
Byzantine Siege Warfare in Theory and Practice

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The years between 960 and 1025 stand as the great age of Byzantine military expansion. Led by the great warrior emperors Nikephoros II Phokas, John I Tzimiskes, and Basil II, the Byzantines embarked on their most ambitious campaigns of conquest since the age of Justinian four centuries before. Guiding the Byzantine offensives in east and west was a carefully conceived strategy aimed at isolating and capturing key towns and fortresses, both to consolidate Byzantine control over the surrounding regions and provide stepping stones for subsequent campaigns. To achieve the conquest of Cilicia, Nikephoros Phokas sent an army to capture Adana in 964, to drive a wedge between his next objectives, Tarsos and Mopsuestia; the fall of both towns in the two-pronged assault of 965 opened the way to northern Syria and the ultimate prize, Antioch, which finally fell into Byzantine hands in 969.¹ Four decades later, Basil II took the same systematic approach in his wars against Bulgaria, targeting one crucial stronghold after another (Pliska and the two Preslavs in the east; Berrhoia, Servia, and Vodena in the south; Vidin in the north), to impose a stranglehold on the Bulgars, whose resistance eventually collapsed in 1018.² Directed as they were at fortresses and walled towns, the Byzantine campaigns in both theatres naturally entailed extensive siege operations.

Siege tactics and technology must therefore be given considerable scope in the study of Byzantine warfare during the age of conquest, but despite the obvious importance of this subject, the methods and equipment employed by the Byzantines when besieging and defending fortified places have not been examined in detail.³ My purpose in this study is to offer a preliminary examination of

¹ For an account of these campaigns, see M. Canard, *Histoire de la dynastie des H'amandides de Jazira et de Syrie*, Publication de la Faculté des Lettres d'Alger, Second Series, 21 (Algiers: Imp. "La Typolitho" et J. Carbonel, 1953), pp. 803–25.

² G. Ostrogorsky, *History of the Byzantine State*, rev. ed. (New Brunswick NJ: Rutgers University Press, 1969), pp. 307–10.

³ This is not true of Byzantine fortifications which have been the subject of individual and collective studies; see C. Foss and D. Winfield, *Byzantine Fortifications. An Introduction* (Praetoria: Sigma Press, 1986), with bibliography.

Byzantine siege warfare based on four sources from the tenth and eleventh centuries. Two of these belong to the branch of Greek military literature known as *poliorketika*, or manuals on siege warfare.⁴ The first is an illustrated treatise on siegecraft attributed to the pseudonymus Hero of Byzantium, composed about the year 950,⁵ while the second is an anonymous, untitled treatise known simply as the *De obsidione toleranda* ("on withstanding sieges"), written most probably in the first half of the tenth century.⁶ As compendia derived from ancient manuals, these two treatises pose problems of modernity and realism all too familiar to Byzantinists, but they can be compared with two other contemporary texts to form a reasonably accurate picture of Byzantine siege warfare. These are two treatises written by soldiers who combined knowledge of military literature with firsthand experience of warfare in their writings, and so provide a realistic, practical perspective on siege tactics and technology. The first is Chapter 65 of the *Taktika* of Nikephoros Ouranos (c. 1010), in which the author outlines the steps for conducting siege operations in northern Syria;⁷ the second is the section on military affairs in the *Strategikon* of Kekavmenos (c. 1075), which gives advice on preparing for a siege and relates several campaigns with lessons for prospective besiegers and defenders.⁸ A review and comparison of these four sources will enable us to see where the theory and practice of Byzantine siege warfare intersect and to identify the methods and devices which the Byzantines employed in their siege operations.

We begin with the treatise on siegecraft attributed to Hero of Byzantium. In the preface, the unknown author states that he has compiled his text mainly from the poliorketic manual of Apollodoros (c. 100 A.D.), to which he has added various items from other sources. At the same time, he declares that he has reiterated the often complex instructions of the classical manuals in a fuller, clearer style to facilitate the reader's understanding of the construction of the siege devices presented. Further to this end, he has included diagrams with each description "in the knowledge that only a well defined drawing can clarify the murky and inexplicable details of construction."⁹ What is striking to observe is that the diagrams, too, have been reworked in an attempt to render them more comprehensible to the beholder. Where the siege devices in the ancient treatise

⁴ The standard survey of classical and Byzantine military writings is by A. Dain, "Les stratèges byzantins," *Travaux et mémoires* 2 (1967), 317-92.

