditions to settle it in the Urals were absent. The Stroganovs had an infantry trained with firearms and had money to hire more of it. They had stocks of advanced arms and armour such as guns and matchlock handguns, pikes and sabres, mails, breastplates and helmets, grain powder, bullets and iron-balls because, in fact, they relentlessly produced all of this. And the Stroganovs had also many riverine ships with experienced crews in the rivers Volga, Kama, Don, Northern Dvina and in their basins. They shipped a large volume of goods, - salt, grain, timber, metals, leather and furs, - over Muscovy between the Caspian Sea and the Baltic, the Northern Black Sea and the Arctic Ocean. Their private troops operated on the rivers to subjugate and tax the indigenous West-Ural population, defend the Russian settlers and explore the new routes for colonization and commerce.¹²⁵ The Stroganovs’ ship-building yards were qualified to build a combat version of the *strug*, equipped with artillery and high boards to cover the hand-gunners and gunmen from the fearsome Tatar bow-shooting.¹²⁶ The Stroganovs were ready for more dashing kinds of amphibious warfare than the “escort de-

123 On the cavalry’s rally in Early Modern Western Europe, see: PHILLIPS, “Of Nimble Service. Technology, Equestrianism and the Cavalry Arm of Early Modern Western European Armies;” Eastern Europe: FROST, *The Northern Wars 1558–1721*, esp. Chs. 2 and 3; DAVIES, *Warfare, State and Society on the Black Sea Steppe, 1500–1700*, esp. Ps. 1 and 2

124 Hellie, *Enserfment and the Military Change in Muscovy*, Ch. 1; and KEEP, *Soldiers of the Tsar. Army and Society in Russia*, P.1, are reliable accounts of the Muscovite cavalry.

125 VVEDENSKY, *The House of Stroganov in 16th–17th centuries*, Ch.1

126 On the *strug*’s evolution, see: TUSHIN, *The Russian Navigation in the Caspian, Azov and Black Seas*, 37–38

sign” with its rudiments from the pre-gunpowder epoch.

Due to their semi-isolated position in the military frontier, the Stroganovs attracted an influx of people with military knowledge who looked for protection from misfortune at the hands of the harsh regime of Tsar Ivan IV or sought better hire terms for their military competence. The Stroganovs carefully selected commanders who were seasoned in the kind of warfighting they needed. They were especially interested in the participants of the Moscow long-range amphibious operations of the second half of the 1550s to the beginning of the 1560s, launched after the epic taking of Kazan. The Astrakhan Khanate and the Nogay Horde on the Northern Caspian shores became the objectives of Moscow’s thrust along the river Volga from the new-conquered Kazan. The onshore possessions of the Crimean Khanate and the Ottomans in the Northern Black Sea and Azov Sea regions were the objectives of Moscow’s push along the grand southward rivers Dnieper and Don with the operational base on their tributaries in Southern Muscovy.

The difference between those operational directions and the previous Moscow offensive route to Kazan was huge, as the main challenges facing Moscow this time were the distance of the charge and its operational terrain. The distance from the Moscow springboards at the Dnieper’s and the Don’s upper reaches to the objectives at their Black Sea and Azov Sea estuaries as well as from Kazan to the Volga’s Caspian mouth is around 1,500 to 2,000 kilometres. The terrain of the routes to the above objectives was not a forested plain, well-known by the Moscow armies, like the territory between Moscow and Kazan, but a bare steppe. There the Muscovites facing the nomadic armies of the Crimean Khanate supported by the Ottoman advanced military expertise were at a deathly disadvantage. This was demonstrated in the battle of Sudbishchi near Tula in July of 1555, the little-known engagement of tremendous importance for Early Modern Eastern Europe.¹²⁷ The joint operations of Moscow’s amphibious forces and land army were impossible on this operational terrain and the escort design of the amphibious operations could not be applied.

¹²⁷ On the battle, see: PENSKOY, “The battle at Sudbishchi on 3–4 July 1555;” SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 134–44

Next page: Fig. 3 The Muscovite amphibious expedition breaks through the Crimean Tatar ambush at the river Dnieper in 1556. The Crimean khan Devlet Geray (he is astride in his crown) commanded the ambush in person. Despite the Crimean ability to deploy artillery and hand-gunners this ambush was manned with traditional Tatar mounted archers armed with reflective composite bows. The Moscow troopers under the reputed leader of the amphibious forces Daniel Adashev employing heavy hand-guns similar to the West-European wall gun or hackbut outshot the Crimean archers. The difference in the outfit of Adashev's troopers demonstrates that his forces were composed of dismounted cavalymen (in their mails and helmets) and new regular handgunners (in their bright robes and hats). *The Russian Illustrated Anthological Chronicle of the Sixteenth Century.—Synod Volume*, Moscow, Russia, -Sixteenth Century. Courtesy of the State Historical Museum of Russia. © Исторический Музей, СИН-962_442

The Moscow war planners switched to another model of amphibious operations, highly similar to the Portuguese one of the second half of the fifteenth century briefly described above. It relied on the capability of the landing troops, obtained thanks to their rearmament with firearms, to carry out the amphibious attack independently, i.e. without overland support. The well-known drawbacks of the firearms of the time--the slow rate of fire and complications in recharging, their short range of hitting efficiency and the inaccurate aim of the handguns, along with the cumbersome construction and exuberant weight of the artillery¹²⁸--were an issue for this operational design, which was solved by the sheer number of firearms deployed and the order of their deployment. The solution was thus to make the volume of fire compensate for the firearms' drawbacks. Additional fighting strength was added to the landing troops by the shipping of prefabricated field fortifications specifically designed for the utilization of firearms. It was the birth of the "aside build-up" design of amphibious operations,¹²⁹ enabling

128 PEPPER, "Aspects of Operational Art: Communications, Cannon, and Small War," 188–92; ROGERS, "Tactics and the Face of Battle," 211–13

129 The denotation is discussed in: SHIROGOROV, "Chapter 6. A True Beast of Land and Water:

Ити не са мѣаки и да ни и дѣст по варыци
 и прихѣади и приеЗлиски и мѣа кормы
 мнѣи гѣе . и по чѣстѣоучни и ни и цели
 коу югѣрѣски и мѣа людемѣ . и гѣрѣско
 моужа и шованію и неспрадедливѣстѣи
 добрѣвраніи .



Иво поле по шѣи вѣрхѣ днѣпроу . а цѣрѣ
 крѣмскоу учалѣна и приходити .
 по мнѣи гѣи пѣснѣи мѣвѣстѣи . и не догѣи

Next page: Fig. 4 From the turn of the 15th – 16th centuries, onboard artillery was adopted on the traditional *strug*-type vessels of the Muscovite navy, applied as assault artillery platforms for amphibious operations. This miniature demonstrates that similarly to the Portuguese caravel, Dutch flyboat and Swedish buss, the muzzleloader gun on the two-wheel carriage became the *strug*'s most impressive ordnance. After the conquest of the Astrakhan Khanate in 1556, Muscovy dramatically increased its marine and riverine power on the river Volga and in the Northern Caspian Sea. In 1567 expedition under Muscovite Prince Andrew Babichev and Kabardia Prince Mamstryuk Cherkassky sailed along the Caspian coast toward the North Caucasus. It entered the mouth of the river Terek, shipped upstream, raided the Crimean allies and founded the fortress of Sunzha. *The Russian Illustrated Anthological Chronicle of the Sixteenth Century. Synod Volume*, Moscow, Russia, the Sixteenth Century. Courtesy of the State Historical Museum of Russia. © Исторический Музей, СИН-962_613

landing out of the immediate reach of the onshore enemy to have the time and space for the landing troops' disembarkation and deployment.¹³⁰ Moscow's taking of Ochakov at the Dnieper bay in 1556, the attacks on the Western Crimea through the Dnieper and Azov through the Don in 1559 and 1560,¹³¹ were all accomplished according to the aside build-up amphibious design, and was highly similar to the Portuguese operations in North-Western Africa and Albuquerque's taking of Hormuz and Goa. The Stroganovs looked out for and hired commanders and rank-and-file soldiers experienced enough to carry out amphibious operations of this class.

The Gunpowder Mutation of Amphibious Warfare.”

¹³⁰ Between the successes and failures of the early amphibious operation of the aside build-up design it is first worth paying attention to the Venetian attack on Argus and Corinth in 1463: MALLETT, “Part I. C. 1400 to 1508,” 45–47; the Danish siege of Stockholm in 1471, DEVRIES et al., *Battles of the Medieval World, 1000–1500*, 208–15; the Ottoman taking of Kaffa and Southern Crimea in 1475, SHIROGOROV, *War on the Eve of Nations*, 136–37; and the abovementioned taking of Otranto in 1481; the Spanish taking of Melilla in 1497 and Mers el-Kebir in 1505, HESS, *The Forgotten Frontier*, 37–38; and of St. George, Cephalonia in 1500, SETTON, *The Papacy and the Levant*, 523; English relief of Dublin in 1534, RAYMOND, *Henry VIII's Military Revolution*, 102–106; the Ottoman siege of Corfu in 1537, GOFFMAN, *The Ottoman Empire and Early Modern Europe*, 148; Spanish taking of Mahdia in 1550, DURO, *Armada Española*, 1:281–84

¹³¹ SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 119–27, 151–60

послѣ гравежи гдѣ рѣкѣи гостен пошлѣтѣ.
 и гдѣ рѣе го пожалуѣ по прежнему обычаю.
 дорогоу гостѣ его и коупцомъ пелнѣи по
 рити. безъ ацѣи и послѣ ходити



Того мѣсяца февраля въ днѣ. ѿпучетилъ
 црѣь белникъ князь ачеркасскъ. милопа
 князь пѣтроу и днѣ. аснѣи мѣ потѣгрю
 поучеловитѣ послимъ. црѣь на днѣи кня
 длггородо поодѣл князь ѿндѣл кня

Sometimes Yermak looks more like a legend and lore than as a real person and commander; his path to Maxim Stroganov's possessions in the Urals has been narrated enigmatically in the Chronicles and it has been disputed in historiography.¹³² In autumn of 1581, the corps of Katyrev and Khvorostinin, including the band of Yermak, was on duty in the town of Rzhev, right at the Volga's upper reaches, shadowing the Polish-Lithuanian army that sieged Pskov.¹³³ From that point, as soon as the rivers were clear of ice in the spring of 1582, around the beginning of April the band started its voyage of about 3,000 kilometres to the lower Volga. Yermak took a somewhat roundabout path to the Urals, but it was the fastest way for his riverine troops. In the lower Volga, Yermak was looking for men with amphibious skills and risky natures, and he found them in abundance¹³⁴ having enrolled veterans of the Moscow's riverine expeditions and brigands, who were often the same men. Yermak started moving back up the Volga. Now he had around 500 seasoned and motivated men.¹³⁵ He made about 2,500 kilometres along the Volga, Kama, and Chusovaya and arrived at Maxim's fort in July of 1582.¹³⁶ Maxim welcomed him with a great feast and not just for show. Everything was ready for Yermak, the *strugs*, guns and handguns, steel cold weapon and armour, powder and victuals, and not just for 500 men but for 5,000. The household troops of the Stroganovs made up the balance, including 300 firearms experts picked up between the Livonian, Swedish, Polish and Lithuanian prisoners of war whom the Stroganovs had acquired from chancellor Shchelkalov.¹³⁷

The actual volume of the expedition was probably around 1,000 men and 50 ships for troops, weaponry and victuals; one *strug* for 20 men was the regular accommodation.¹³⁸ It was not the kind of grandiose invasion carried out by Mongolian hordes of tens of thousands of horsemen with each Tatar khans heading thousands of them, for the expedition made use of an amphibious force equipped with firearms and stuffed with professional foot soldiers. It was duly

132 See the detailed discussion on the topic in: NAPOLI, *A Caduta del Khanato Siberiano nella Cronachistica Russa della Prima Metà del XVII Secolo*, §1.2.2.

133 SHASHKOV, "The Beginning of the Takeover of Siberia," 29

134 SKRYNNIKOV, *Yermak*, 55–56

135 VVEDENSKY, *The House of Stroganov in 16th–17th centuries*, 98

136 SKRYNNIKOV, *The Yermak's Siberian Expedition*, 134

137 KHUDYAKOV, "The Struggle for the Restoration of the Siberian Khanate in the 17th Century," 105; VVEDENSKY, *The House of Stroganov in 16th–17th centuries*, 98–99

138 VERSHININ, "A Longboat and *Koch* in Western Siberia in 17th century", 88–90

planned, equipped and supplied. Pathfinders were engaged and instructed. Maxim was sure that Yermak's amphibious gunmen would fire-chop all their Siberian antagonists into a sort of "beef Stroganoff," the meal introduced by one of his descendants into the European culinary art. When he grasped that the coming autumn of 1582 was to be a season with extremely high water in the Ural rivers and that Yermak's *strugs* could be driven to the very saddle of the mountain pass into Siberia, he ordered the assault on the Siberian capital Isker.

Melaka's bridge.

On 1 July 1511, Albuquerque's armada arrived at the Malacca Road off the Capacia Shoals. The sultan Mahmud of Malacca is often depicted as a decadent character, a tyrant and a poor Muslim, an opium addict and a womanizer, weak-willed and with poor governing skills. He was allegedly in decay, a vicious ruler who lost his city and his empire. But he was neither this nor that. Mahmud ascended the throne in 1488, being less than 15-years old when his uncle assassinated his father; he became a bleak ceremonial ruler. In 1510, Mahmud revolted, beheaded his uncle, abused his daughter, castrated his associates and forced the Muslim religious leaders of the sultanate to bless the reprisal.¹³⁹ At the moment of the Portuguese's arrival, from 20 to 100,000 Malaccan troops camped in the city preparing for the campaign at the periphery of Mahmud's realm. They included 3,000 mercenary Turks, 6,000 mercenary Persians from Khorasan, and 11,000 mercenary Javanese and other East Asians. Those mercenaries were experienced and reliable and their salary was paid three months in advance. The bands of the sultan's mobilized vassals made up the balance of the army.¹⁴⁰ Between 8,000 pieces of ordnance were at the disposal of the Malaccan army including the heavy guns sent by the ruler of Calicut and the locally produced pieces of renowned quality. The allied Gujerat fleet in the harbor was prepared to ship the Malaccan troops to their destination. The sultan forces were neither of low fighting capacity nor of low morale.

Despite the enemy's odds, Albuquerque aspired to vanquish them and overrun the city. The Chinese and Hindu dissidents supplied him with data on the

139 McROBERTS, "An Examination of the Fall of Melaka in 1511," 26–31

140 CHARNEY, "Iberians and Southeast Asians at War," 2–3; DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 256; McROBERTS, "An Examination of the Fall of Melaka in 1511," 32

Malaccan troops and assisted in the sultan's release of the confined Portuguese. One of them, Ruy de Araujo advised Albuquerque on the importance of the large bridge over the mouth of the river Melaka, a massive wooden structure with a mall of 20 trading pavilions that blocked the way upstream.¹⁴¹ Albuquerque cleared the harbour of any hindrance, burned the Gujerat ships and chased the sultan's small craft behind the bridge upstream of the river.¹⁴² The bridge divided the city into the non-Muslim Upe suburb and its Muslim center. The Upe end of the bridge opened to the Bazar Jawa, the large square where the trade in foodstuffs took place; the opposite end of it continued as an avenue towards the sultan palace and the main Mosque on the hill, Bukit Melaka. Mahmud also understood the key position of the bridge, and soon after Albuquerque's arrival, he fortified it with stockades. The bridge was garrisoned with artillery and handgunners with matchlocks.¹⁴³

In order to attack the city from the outside, the Portuguese should have landed behind the mangroves skirting it. The march through them might have wrecked the cohesion of the troops. Marching around them the Portuguese might have been exposed to the mightier enemy. The open plain invited Mahmud to make use of his enormous odds. The Malaccan army had numerous horse and elephant troops which the Portuguese lacked.¹⁴⁴ The Portuguese artillery was ship-based and lacked the means of movement. For Albuquerque the "aside build-up" classic design with the landing far from the objective was impractical. He needed another tactical plan to gain victory.

Albuquerque turned out to be among the first tacticians to realize that for the landing troops to be effective after their launch from the ships, there was no need for a foothold for their deployment alongside the objective. They also did not need a tactical pause between landing and engaging in battle. Albuquerque envisioned that effective landing troops could begin the assault directly from the ships, with the ships' decks being their build-up room and a foothold for the advance.¹⁴⁵ This kind of operation required effective command over the landing troops. It was of paramount importance to organize the landing troops' interaction with the onboard artillery shoreward fire. The gift and organizational skills of a

141 McROBERTS, "An Examination of the Fall of Melaka in 1511," 34–35

142 ALBUQUERQUE, *The Commentaries of the Great Afonso Dalboquerque*, 97

143 ALBUQUERQUE, *The Commentaries of the Great Afonso Dalboquerque*, 92,103

144 McROBERTS, "An Examination of the Fall of Melaka in 1511," 35–36

145 NEWITT, "Portuguese Amphibious Warfare in the East," 115–16

combat leader were the strongest abilities Albuquerque possessed. He emerged among the first commanders of amphibious operations who utilized the “direct assault” design in the era of “the gunpowder mutation of amphibious warfare”.¹⁴⁶ Its first inventor was the Swede Knut Jönsson Posse, who utilized it against the Muscovite fort of Ivangorod at mouth of the river Narva in 1496.¹⁴⁷ The Spaniard Pedro Navarro Count of Oliveto became the second one in his storming of the North African Penon de Velez in 1508,¹⁴⁸ and Albuquerque at Malacca in 1511 became the third. It is improbable that they communicated with each other, although some information circulating among the military could have been exchanged. The introduction of the amphibious “direct assault” design, a combination of combat vision and fighting experience, was a revelation, and it was discovered by each of them independently from one another.

Albuquerque considered a direct assault on either the bridge or the residence of the sultan. The latter was located on the hill Bukit Melaka. It had flat approaches from landward sides with the same disadvantage for the Portuguese landing as the city’s suburbs. The seaward side of the hill was steep, and the Portuguese were not able to fire their guns so sharply upward, and their landing party needed to apply long scales which they did not possess.¹⁴⁹ The bridge appeared at once the key to the city’s defenses and the sole objective for Albuquerque to favorably utilize his naval gunnery and seasoned foot soldiers.¹⁵⁰ The main technical advantage of Albuquerque’s amphibious forces consisted in his concentrated and mobile naval artillery,¹⁵¹ and he exploited it in full.¹⁵² The bridge was an ideal firing range for the Portuguese naval artillery with minimal shelter for the targeted enemy. The Portuguese foot soldiers had three advantages over the Malaccan forces - firearms, armour and cohesion - and Albuquerque immaculately utilized all of them. The bridge was a perfect terrain for the pike formation practiced by the Portuguese foot soldiers and awkward for the sultan’s horse and elephant troops.

146 The denotation is discussed in: SHIROGOROV, “Chapter 6. A True Beast of Land and Water: The Gunpowder Mutation of Amphibious Warfare.”

147 SHIROGOROV, *War on the Eve of Nations*, 311–12

148 DURO, *Armada Española*, 1:68–69

149 McROBERTS, “An Examination of the Fall of Melaka in 1511,” 36–37

150 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 256

151 McROBERTS, “An Examination of the Fall of Melaka in 1511,” 37

152 DE JESUS, “Reassessing Portuguese Military Superiority in Asia in the Sixteenth Century – the Case of Land Warfare,” 157

On July 25, Albuquerque bombarded the bridge, stormed, and overran it. The ruthless business of the direct amphibious assault in its tactical progression is well-described in Chapter Nine of *The Conquest of Malacca* by Francisco de Sa de Meneses, a great Portuguese poem of the seventeenth century.¹⁵³ The poem is worth reading by both commanders and historians as well. Albuquerque used the bridge as a foothold to attack in different directions and rallied his troops under the barrage of his ships moored to it. The ships' swivel guns swept the Malaccan manpower from the bridgeheads mercilessly, and their heavy guns caused havoc to the sultan's reinforcements crowded in the rear. Albuquerque smashed the best Malaccan troops, however, the day was too costly in Portuguese lives for his troops to move forward into the vast city, where the enemy was waiting. Albuquerque ordered to set the city on fire and to withdraw to the ships.¹⁵⁴ The bridge was a complete slaughterhouse for Mahmud's forces, but to crack them completely Albuquerque needed to repeat the massacre. He waited 20 days. The sultan refortified the bridge dividing it into sections with a stockade, sheltering his men from the Portuguese ships' gunnery. On the sixteenth day Mahmud, feeling the inevitable fight, read to his troops the story of Muhammed Hanafiah,¹⁵⁵ the prominent warrior of early Islam and a mystical figure of the End Times. Albuquerque found messianic incentives for his men as well. He called on them to extinguish "this sect of Mufamede" and "cast the Moors out of this country."¹⁵⁶ He resumed the attack on August 14 and Mahmud's arrangements fell under the direct amphibious assault of the Portuguese.¹⁵⁷ The wooden city was set ablaze by the unremitting deck-to-shore gunfire of the Portuguese and the invaders advanced on the hill Bukit Melaka. After 10 days of fierce street fighting the sultan ordered his shattered army to vacate the city.¹⁵⁸

The taking of Malacca became the pattern for the dynamic amphibious operation of direct assaults.¹⁵⁹ The Portuguese were successful thanks to their accurate

153 DE MENESES, *The Conquest of Malacca*, 139–61

154 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 258

155 McROBERTS, "An Examination of the Fall of Melaka in 1511," 37

156 ALBUQUERQUE, *The Commentaries of the Great Afonso Dalboquerque*, 116

157 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 258

158 McROBERTS, "An Examination of the Fall of Melaka in 1511," 38

159 For contrasting accounts, five of them are: the taking of Genoa in 1528 by the Spaniards and Andrea Doria's Genoese party, MALLETT and SHAW, *The Italian Wars 1494–1559*, 170; the Spanish-Imperial relief of Nice in 1543, ISOM-VERHAAREN, "Barbarossa and His Army



Fig. 5 The stunning victories of Albuquerque in South Asia were produced by his innovative combination of the ships' deck-to-shore gunfire and amphibious charge by the "pike and shot" infantry. Despite this fact, he is usually remembered in the paintings and monuments as the master of cold-steel hand-to-hand fighting. António Augusto da Costa Motta (tio), *The taking of Malacca*, Relief on the base of Albuquerque's monument in front of the Belém Palace, Afonso de Albuquerque Square, Lisbon, Portugal, 1901. Courtesy of René & Peter van der Krogt. Photo: René & Peter van der Krogt, <https://status.vanderkrogt.net>

choice of the objective, effective naval deck-to-shore gunfire, fair coordination of the landing troops and fleet, and the cohesion and extraordinary prowess of their foot soldiers. It was an operation of exemplary leadership and through it Albuquerque gained a prize of immense strategical value.

Who Came to Succor All of Us;" the abovementioned Portuguese relief of Diu in 1546; the Dutch reliefs of Leiden in 1574 and Antwerp in 1585, DE KORTE, "The 1574 Siege of Leiden during the Eighty Years' War: Attack by Land, Relief by Sea;" TRACY, *The Founding of the Dutch Republic*, 96–97, 219–20

Chuvash Cape.

Yermak's expedition shipped around 300 kilometers upstream on the Chusovaya and its tributary Serebryanka which are as wide as 50 to 100 meters most of the way, and deep enough for the *strugs*, full of men, weaponry and victuals. Only in its upper reaches does the Serebryanka narrow to 10 to 20 meters and streams over stone shoals, but it is still navigable in the season of high water. The sources of Serebryanka lay in the same mountain saddle where the rivers of the grand system of the Siberian River Ob, - the Barancha, the Tagil and the Tura, - get their springs. In the forested mountain saddle, the expedition abandoned its heaviest vessels, cleared the woods, portaged the lighter ones on trunk-rollers over knolls and pulled them by rope over flooded depressions.¹⁶⁰ The work was hard, but Yermak's men were accustomed to it.

The mountain saddle was only 20 kilometers long; soon, Yermak's troopers pushed their vessels onto the small river Barancha and proceeded to the bigger Tagil, 60 to 80 meters wide. The sailing downstream became much faster. The 60 kilometers lower river Tura has more abundant water, is 80 to 200 meters wide and 6 meters deep. In its 1000-kilometre range, close to the steep high banks, there are narrows where the Tura is only 50 to 70 meters wide. Yermak's caravan was ambushed there. The Siberian horse army of Aley rushed back home from its raid of the Stroganovs' possessions as soon as the departure of Yermak and his destination became known. It began riding through the mountain passes not far from Yermak's route, but much slowly. Aley dispatched fast couriers, alerting the garrisons on the frontier. The caravan streamed into the first ambush in the middle of the Tura's range, near fort Yepancha-Yurt (now the town of Tura).¹⁶¹ The attackers waited for the caravan in the river's narrow bend on the high steep bank and hailed it with arrows from their composite bows. Yermak's ships were constructed with high boards to shield the men inside and were equipped with breech-loaders and heavy hackbuts. They swept away the Tatars from the hill-bank; then Yermak launched his landing party, which destroyed the fort.

Following Tura, the caravan moved to the bigger town of Chamgi-Tura (now the Russian oil and gas megapolis of Tyumen) and sacked it. The next Siberian

¹⁶⁰ SKRYNNIKOV, *Yermak*, 97; VERSHININ, "A Longboat and *Koch* in Western Siberia in 17th century", 89

¹⁶¹ SKRYNNIKOV, *The Yermak's Siberian Expedition*, 151

ambush, laid by Khan Kuchum's nephew Mametkul, the best Siberian general in the location of Babasan in the Tura lower reaches, failed. Then Yermak took over a fort in the Tura's confluence with the river Tobol;¹⁶² the caravan then pressed on to the Tobol, which is a 300 meters wide big river. The caravan shipped 250 kilometres further and came to the great river Irtysh, around 1,000 meters wide. The estuary of the Tobol is almost opposite to the Irtysh's sharp bend from the westward to the northward direction. The 60 meter high steep hill landmarks the bend called Chuvash cape. The bank beneath it is a flat field of 6 to 8 hectares, around 400 meters long and 200 meters wide with its backside broken by deep ravines. It was much bigger in the sixteenth century because the Irtysh intensely undermines the Chuvash cape's sandy slope. In the middle of the field, the narrow 40 to 50 meter wide defile ascends right from it on the uphill Irtysh bank.¹⁶³ When the caravan entered the Irtysh, it almost smashed into the great mass of Siberian troops assembled on the field beneath Chuvash cape. The foot soldiers advanced on the beach while the horse troops took the background hills. The abatis crossed the landing beach and blocked the defile. The Siberian position seemed impregnable.

We can only guess the number on the Siberian side in that decisive moment. The army of Kuchum was as large as 10,000 men, including his Nogay mercenaries' guard and the Tatar clans' militia. Other tens of thousands could theoretically have been supplied by the Uralic tribes of the Ob estuary, but they were territorially isolated. A lot of the best Siberian men, possibly a couple of thousand, raided the Muscovite Perm province under Aley. Yermak had arrived much faster than they were riding back. But whatever the Siberian numbers were, Yermak was impressed. He did not launch the landing immediately. His caravan shipped past Kuchum's army but not far away. As soon as the expedition found a good landing bank on the opposite shore of the Irtysh, Yermak ordered mooring and camping. The cold October night fell. Yermak gathered his men and explained to them that the way back was impossible because the Ural passes were merged by winter, and it was too late to proceed towards the fur lands in the estuary of the Ob because the rivers would soon freeze. It was the moment to fight.

The topography of the Irtysh's bank, where Isker was located, and the deployment of the Siberian army excluded the aside build-up design for Yermak's

162 SHASHKOV, "The Beginning of the Takeover of Siberia," 34

163 NESKOROV, "On the Location of the Field of the Battle of 15 October 1582," 18–20

operation. The high steep hills of the shore denied a landing anywhere near the Siberian capital within tens of kilometres right and left of cape Chuvash occupied by the Siberian troops. There was no other ascent of the uphill country beside the defile blocked by the abatis. Yermak couldn't land far away from Isker, because the Siberian horse of mounted bow-shooters and mailed spearmen would destroy his foot soldiers in their long march over the forested country. Without the light field artillery that Yermak brought in his ships, the Tatar composite bows could outshoot the Cossacks' slow-loading matchlock handguns and a mailed Siberian spearmen's charge would break his foot pikemen. However, Yermak had neither carriers nor horses to drag his guns. In general, he faced the same tactical problems that had challenged Albuquerque 70 years before at Malacca. And Yermak's answer to them was similar to Albuquerque's. He dared to opt for an immediate direct amphibious assault of the Siberian onshore array.

How did Yermak conceive the direct assault design for his amphibious operation? During the Livonian War, the Swedes and Muscovites ran grandiose amphibious ventures on the gulfs, rivers and lakes of the Eastern Baltic region, but almost all of them adopted the "escort" and "aside build-up" designs.¹⁶⁴ The sole amphibious direct assault by Moscow had been launched in 1556 to take the fortress of Astrakhan, capital of the same-named Khanate at the Volga estuary in the Caspian Sea. The operation was carried out on a tactical terrain similar to the one encountered by Yermak in his Siberian landing in 1582, against a similar adversary and by Moscow troops, the regular *streltsy* handgunners and mercenary Cossacks, akin to Yermak's corps.¹⁶⁵ Yermak could not have participated in it, but his military career developed among the people who had taken part in it. And Yermak's powerbase, the region where he recruited the Cossacks for his band, the Lower Volga and middle Don, was occupied by Moscow as a result of the 1556 Astrakhan operation. Yermak might have had this event in mind when he designed the direct assault on Khan Kuchum's army in the night before the decisive landing. However, as it was for Knut Posse in 1496, Pedro Navarro in 1508 and Albuquerque in 1511, his tactical plan was his own discovery, a combination of military knowledge, personal combat experience and visionary

164 See a survey in: SHIROGOROV, "Chapter 6. A True Beast of Land and Water: The Gunpowder Mutation of Amphibious Warfare."

165 On this type of Moscow troops, see: SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 77–86; STEVENS, *Russia's Wars of Emergence*, 72–76

revelation. The field beneath Chuvash Cape and the adjacent 100 meter wide littorals of the Irtysh, covered with the bowshot, handgun and gun fire, became the terrain for the forthcoming engagement. On this tiny spot, the destiny of Siberia, covering nearly one-tenth of the global earth, was decided by the use of a direct amphibious assault.

Yermak's expedition returned to Chuvash Cape in the morning of 26 October 1582; the army of Kuchum was in its place. The caravan moored to the bank; its high-board ships were a good protection against the Tatar arrows as their gunfire swept away the Siberian foot soldiers from the beach. However, when they landed, Yermak's men became an exposed target for the Tatars bow-shooting. Yermak landed despite the peril, for he expected that the defensive armour which had been supplied to his men by the Stroganovs¹⁶⁶ would work. Following the handguns' discharge, the Russians were engaged in hand-to-hand fighting by the Siberian foot soldiers in front of the abatis. Mametkul, the leader of the Siberian horse, decided to attack and finish them. He ordered the opening of the passes in the abatis, which was a grievous mistake. The cohesive Russian pikemen pressed hard, and the Siberian foot rushed retreating to the passes at the same time as the mailed Tatar horsemen rushed forward. In the tumult, the khan's troops were massacred by the Russian ship guns, handguns and field guns, that had been disembarked and brought into action against their front lines.¹⁶⁷ It was a slaughter of the kind that Maxim Stroganov had forecast. The survivors of the Siberian foot soldiers ran away, and the horse regiment retreated in disarray. Mametkul was wounded, and he was unable to reassemble them. The Siberians vacated the field. Kuchum, who stayed on the hill behind with his guard, preferred to leave.¹⁶⁸ Yermak's troops pressed into the defile and ascended the uphill plateau. Yermak abstained to pursue the Siberian survivors preserving the close array of his pikemen, hand-gunners and field artillery because he knew well about the vicious Tatar tactic of feigned flight. Nothing of this kind followed. The Siberian army was not able to continue its resistance. Yermak marched to Isker.

166 KHUDYAKOV, "Warfare of the Siberian Khanate in the Late Medieval Time," 245–47

167 SHIROGOROV, *Ukrainian War*. Vol. III, *Head-to-head Offensive*, 758–60

168 SHASHKOV, "The Beginning of the Takeover of Siberia," 34

Fig 6 The two stages of Yermak's direct amphibious assault on the Siberian onshore deployment and fortifications are depicted in this drawing from its depth to its front. The Cossacks—destroyed the Siberian foot by the handgun fire on their landing and then the Siberian horse rushed on them through the passes opened in the abatis. It is important to note that Remezov, who authored the pictures following some eyewitness evidence, emphasized the use of pikes by the Cossack foot and Siberian Tatar horse. The employment of pikes by the cohesive cavalry and infantry formations is routinely considered to be a characteristic of West-European warfare, and the latter is labelled as an intrinsic technique of the Military Revolution's "pike and shot" tactic. Remezov, Semën. *Brief Siberian (Kungur) Chronicle*, Tobolsk, Russia, turn of the 17th – 18th centuries, Item 63. Courtesy of the Library of the Russian Academy of Science, Saint-Petersburg, Russa. The collection number: 07-7976п





The Siberian capital was abandoned.¹⁶⁹ It was a small, fortified town but a town nonetheless, which could have been defended by the use of firearms and where the expedition could settle for the oncoming winter. The Cossacks did not find any inhabitants there, but they were fast to grab Kuchum's treasures. Between the piles of luxury furs, they found an exquisite eastern-style carved gilt helmet set with precious stones. After a few months of fighting aimed at suppressing the Ob local Tatar and Uralic tribes, Yermak dispatched a delegation to Moscow which brought the helmet to the Kremlin and humbly offered it to Ivan IV as a crown of another Tatar Muslim realm conquered by his divinely blessed arms.

From the amphibious thrust to global empires.

On his return from Malacca to allied Cochin, Albuquerque was informed that the troops of the Bijapur sultanate under Rassul Khan had moved against Goa. Albuquerque confronted them in a battle over the suburb of Benasterim that the Bijapur troops had taken over and heavily fortified. They were destroyed by the fierce gunfire of the Portuguese naval and riverine-based artillery.¹⁷⁰ In February 1513, Albuquerque sailed to Aden with a fleet of 20 ships and landing troops of 1,700 Portuguese and 800 Malabar auxiliaries.¹⁷¹ However, he was not persistent in his attempt to take the city, the most important *entrepot* to the Western Indian Ocean. His prime concern was not to strangle the spice trade in the Red Sea. Albuquerque explored the power projection axis that he had constructed in the Indian Ocean as an avenue towards the Sanctuary of Islam in Hijaz. Aden did not suit him, because it lay outside the Red Sea, his maritime base for the amphibious assault. Albuquerque navigated into the Red Sea. He was in close proximity to the goal of his life. Albuquerque found his objective in Jidda (Jeddah), the port of Hejaz. He rushed to it but was untimely stopped by the subsiding of the Northward monsoon, which had propelled his fleet, two months before it was expected. He had no choice but to hibernate on Kamaran Islands in the Red Sea gorge awaiting to sail back as soon as the Southward monsoons would come.¹⁷²

169 TREPAVLOV, "The Siberian *Yurt* after Yermak," 11

170 ALBUQUERQUE, *The Commentaries of the Great Afonso Dalboquerque*, 212–13, 218–19; DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 261

171 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 263

172 LONGWORTH DAMES, "The Portuguese and Turks in the Indian Ocean in the Sixteenth Century," 12; BETHENCOURT, "The Political Correspondence of Albuquerque and Cortes," 234–35

The turn away short of Jidda was the most grievous setback of Albuquerque's career. It was as though the Lord, who had previously smoothed the path of his endeavors, stopped him at the very entrance to the sacramental altar. The Lord numbed his smashing fist, soaring over the heart of the Moors. Albuquerque's soul as a fighter dripped out of him. Galvanized before with frantic activity, he settled in Goa for 13 months without moving.¹⁷³ In 1514, Albuquerque turned to take Hormuz, the next pillar of his South Asian power axis. He suddenly appeared at Hormuz in March of 1515 with some 27 ships and 3,000 men, subjugated the sultanate and founded the Portuguese fort to control the island.¹⁷⁴ But in Hormuz Albuquerque contracted some form of dysentery, and in December of 1515, he died in view of Goa. In his demise he declared the Red Sea an open issue.¹⁷⁵

At that time, King Manuel ordered to replace Albuquerque in his office with his foe Lopo Soares de Albergaria, a mate of Almeida.¹⁷⁶ The unsuccessful charge on Aden and Jidda demonstrated, in the eyes of the king, that Albuquerque's amphibious strategy had come to a dead end and that he was exhausted as a person. The king decided to return to the Almeida-style strategy of sea domination. Although total Portuguese withdrawal from the Indian Ocean was not under discussion, the project to give up Goa and reduce the presence in South Asia to pre-Albuquerque times with minimal commitment to the onshore empire was on the table.¹⁷⁷ About three years later, Dom Manuel got himself represented on the big canvas "Fons Vitae" attributed to Colijn de Coter, an artist of the Flemish school,¹⁷⁸ humbly kneeling before the Crucified Christ represented in the middle of a vast Fountain of Life. Is it the Ocean of His Divine Will? The Indian Ocean? Dom Manuel returned to his Apocalyptic vision just before his death in December 1521, but that was an afterthought. The Portuguese *Estado da India* had lost its momentum for the onslaught against the Near Eastern Muslims.¹⁷⁹ Its predestination drive ran out forever; nevertheless, the Portuguese global empire in South Asia was consolidated on the pillars implanted by Albuquerque along the power axis that he projected according to Dom Manuel's revelation.

173 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 268

174 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 269

175 BETHENCOURT, "The Political Correspondence of Albuquerque and Cortes," 238

176 DIFFIE and WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, 272

177 THOMAZ, "Factions, Interests and Messianism," 104

178 *Museu da Misericórdia do Porto. Collections, Fons Vitae*.

179 THOMAZ, "Factions, Interests and Messianism," 105–106

In December 1582, Yermak sortied out of Isker and defeated the Mametkul's army, now including the troops which had returned with Aley, at the battle on the iced lake of Abalak.¹⁸⁰ He shocked the khanate's structure so tremendously that it collapsed. In spring of 1583, Yermak launched a riverine expedition into the Ob's estuary, where he subjugated the fur-abundant Uralic tribes.¹⁸¹ Khan Kuchum migrated to the steppes, launching raids into the forest region under Yermak's control. In August 1584,¹⁸² Kuchum tracked the Yermak riverine squadron of about 100 men, which traversed his khanate in search of a merchant caravan from Bukhara. The old steppe wolf stealthily encircled the island where Yermak camped. On a rainy night, he led his best men to attack the camp following the shallow trails revealed by the Uralic tribesmen. Wearing two plated mails at once for protection against Tatar bow-shooting, Yermak missed a jump from one *strug* to another, fell in the water, a board slipped off his hands, and he drowned.¹⁸³ In the morning, the crowd of Tatar and Uralic warriors reverently fished him out. He was identified and idolized.

During the 1590s, Maxim ordered Istoma Gordeev, an artist of the Stroganovs' household school, to paint an icon of his patron St. Maximus the Confessor, with thumbnails of the saint's deeds.¹⁸⁴ St. Maximus' disregard for the apostate emperor Heraclius was a prominent issue between the two of them. St. Maximus demonstrated it on a ship. Was it the ship of Providence? Yermak's ship? In the layout of the icon, Maxim Stroganov advocated his own plan, which brought about the conquest of Siberia. Soon after the information about Yermak's success was received in Moscow, tsar's troops were urgently gathered and sent into Siberia to garrison Isker and establish Moscow's authority over the crushed khanate. According to the former Shchelkalov plan, they erected forts in critical locations, at the portages, river confluences, mountain and forest passes.¹⁸⁵ The age-long expansion of Muscovy towards the Pacific Ocean had started; it was prompted by the operational technique pioneered by Yermak and the commercial ideas inaugurated by the Stroganovs.

180 KHUDYAKOV, "Warfare of the Siberian Khanate in the Late Medieval Time," 247–50

181 KHUDYAKOV, "Warfare of the Siberian Khanate in the Late Medieval Time," 252

182 SHASHKOV, "The Pogodin's Chronicle and Inception of the Siberian Annals," 118–19

183 SKRYNNIKOV, *Yermak*, 138–140; Solodkin, Ya.G. "*Yermak's Taking*" of Siberia, 143–51

184 *The Glossary of the Russian Icon Painters, Istoma Gordeev.*

185 SHASHKOV, "The Beginning of the Takeover of Siberia," 35–36, 39



Fig 7 According to the Orthodox icon-painting tradition, the image of a saint must follow the established precedents of his/her depiction and might resemble the look of the icon's customer. Maxim the Confessor was the saint patron of Maxim Stroganov, and this icon could represent Maxim's portrayal. Attention must be paid to the importance of ships and sea travel in the deeds of the saint (the two stamps on the left side) and of his rightful disobedience to the emperor (the three stamps on the right side, the one on the left side and the one on the lower side). In launching the amphibious conquest of Siberia against the tsar's orders, Maxim Stroganov followed the pattern of his saint patron. Istoma Gordeyev, *Maximus the Confessor*, an icon with 20 stamps, the turn of the 16th –17th centuries. The Donation of Maxim Stroganov to the Annunciation Cathedral of Solvychevodsk. Courtesy of the Museum of History and Arts, Solvychevodsk, Russia. The collection number: 346 ДРЖ

The amphibious technique and global history.

The amphibious operations at Malacca in 1511 and Isker in 1582, two events that occurred in the different environments of maritime South Asia and the interior of Northern Eurasia, 7,000 kilometres and 70 years distant from one another, were surprisingly similar. The planning and actions of their participants were stunningly alike despite the insuperable geographical, informational and cultural barriers that divided them.

Both Albuquerque and Yermak overwhelmed their enemies, the Malaccan sultan Mahmud and the Siberian khan Kuchum respectively, both resorted to the amphibious direct assault, directly landing at the enemy's defended objective. It was the most radical design of amphibious operations, a "short forceful attack through the combination of naval power and artillery capacity"¹⁸⁶ carried out with the employment of landing troops mastering firearms. The careers of both Albuquerque and Yermak demonstrate that new combat techniques of this kind were produced by the conjunction of the commanders' personal combat experience and their application of the technical and organizational innovations of the time, the development of firearms and professional soldiering. The commanders' skills, the "gunpowder revolution" and the introduction of regular military forces were the drivers of the battlefield upheaval that occurred in the Early Modern period. The transformation of amphibious warfare, previously a mere means of transporting troops, into a strategically decisive operational tool was among the most important changes in warfare.

Albuquerque's and Yermak's victories respectively at Malacca in 1511 and Isker in 1582, initiating West-European domination in South Asia and the Russian conquest of Northern Eurasia, were the triggers for the global changes. A comparison between them demonstrates the need to supplement the fashionable present-day theories according to which the European expansion was driven only by the Europeans' political shrewdness,¹⁸⁷ transportation capacity,¹⁸⁸ population volume¹⁸⁹ and the pandemics that they brought overseas,¹⁹⁰ for in isolation these

186 XAVIER, "The biggest enterprise a Christian prince ever had in his hands", 14

187 SHARMAN, *Empires of the Weak*.

188 RAUDZENS, "Military Revolution or Maritime Evolution?"

189 RAUDZENS, "Outfighting or Outpopulating?"

190 DIAMOND, *Guns, Germs, and Steel*, P.III

elements do not do sufficient justice to the actual events. European military superiority turns out to be the insight.¹⁹¹ In their first century, the West-European empires of South Asia were maritime and the Russian empire of the Northern Eurasia was riverine. Their fighting potential in their conflicts against the local polities and the competing empire state-builders was amphibious, based on the new capability of amphibious warfare unrealized before the military transformation of the Early Modern period. In combat and in the long run, it turned out to be superior to the battle designs still knotted in traditional modes of warfighting and war-thinking.

The contemporaries of Albuquerque and Yermak were stunned by the performance of their amphibious operations. At the time of their death, a superhuman power was attributed to them both as well as the function of implementing the divine will. This was how the new fighting technique produced by the military revolution was interpreted in the millenarian consciousness of the 16th century.

“His body, dressed in the habit of the Order of Santiago, was carried... to the chapel of *Nossa Senhora da Conceição*, followed by all the noblemen, clergy and people... The “gentiles” were reported as saying, “it could not be that he was dead but that God needed him for some war and had, therefore, sent for him.”¹⁹²

The Tatars and Voguls “titled him God and buried him according to their custom... He bled like alive and looked miraculous and terrifying... and the pillar of light arose over him to heavens... They offered him prayers and shared his armour”¹⁹³ regarding him as be invincible and immortal.

191 See the classic work on this concept: PARKER, *The Military Revolution*; and an exemplary case-study: ANDRADE, *The Gunpowder Age*.

192 BETHENCOURT, “The Political Correspondence of Albuquerque and Cortes,” 239

193 *The Remezov Chronicle*, 346

BIBLIOGRAPHY.

- ÁGOSTON, Gábor, *The Last Muslim Conquest. The Ottoman Empire and Its Wars in Europe*, Princeton and Oxford, Princeton U. P., 2021.
- ÁGOSTON, Gábor, “War-Winning Weapons? On the Decisiveness of Ottoman Firearms from the Siege of Constantinople (1453) to the Battle of Mohács (1526),” *Journal of Turkish Studies* Vol. 39, December 2013, pp. 130–43.
- ALBUQUERQUE, Afonso de, *The Commentaries of the Great Afonso Dalboquerque, Second Viceroy of India*, Vol. 3, Cambridge, New York and Melbourne, Cambridge U. P., 2010.
- ANDRADE, Tonio, *The Gunpowder Age. China, Military Innovation, and the Rise of the West in World History*, Princeton, Princeton U. P., 2016.
- APPLEBY, John C. “War, Politics, and Colonization, 1558–1625,” in CANNY, Nicholas (ed.), *The Oxford History of the British Empire. Vol. I, The Origins of Empire. British Overseas Enterprise to the Close of the Seventeenth Century*, Oxford and New York, Oxford U.P., 2001, pp. 55–78.
- BAKHRUSHIN, S.V. *Essays on the Colonization of Siberia in the 16th and 17th Centuries* [Бахрушин С.В. *Очерки по истории колонизации Сибири в XVI и XVII вв.* Москва: Издание М. и С. Сабашниковых, 1927 in Russian].
- BARKEY, Karen. *Empire of Difference. The Ottomans in Comparative Perspective*. Cambridge, New York and Melbourne, Cambridge U.P., 2008.
- BENNETT, Matthew, Jim BRADBURY, Kelly DEVRIES, Iain DICKIE, and Phillis JESTICE, *Fighting Techniques of the Medieval World, AD 500–1500. Equipment, Combat Skills and Tactics*, New York, Thomas Dunne books, 2005.
- BETHENCOURT, Francisco, “The Political Correspondence of Albuquerque and Cortes,” in BETHENCOURT, Francisco and EGMOND, Florike (eds.), *Correspondence and Cultural Exchange in Europe, 1400–1700*, Cambridge, New York and Melbourne: Cambridge U. P., 2007, pp. 219–74.
- BLACK, Jeremy, “European Overseas Expansion and the Military Revolution,” in RAUDZENS, George (ed.), *Technology, Disease, and Colonial Conquests, Sixteenth to Eighteenth Centuries: Essays Reappraising the Guns and Germs Theories*, Boston, Leiden, Brill, 2003, pp. 1–30.
- CAHILL, Matthew J., *An Unassailable Advantage: The British Use of Principles of Joint Operations from 1758–1762*, Fort Leavenworth, United States Army Command and General Staff College, 2017.
- CARVALHAL, Helder and Roger Lee DE JESUS, “The Portuguese Participation in the Conquest of Tunis (1535): a Social and Military Reassessment,” in HERNÁN, Enrique García and Davide MAFFI (eds.), *Estudios Sobre Guerra y Sociedad en la Monarquía Hispánica guerra Marítima, Estrategia, Organización y Cultura Militar (1500–1700)*, Valencia, Albatros, 2017, pp. 170–77.
- CASALE, Giancarlo, *The Ottoman Age of Exploration*, Oxford and New York, Oxford U. P., 2010.
- CHARNEY, Michael W., “Iberians and Southeast Asians at War: The Violent First Encounter

- at Melaka in 1511 and After” [“Iberier und Südostasiaten im Krieg: Die Eroberung von Melaka 1511 und ihre Folgen” in German] in WALTER, Dierk und Birthe KUNDRUS (Hg.), *Waffen, Wissen, Wandel. Anpassung und Lernen in transkulturellen Erstkonflikten*, Hamburg, Hamburger Edition HIS, 2012, pp. 179–97. https://www.researchgate.net/publication/294261143_Iberians_and_Southeast_Asians_at_War_the_Violent_First_Encounter_at_Melaka_in_1511_and_After
- CIPOLLA, Carlo M., *Guns, Sails and Empires: Technological Innovation and European Expansion 1400–1700*, New York, Pantheon, 1965.
- CLOUGH, Cecil H., “The Romagna Campaign of 1494: a Significant Military Encounter,” in ABULAFIA, David (ed.), *The French Descent into Renaissance Italy, 1494–1495. Antecedents and Effects*, Abingdon and New York, Routledge, 1995, pp. 196–98.
- CORREA, Gaspar, *The Three Voyages of Vasco Da Gama and His Viceroyalty from the Lendas Da India*, New York, Burt Franklin, 1849.
- DALE, Stephen F., *The Muslim Empires of the Ottomans, Safavids, and Mughals*. Cambridge, New York and Melbourne, Cambridge U. P., 2010.
- DAVIES, Brian L. “Introduction” to DAVIES, Brian L. (ed.), *Warfare in Eastern Europe, 1500–1800*, Leiden, Boston, Brill, 2012, 1–18.
- DAVIES, Brian L. *Warfare, State and Society on the Black Sea Steppe, 1500–1700*, New York and London, Routledge, 2007.
- DE JESUS, Roger Lee, “Reassessing Portuguese military superiority in Asia in the sixteenth century – the case of land warfare,” in CARVALHAL, Hélder, André MURTEIRA, Roger Lee DE JESUS (eds.), *The First World Empire: Portugal, War and Military Revolution*, Routledge, London, 2021, pp. 152–166.
- DE JESUS, Roger Lee, *O Segundo Cerco de Diu (1546): Estudo de História Política e Militar*. Coimbra, Universidade de Coimbra, 2012.
- DE LA GARZA, Andrew, “Mughals at War: Babur, Akbar and the Indian Military Revolution, 1500 – 1605,” A PhD Dissertation, The Ohio State University, 2010
- DE KORTE, Samuel, “The 1574 Siege of Leiden during the Eighty Years’ War: Attack by Land, Relief by Sea,” in HECK, Timothy and B.A. FRIEDMAN (eds.), *Evolving Role of Amphibious Operations in the History of Warfare*, Timothy Heck and B.A. Friedman, Quantico, Marine Corps University Press, 2020, pp. 25–37.
- DE MENESES, Francisco de Sa. *The Conquest of Malacca*, translated by Edgar C. Knowlton Jr. Kuala Lumpur, University of Malaya Press, 1970.
- DEVRIES, Kelly, “The Effectiveness of Fifteenth-Century Shipboard Artillery,” *The Mariner’s Mirror* Vol. 84, No. 4, November 1998, pp. 389–99.
- DEVRIES, Kelly, Martin J. DOUGHERTY, Iain DICKIE, Phyllis G. JESTICE and Christer JÖRGENSEN, *Battles of the Medieval World, 1000–1500. From Hastings to Constantinople*, London, Metro Books, 2006, pp. 208–15
- DIAMOND, Jared M., *Guns, Germs, and Steel*, New York and London, W. W. Norton & Company, 1999.
- DIFFIE, Bailey W. and George WINIUS, *Foundations of the Portuguese Empire, 1415–1580*, Minneapolis, University of Minnesota Press, 1977.

- Doctrine for amphibious operations*, US Departments of the Army and the Navy, Washington DC, July 1962.
- DURO, Cesáreo Fernández, *Armada Española (Desde la Unión de los Reinos de Castilla y Aragón)*, Madrid, Sucesores de Rivadeneyra, 1895–1903, T.1, pp. 281–84 https://armada.defensa.gob.es/html/historiaarmada/tomo1/tomo_01_21.pdf
- GLETE, Jan, *War and the State in Early Modern Europe. Spain, the Dutch Republic and Sweden as Fiscal–Military States, 1500–1660*, London, Routledge, 2002.
- The Glossary of the Russian Icon Painters of the 11th–17th Centuries*, a website. [Словарь русских иконописцев XI–XVII веков, вебсайт, под ред. И.А. Кочеткова. Москва: «Индрик», 2009 in Russian] http://rusico.indrik.ru/artists/g/gordeev_istoma
- GOFFMAN, Daniel, *The Ottoman Empire and Early Modern Europe*, Cambridge, New York and Melbourne, Cambridge U.P., 2009.
- GOMMANS, J.J.L., *Mughal Warfare: Indian Frontiers and Highroads to Empire 1500–1700*, London and New York, Routledge, 2002.
- GUILMARTIN, John Francis, “The Earliest Shipboard Gunpowder Ordnance: An Analysis of Its Technical Parameters and Tactical Capabilities,” *The Journal of Military History* 71, 2007, pp. 649–69
- GÜRKAN, Emrah Safa, “Ottoman Corsairs in The Western Mediterranean and their Place in The Ottoman - Habsburg Rivalry (1505-1535),” Master’s Thesis, Bilkent University, Ankara, 2006.
- FILJUSHKIN, Alexander, *Ivan the Terrible: A Military History*. London, Frontline Books, 2008, EPUB.
- FISSEL, Mark Charles, *English Warfare 1511–1642*, London and New York, Routledge, 2001.
- Museu da Misericórdia do Porto. Collections, Fons Vitae*.
<http://www.mmipo.pt/en-gb/obras/fons-vitae>
- FROST, Robert I., *The Northern Wars 1558–1721. War, State and Society in Northeastern Europe, 1558–1721*, Harlow, Pearson Education, 2000.
- TALBOT, Alice-Mary and Denis F. Sullivan (transl.), *The History of Leo the Deacon. Byzantine Military Expansion in the Tenth Century*, Washington, Dumbarton Oaks, 2005.
- HALL, Bert S., *Weapons & Warfare in Renaissance Europe. Gunpowder, Technology, and Tactics*. Baltimore and London, The John Hopkins U.P., 1997.
- HECK, Timothy and B.A. FRIEDMAN (eds.), *Evolving Role of Amphibious Operations in the History of Warfare*, Quantico, Marine Corps University Press, 2020.
- HELLIE, Richard, *Enserfment and the Military Change in Muscovy*, Chicago and London, Chicago U.P., 1971.
- HESS, Andrew C., *The Forgotten Frontier. A History of the Sixteenth-Century Ibero-African Frontier*, Chicago and London, Chicago U.P., 1978.
- HODGSON, Marshall G. S., *The Venture of Islam. Vol. 3, The Gunpowder Empires and Modern Times*, Chicago and London, Chicago U.P., 1977.

- HORSEY, Gerome, Sir, *The Travels*, in BOND, Edward Augustus (ed.), FLETCHER, Giles, and Jerome HORSEY, *Russia at the close of the Sixteen Century*, London, Hakluyt society, 1856, pp. 153–266. <https://play.google.com/books>
- HOUSLEY, Norman, *Crusading and the Ottoman Threat, 1453–1505*. Oxford, Oxford U.P., 2013.
- HOUSLEY, Norman, “European Warfare c. 1200–1320,” in KEEN, Maurice (ed.), *Medieval Warfare. A History*, Oxford: Oxford U.P., 1999, pp. 113–35.
- ISLAHI, Abdul Azim, *Muslim economic thinking and institutions in the 10th AH/16th Century*, Jeddah, King Abdulaziz University, 2009.
- ISOM-VERHAAREN, Christine, “Barbarossa and His Army Who Came to Succor All of Us”: Ottoman and French Views of Their Joint Campaign of 1543–1544,” *French Historical Studies* No.30 (3), 2007, pp. 411–12.
- ISRAEL, Jonathan I., *Dutch Primacy in World Trade, 1585–1740*, Oxford, Clarendon Press, 1990.
- KAMEN, Henry, *Spain, 1469–1714: A Society of Conflict*. Harlow, Pearson Education, 2005.
- KEEP, John L., *Soldiers of the Tsar. Army and Society in Russia, 1462–1874*, Oxford, Clarendon Press, 1985.
- KERNER, Robert J., *The Urge to the Sea. The Course of Russian History. The Role of Rivers, Portages, Ostrogs, Monasteries and Furs*, Berkeley and Los Angeles, California University Press, 1942.
- КНАЗАНОВ, А.М., *Portugal's Expansion in Africa and the African Peoples' Struggle for Independence*. [Хазанов, А.М., Экспансия Португалии в Африке и Борьба Африканских Народов за Независимость, Москва, Наука, 1976 in Russian]
- КНУДЯКОВ, Yu. S., “The Struggle for the Restoration of the Siberian Khanate in the 17th Century,” [Худяков Ю.С., “Борьба за восстановление Сибирского ханства в XVII в.” // Маслюженко, Д.Н. и Татауров, С.Ф. (ред.), История, Экономика, Культура Тюркско-Татарских Государств Западной Сибири, Курган, Издательство Курганского государственного университета, 2011, in Russian] pp. 104–109.
- КНУДЯКОВ, Yu. S., “III.7.6. Warfare and the Military Culture of the Siberian Khanate,” [Худяков, Ю.С., “III.7.6. Военное Дело и Военная Культура Сибирского ханства” // ХАКИМОВ, Рафаэль и Ильнур МИРГАЛЕЕВ (ред.), *История Татар с Древнейших Времен в 7 тт., Т. IV, Татарские Государства XV–XVIII вв.*, Казань, Институт Истории АН РТ, 2014 in Russian] pp. 723–35.
- КНУДЯКОВ, Yu. S., “Warfare of the Siberian Khanate in the Late Medieval Time (Concerning its Interaction with the Russians),” [Худяков Ю.С., “Военное Дело Сибирского Ханства в Позднем Средневековье (в Аспекте Взаимодействия с Русскими)” // *Вестник НГУ. Серия: история, филология* Т.6, Вып. 3, 2007 in Russian] pp. 238–54.
- КОРТЕПЕТЕР, Carl Max, “The Relations between the Crimean Tartars and the Ottoman Empire, 1578–1608, with Special Reference to the Role of Gazi Giray Khan,” Ph. D. thesis, University of London, 1962.

- KORTEPETER, Carl Max, *Ottoman Imperialism During the Reformation: Europe and the Caucasus*, New York, New York U.P., 1972.
- KUPTSOV, I.V., *The clan of Stroganov*. [Купцов И. В., Род Строгановых, Челябинск, Каменный пояс, 2005 in Russian].
- LONGWORTH DAMES, Mansel, "The Portuguese and Turks in the Indian Ocean in the Sixteenth Century," *The Journal of the Royal Asiatic Society of Great Britain and Ireland* Part 1, January 1921, pp. 1–28.
- LORGE, Peter, "War and warfare in China 1450–1815," in BLACK, Jeremy (ed.), *War in the Early Modern World*, London and New York, Routledge, 2005, pp. 87–103.
- MAGOULIAS, Harry J. Doukas, *Decline and Fall of Byzantium to the Ottoman Turks*, Detroit, Wayne State U.P., 1975.
- HATTENDORF, John B. (ed.) MAHAN, Alfred Thayer, *Mahan on Naval Strategy: Selections from the Writings of Rear Admiral Alfred Thayer Mahan*, Annapolis: Naval Institute Press, 1991.
- MAHAN Alfred Thayer, *Naval Strategy Compared and Contrasted With the Principles and Practice of Military Operations on Land*. Lectures Delivered at U. S. Naval War College between the Years 1887 and 1911, Boston, Little, Brown and Company, 1911.
- MALLET, Michael Edward, "Part I. C. 1400 to 1508," in MALLET, M. E. and J. R. Hale, *The Military Organisation of a Renaissance State: Venice C.1400 to 1617*, Cambridge, New York and Melbourne, Cambridge U.P., 2006, pp. 45–47.
- MALLET, Michael Edward and Christine SHAW, *The Italian Wars 1494–1559. War, State and Society in Early Modern Europe*, London and New York, Routledge, 2012.
- MARTIN, Janet., *Treasure of the Land of Darkness. The Fur Trade and its Significance for Medieval Russia*. Cambridge, Cambridge U. P., 2004.
- MASLUZHENKO, D.N. and L.N. RYABININA, "The Shibanids' Restoration in Siberia and the Reign of Khan Kuchum in the Second Half of the 16th century," [Маслюженко Д.Н. и Рябинина Е.А., "Реставрация Шибанидов в Сибири и Правление Кучум Хана во Второй Половине XVI в." // Загидуллин, И.К. (ред.) Средневековые Тюрко-Татарские Государства, Вып. 1., Казань, Институт истории АН РТ, 2009 in Russian] pp. 97–111.
- MATTHEE, Rudi, "Unwalled cities and restless nomads: firearms and artillery in Safavid Iran," in MELVILLE, Charles (ed.), *Safavid Persia. The History and Politics of an Islamic Society*, London, New York, Tauris, 1996, pp. 389–416.
- MELVIN-KOUSHKI, Matthew, "Early Modern Islamic Empire: New Forms of Religiopolitical Legitimacy," in SALVATORE, Armando, Roberto TOTTOLO and Babak RAHIMI (eds.), *The Wiley-Blackwell History of Islam*, Hoboken: Wiley-Blackwell, 2018, pp. 353–75.
- MATVEEV, A.V. and S.F. TATAUROV, "On the Territorial Administration of the Siberian Khanate" [Матвеев, А.В. и Татауров, С.Ф. "К Вопросу об Административно-Территориальном Устройстве Сибирского Ханства," // Маслюженко, Д.Н. и Татауров, С.Ф. (ред.), История, Экономика, Культура Тюрко-Татарских Государств Западной Сибири, Курган, Издательство Курганского государственного университета, 2011, in Russian] pp. 87–90.

- McCCHESNEY, R.D., "The Chinggisid restoration in Central Asia: 1500–1785," Di Cosmo, Nicola, Allen J. FRANK and Peter B. GOLDEN (eds.), *The Cambridge History of Inner Asia, the Chinggisid Age*, Cambridge, New York and Melbourne: Cambridge U.P., 2009, 277–302.
- McROBERTS, R. W., "An Examination of the Fall of Melaka in 1511," *The Journal of Malaysian Branch of the Royal Asiatic Society (JMBRAS)*, Vol. 57, Pt. 1, 1984, pp. 26–39.
- MORILLO, Stephen, Jeremy BLACK and Paul LOCOCO, *War in World History. Society, Technology, and War from Ancient Times to the Present in two Vols. Vol. 1, To 1500, Vol. 2, Since 1500*. Boston, New York and London, McGraw-Hill, 2008.
- MORO, Federico, "Venetia Rules the Rivers. La Geo-Strategia Fluviale Veneziana (1431-1509)," *Nuova Antologia Militare* Fascicolo 2, No.7, Giugno 2021, pp. 7–62. <https://www.nam-sism.org/3.2%20%20fascicoli.html>
- MUHAMED'YAROV, Sh. F., *The Socio-Economic and Political Structure of the Kazan Khanate*. [Мухамедьяров, Ш. Ф., *Социально-экономический и Государственный Строй Казанского Ханства*, Казань, Ихлас, 2012 in Russian].
- NAPOLI, Claudio, *A Caduta del Khanato Siberiano nella Cronachistica Russa della Prima Metà del XVII Secolo: Sorrelazione Soncettuale dei Testi Edipotesi Genealogiche*. Pisa, Università "Normale" di Pisa, 2010, EPUB.
- NEKOROV, A.V., "On the Location of the Field of the Battle of 15 October 1582 between the Troops of Khan Kuchum and Cossack Band of Yermak," [Нескоров, А.В., "О Локализации Поля Сражения 23 Октября 1582 г. между Войском Хана Кучума и Казачьим Отрядом Ермака" // ТАТАРНИКОВ, А.И. (ред.) *Тобольск: Времена, События, Люди*, Тобольск, ТКНС УрО РАН, 2017 in Russian] pp. 16–27.
- NEWITT, Malyn, *A History of Portuguese Overseas Expansion 1400–1668*. London and New York, Routledge, 2005.
- NEWITT Malyn, "Portuguese Amphibious Warfare in the East in the Sixteenth Century (1500–1520)," in TRIM, D.J.B. and Mark Charles FISSEL (eds.), *Amphibious Warfare 1000–1700. Commerce, State Formation and European Expansion*, Leiden, Boston and Kohl, Brill, 2011, pp. 103–21.
- NEWITT, Malyn, *The Portuguese in West Africa, 1415–1670. A Documentary History*, Cambridge, New York and Melbourne, Cambridge U.P., 2010.
- NEWMAN, Andrew J., *Safavid Iran: Rebirth of a Persian Empire*, London and New York, Tauris, 2009.
- NEXON, Daniel H., *The Struggle for Power in Early Modern Europe. Religious conflicts, Dynastic Empires and International change*, Princeton and Oxford, Princeton U.P., 2009.
- NICHOLSON, Helen, *Medieval Warfare. Theory and Practice of War in Europe 300–1500*, New York, Palgrave Macmillan, 2004.
- OMAN, Charles, *A History of the Art of War. The Middle Ages from the Fourth to the Fourteenth Century*, Oxford, Blackwell and London, Fisher Unwin, 1885.
- OMAN, Charls, *A History of the Art of War in the Sixteenth Century*, London, Greenhill books, 1989.

- OLIVEIRA E COSTA, João Paulo and Vítor Luís Gaspar RODRIGUES, *Campanhas de Afonso de Albuquerque, Vol. I, Conquista de Goa, 1510*, Lisbon, Tribuna da Historia, 2008.
- OLIVEIRA E COSTA, João Paulo and Vítor Luís Gaspar RODRIGUES, *Campanhas de Afonso de Albuquerque, Vol. II, Conquista de Malaca, 1511*, Lisbon, Tribuna da Historia, 2012.
- OSTAPCHUK, Victor, "Crimean Tatar Long-Range Campaigns: The View from Remmal Khoja's History of Sahib Gerey Khan," in DAVIES, Brian L. (ed.), *Warfare in Eastern Europe, 1500–1800*, Leiden and Boston, Brill, 2012, 147–72.
- OZBARAN, Salih, "Ottoman naval policy in the south," in INALCIK, Halil and Cemal KAFADAR (eds.), *Suleyman the Second i.e. the First and His Time*, Istanbul, The ISIS Press, 1993, pp. 55–70.
- PÁLOSFALVI, Tamás, *From Nicopolis to Mohács. A History of Ottoman-Hungarian Warfare, 1389–1526*, Leiden, Boston and Kohl, Brill, 2018.
- PARKER, Geoffrey, *The Military Revolution. Military Innovation and the Rise of the West 1500–1800*, Cambridge, Cambridge U.P., 1996.
- PARKER, Geoffrey, "Europe and the Wider World, 1500–1700: The Military Balance," TRACY, James D. (ed.), *The Political Economy of Merchant Empires. State Power and World Trade, 1350–1750*, Cambridge: Cambridge U.P., 1991, pp. 161–95.
- PELENSKI, Jaroslaw, "The Moscovite Imperial Claims to the Kazan Khanate," *Slavic Review* Vol. 26, No. 4, Dec., 1967, pp. 559–76. <https://doi.org/10.2307/2492609>
- PENSKOY, Vitaly, *Ivan the Terrible and Devlet Geray* [Пенской, Виталий, *Иван Грозный и Девлет Гурей*, Москва, Вече, 2012, in Russian].
- PENSKOY, Vitaly, "The battle at Sudbishchi on 3–4 July 1555, an Episode of the Russian-Crimean Confrontation," [Пенской, Виталий, "Сражение при Судьбищах 3–4 июля 1555 г. Эпизод Русско - Крымского Противостояния" // *Научные ведомости БелГУ. Сер. История. Политология. Экономика. Информатика* №7, вып.10, 2009 in Russian] pp. 87–95.
- PENSKOY, Vitaly, "III.7.3. Warfare of the Crimean Khanate at the End of the 15th–Beginning of the 17th century," [Пенской, Виталий. "III.7.3. Военное Дело Крымского Ханства в Конце XV – Начале XVII в.," // ХАКИМОВ, Рафаэль и Ильнур МИРГАЛЕЕВ (ред.), *История Татар с Древнейших Времен в 7 тт., Т. IV, Татарские Государства XV–XVIII вв.*, Казань, Институт Истории АН РТ, 2014 in Russian] pp. 700–709.
- PEPPER, Simon, "Aspects of Operational Art: Communications, Cannon, and Small War," in TALLETT, Frank and D. J. B. TRIM (eds.), *European Warfare, 1350–1750*, Cambridge, New York and Melbourne, Cambridge U.P., 2010, pp. 181–202.
- PERDUE, Peter C., *China Marches West. The Qing Conquest of Central Eurasia*, Cambridge and London, Belknap Press of Harvard U.P., 2005.
- PHILLIPS, Gervase, "Of Nimble Service. Technology, Equestrianism and the Cavalry Arm of Early Modern Western European Armies," *War & Society* Vol. 20, Issue 2, 2002, pp. 1–21. <https://doi.org/10.1179/072924702791201872>
- PILAT, Liviu and Ovidiu CRISTEA, *The Ottoman Threat and Crusading on the Eastern Border of Christendom during the 15th Century*, Leiden, Boston and Kohl, Brill, 2018.

- The Pogodin Chronicle*, in DERGACHEVA-SKOP, E.I. (ed.), *The Siberian Annals*, [Погодинский Летописец // Е.И. Дергачева-Скоп, Сибирские Летописи, Новосибирск, Новосибирское книжное издательство, 1991 in Russian] pp. 57–104.
- POTTER, David, *Henry VIII and Francis I. The Final Conflict, 1540–1547*, Leiden, Boston and Kohl, Brill, 2011.
- PREOBRAZHENSKY, A.A., *The Ural and Western Siberia at the end of the 16th – Beginning of the 18th Centuries*. [Преображенский, А.А., Урал и Западная Сибирь в конце XVI - начале XVIII века, Москва, Наука, 1972 in Russian].
- PRYOR, John H., and Elizabeth M. JEFFREYS, *The Age of the ΔΡΟΜΩΝ. The Byzantine Navy ca 500–1204*, Leiden, Boston and Kohl, Brill, 2006.
- PURTON, Peter, *A History of the Late Medieval Siege, 1200–1500*, Woodbridge, Boydell Press, 2010.
- RAYMOND, James, *Henry VIII's Military Revolution. The Armies of Sixteenth-Century Britain and Europe*, London and New York, Tauris, 2007.
- REGO, A. Da Silva, *Portuguese Colonization in the Sixteenth Century: A History of the Royal Ordinances (Regimentos)*, Johannesburg, Witwatersrand U.P., 1985.
- The Remezov Chronicle in The Siberian Chronicles*, [Ремезовская летопись // Сибирские Хроники. Издание Императорской Археографической Комиссии, С-Петербург, Типография И.Н. Скороходова, 1907 in Russian] pp. 312–66.
- RODGER, N. A. M. “The Development of Broadside Gunnery, 1450–1650”, *The Mariner's Mirror* Vol. 82, No.6, August 1996, pp. 301–24.
- ROGERS, Clifford J., “Tactics and the Face of Battle,” in TALLETT, Frank and D. J. B. TRIM (eds.), *European Warfare, 1350–1750*, Cambridge, New York and Melbourne, Cambridge U.P., 2010, pp. 203–35.
- ROGERS, Clifford J. “The Age of the Hundred Years War,” in KEEN, Maurice (ed.), *Medieval Warfare. A History*, Oxford, Oxford U.P., 1999, pp. 136–62.
- RODRIGUES, Vitor Luís Gaspar. “The Portuguese Art of War in Northern Morocco during the 15th Century,” *Athens Journal of History* Vol. 3, Issue 4, September 2017, pp. 321–36. DOI:10.30958/ajhis.3-4-4
- ROMANIELLO, Matthew P., “The Façade of Order: Claiming Imperial Space in Early Modern Russia,” in ANDRADE, Tonio and William REGER (eds.), *The Limits of Empire: European Imperial Formations in Early Modern World History. Essays in Honor of Geoffrey Parker*, Farnham and Burlington, Ashgate, 2012, pp. 183–204.
- ROMANIELLO, Matthew P., *The Elusive Empire. Kazan and the Creation of Russia, 1552–1671*, Madison, University of Wisconsin Press, 2012.
- ROSE, Susan, *Medieval Naval Warfare 1000–1500*, London and New York: Routledge, 2002.
- ROSS, Edward Denison, “The Portuguese in India and Arabia between 1507 and 1517,” *Journal of the Royal Asiatic Society* Vol. 53, Issue 04, October 1921, pp. 545–62. DOI: 10.1017/S0035869X00149299
- RAUDZENS, George, “Military Revolution or Maritime Evolution? Military Superiorities

- or Transportation Advantages as Main Causes of European Colonial Conquests to 1788,” *The Journal of Military History* Vol. 63, No. 3, 1999, pp. 631–641.
- RAUDZENS, George, “Outfighting or Outpopulating? Main Reasons for Early Colonial Conquests, 1493-1788,” in RAUDZENS, George (ed.), *Technology, Disease, and colonial Conquests, Sixteenth to Eighteenth Centuries: Essays Reappraising the Guns and Germs Theories*, Leiden, Boston and Kohl, Brill, 2003, pp. 31–58.
- SALMAN, Mohammed Hameed, “Aspects of Portuguese Rule in the Arabian Gulf, 1521–1622,” PhD thesis, University of Hull, 2004.
- SCARPELLO, Vincenzo, *Aspetti di Storia Militaria nella Guerra d’Otranto*, 2010. <https://culturasalentina.files.wordpress.com/2010/09/aspettidistoriamilitarenellaguerradotrantopdf>
- SETTON, Kenneth M., *The Papacy and the Levant, 1204–1571*, Philadelphia: The American Philosophical Society, 1978.
- SHARMAN, J. C., *Empires of the Weak. The Real Story of European Expansion and the Creation of the New World Order*, Princeton, Princeton U.P., 2019.
- SHASHKOV, A. T., “The Beginning of the Takeover of Siberia,” [Шашков А.Т. “Начало присоединения Сибири” // Проблемы истории России Вып. 4, Евразийское пограничье, Екатеринбург, Волот, 2001 in Russian] pp. 8–51.
- SHASHKOV, A. T. “The Pogodin Chronicle and Inception of the Siberian Annals,” [Шашков, А. Т., “Погодинский летописец и начало сибирского летописания.” // Проблемы истории России Вып. 1, От традиционного к индустриальному обществу. Екатеринбург, Волот, 1996 in Russian] pp. 116–62.
- SHIROGOROV, Vladimir, “Chapter 6. A True Beast of Land and Water: the Gunpowder Mutation of Amphibious Warfare,” in FISSEL, Mark Charles (ed.), *The Military Revolution and Revolutions in Military Affairs*, Berlin, De Gruyter, 2022, forthcoming.
- SHIROGOROV, Vladimir, *Ukrainian War. The Armed Conflict for Eastern Europe in the 16th–17th Centuries. Vol. I, Melee of Rus (To the Middle of the 16th Century)* [Широгоров, В. В., Украинская война: Вооруженная борьба за Восточную Европу в XVI–XVII вв. Кн. I: Схватка за Русь (До середины XVI в.), Москва, Молодая гвардия, 2017 in Russian].
- SHIROGOROV, Vladimir, *Ukrainian War. The Armed Conflict for Eastern Europe in 16th–17th Centuries. Vol. III, Head-to-head Offensive: Baltics - Lithuania - Steppes (In the Second Half of the Sixteenth Century)* [Широгоров, В. В., Украинская война: Вооруженная борьба за Восточную Европу в XVI - XVII вв. Кн.3. Встречное наступление Балтика - Литва - Поле (вторая половина XVI в.), Москва: Молодая Гвардия, 2019 in Russian].
- SHIROGOROV, Vladimir, *War on the Eve of Nations. Conflicts and Militaries in Eastern Europe, 1450–1500*, Lanham, Boulder, New York and London: Lexington Books, 2021.
- SKRYNNIKOV, R.G., *Yermak* [Скрынников, Р.Г., *Ермак*, Москва, Просвещение, 1986 in Russian].

- SKRYNNIKOV, R.G., *The Yermak's Siberian Expedition* [Скрынников, Р.Г., Сибирская экспедиция Ермака, Новосибирск, Наука, 1982 in Russian].
- SMITH, Robert D. and Kelly DEVRIES, *Medieval weapons. An Illustrated History of their Impact, Santa Barbara, Denver and Oxford*, ABC-CLIO, 2007.
- SMITH, Robert D. and Kelly DEVRIES, *Rhodes Besieged: A New History*, Stroud, The History Press, 2011.
- SOLODKIN, Ya.G., "Talking to your love...": *The Arguable Issues of the 17th Century's Siberian Annals* [Солодкин, Я.Г., «Беседуя к Вашей Любви...»: Спорные Проблемы Истории Сибирского Летописания XVII века, Нижневартовск, Издательство Нижневартовского госуниверситета, 2017 in Russian].
- SOLODKIN, Ya.G.б "Yermak's Taking" of Siberia. *Enigmas and Answers* [Солодкин, Я. Г., «Ермаково взятие» Сибири: загадки и решения, Нижневартовск, Издательство Нижневартовского госуниверситета, 2010 in Russian].
- STEVENS, Carol B. *Russia's Wars of Emergence, 1460–1730*, Harlow, Pearson Longman, 2007.
- STREUSAND, Douglas E., *Islamic Gunpowder Empires. Ottomans, Safavids and Mughals*, Philadelphia, Westview Press, 2011.
- The Stroganov Chronicle in The Siberian Chronicles* [Строгановская Летопись // Сибирские Хроники. Издание Императорской Археографической Комиссии. С-Петербург, Типография И.Н. Скороходова, 1907 in Russian].
- SUBRAHMANYAM, Sanjay, *Empires Between Islam and Christianity, 1500–1800*, Albany, SUNY Press, 2019.
- SUBRAHMANYAM, Sanjay and Luis Filipe F. R. THOMAZ. "Evolution of Empire: The Portuguese in the Indian Ocean During the Sixteenth Century," in *The Political Economy of Merchant Empires. State Power and World Trade, 1350-1750*, edited by James D. Tracy, 298–331. Cambridge: Cambridge University Press, 1991.
- SUBRAHMANYAM, Sanjay, "Written on Water: Designs and Dynamics in the Portuguese Estado da Índia," in ALCOCK, Susan, Terence D'ALTROY, Kathleen MORRISON and Carla SINOPOLI (ed.), *Empires. Perspectives in Archaeology and History*, Cambridge, New York and Melbourne, Cambridge U.P., 2001, pp. 42–69.
- SUBRAHMANYAM, Sanjay and Geoffrey PARKER, "Arms and the Asian: Revisiting European Firearms and their Place in Early Modern Asia," P.1, *Revista de Cultura* 26, 2008, pp. 12–42.
- THOMAZ, Luis Filipe F.R., "Factions, Interests and Messianism. The Politics of Portuguese Expansion in the East, 1500–1521," *Indian Economic & Social History Review* Vol. 28, Issue 1, 1991, pp. 97–109.
- TRACY, James D., *The Founding of the Dutch Republic. War, Finance, and Politics in Holland, 1572–1588*, Oxford and New York, Oxford U.P., 2008.
- TREPAVLOV, V.V., *The Siberian Yurt after Yermak* [Трепавлов, В.В., Сибирский юрт после Ермака, Москва, Восточная Литература, 2012].
- TRIM, D.J.B. "Medieval and Early Modern Inshore, Estuarine, Riverine and Lacustrine Warfare," in TRIM, D.J.B. and Mark Charles FISSEL (eds.), *Amphibious Warfare 1000–*

1700. *Commerce, State Formation and European Expansion*, Leiden, Boston and Kohl, Brill, 2011, pp. 357–419.
- TRIM, D.J.B. and Mark Charles FISSEL (eds.), *Amphibious Warfare 1000–1700. Commerce, State Formation and European Expansion*, Leiden, Boston and Kohl, Brill, 2011.
- TRIM, D.J.B. and Mark Charles FISSEL, “Amphibious Warfare, 1000–1700: Concepts and Contexts,” in TRIM, D.J.B. and Mark Charles FISSEL (eds.), *Amphibious Warfare 1000–1700. Commerce, State Formation and European Expansion*, Leiden, Boston and Kohl, Brill, 2011, pp. 1–50.
- TUSHIN, Yu. P., *The Russian Navigation in the Caspian, Asov and Black Seas (the 17th century)* [Тушин, Ю.П., Русское мореплавание на Каспийском, Азовском и Черном морях (XVII век), Москва, Наука, 1978 in Russian].
- WAKEMAN, Frederic E., Jr., *The Great Enterprise. The Manchu Reconstruction of Imperial Order in Seventeenth-century China*, Berkeley and Los Angeles, University of California Press, 1985.
- WATTS, Pauline Moffitt, “Prophecy and Discovery. On the Spiritual Origins of Christopher Columbus’s “Enterprise of the Indies,” *The American Historical Review* Vol. 90, Issue 1, 1985, pp. 73–102.
- WEBER, Benjamin, “Toward a Global Crusade? The Papacy and the Non-Latin World in the Fifteenth Century,” in HOUSLEY, Norman (ed.), *Reconfiguring the Fifteenth-Century Crusade*, London, Palgrave Macmillan, 2017, pp. 11–44.
- VERBRUGGEN, J. F., “The Role of the Cavalry in Medieval Warfare,” translated by Kelly DeVRIES, in DeVRIES Kelly and Clifford J. ROGERS, *The Journal of Medieval Military History* Vol. III, Woodbridge, The Boydell Press, 2005, pp. 46–71.
- VERSHININ, Ye. V., “A Longboat and Koch in Western Siberia in 17th century,” [Вершинин, Е. В., “Дощаник и коч в Западной Сибири (XVII в.)” // Проблемы истории России Вып. 4, Евразийское пограничье, Екатеринбург, Волот, 2001 in Russian] pp. 8–51.
- VLASJEV, G.A., *The Offsprings of Rurik: The Materials for Genealogical Research in 3 Vols., Vol. I, The Chernigov Princes, P. I.*, [Власьев, Г.А., Потомство Рюрика: Материалы для Составления Родословий в 3-х тт., Т. 1, Князя Черниговские, Ч.1., Санкт-Петербург, Т-во Р. Голике и И. Вильборг, 1906 in Russian].
- VVEDENSKY, A.A., *The House of Stroganov in 16th–17th centuries* [Введенский, А.А., Дом Строгановых в XVI–XVII веках, Москва, Соцэжгиз, 1962 in Russian].
- YARKOV, A.P. and S.A. KAPITONOV, “Kuchum and Yermak: “Siberia’s Axial Time” [Ярков А.П. и Капитонов С.А., “Кучум и Ермак: «Осевое Время» Сибири.” // Маслюженко, Д.Н. и Татауров, С.Ф. (ред.), История, Экономика, Культура Тюркско-Татарских Государств Западной Сибири, Курган, Издательство Курганского госуниверситета, 2011, in Russian] pp. 87–90.
- The Yesipov Chronicle*, in *The Full Collection of the Russian Chronicles* V.36, Part 1. [Есиповская Летопись // Полное собрание русских летописей Т. 36, Ч. 1. Москва, Наука, 1987 in Russian] pp. 42–128.
- XAVIER, Ângela Barreto, “The Biggest Enterprise a Christian Prince Ever Had in His Hands: to Conquer and Conserve Territories in the Indian Ocean in the Times of Machiavelli,” *Revista Tempo* V.20, 2014, pp. 1–27.



Armatura equestre realizzata nel 1548 a Norimberga dall'armaiolo Kunz Lochner (1510-1567)
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