⁵ The text used here is that published by C. Wescher in *Poliorkétique des grecs. Traités théoriques - récits historiques* (Paris, 1867), pp. 197-279, an outdated edition based on sixteenth-century descendants of the principal witness, the eleventh-century *Vaticanus gr.* 1605. A new edition and translation, based on the *Vaticanus*, complete with reproductions of the original diagrams, is in preparation by Dr. Denis Sullivan.

⁶ *Anonymus de obsidione toleranda*, ed. H. van den Berg (Leiden: E. J. Brill, 1947).

⁷ Ed. J.-A. de Foucault, "Douze chapitres inédits de la *Tactique* de Nicéphore Ouranos," *Travaux et mémoires* 5 (1973), 281-312, with French translation. On Ouranos' career and the military historical interest of his *Taktika*, see E. McGeer, "Tradition and Reality in the *Taktika* of Nikephoros Ouranos," *Dumbarton Oaks Papers* 45 (1991), 129-40.

⁸ Ed. G. G. Litavrin, *Sovety i Rasskazy Kekavmena* (Moscow: "Nauka," 1972), pp. 134-88.

⁹ Wescher, pp. 197¹-99¹⁰.

of Apollodoros were illustrated in flat, one-dimensional representations, the Byzantine copies appear in three-dimensional perspective with human figures added for scale.¹⁰ If nothing else, these textual and pictorial elaborations bear witness to the considerable intellectual investment the Byzantines made in their military efforts during the late tenth century – an investment which, in their eyes, was directed to a practical purpose. As the author states in conclusion to his work, commanders who methodically follow his instructions on the assembly and operation of the siege equipment described in the treatise “will capture cities, especially those of Hagar [the Arabs], with ease.”¹¹

The siegecraft presented are the devices other than artillery which attackers might employ during an assault on the walls. The repertoire includes protective barriers to be set round the siege camp, tortoises, battering rams, scaling ladders and nets, towers and observatories, tools such as augers and bores, and bridges. Of these devices the most important and versatile are the tortoises (*chelonai*), which are shown in various shapes and sizes. The more intricate models resemble wheeled wooden sheds with sharply peaked roofs and fronts to deflect away heavy objects hurled against them; these heavy structures could be rolled up to the walls by men protected behind or inside them. Peaked huts made of wicker or other stout materials served as portable tortoises, while another kind of tortoise was built in the shape of a lean-to which, when placed against the wall, covered the men underneath. There were also large wooden tortoises supporting and sheltering a swinging ram operated by men working from a smaller tortoise set behind the ram-bearing tortoise.¹² The author describes and illustrates these tortoises from the ancient manuals, but he also interpolates into this section of his treatise descriptions and diagrams of a new type of tortoise (“recently devised”), called *laisai*. This Slavic term, which entered Byzantine Greek in the late ninth century, is found in a number of sources from the tenth through eleventh centuries and refers to mantlets made of interwoven vines and branches.¹³

The author goes on to describe how the tortoises in their various shapes were put to several uses, of which the most important was protecting the besiegers as they advanced with their equipment and tools up to the walls. Once at the base of the walls and sheltered by the tortoises, men in the role of sappers could begin tunnelling to collapse a section of the walls or using battering rams and digging tools to open a breach. These methods will be discussed in greater detail below, but the author’s emphasis on tunnelling operations is revealing, suggesting, as it does, that in this period the Byzantines did not possess siege artillery powerful enough to shatter the walls of a fortress – an impression confirmed by the other

¹⁰ Demonstrated by D. Sullivan, “The Reception of Hero of Byzantium in the West and *Vaticanus gr. 1605*,” paper read at the XVth Annual Byzantine Studies Conference, Hellenic College, Brookline MA, 8–10 November 1991.

¹¹ Wescher, p. 276^{9–17}.

¹² Illustrated in Wescher, pp. 211, 215, 218, 228, 259; for the authentic diagrams readers will wish to consult D. Sullivan’s forthcoming edition.

¹³ On this term, see McGeer, pp. 135–38.

sources – and they therefore relied on this tunnelling technique to take a place by force of arms.

The second poliorcetic manual, the *De obsidione toleranda*, discusses sieges from the perspective of the besieged. A curious text, unfinished and rife with problematic readings, it combines current advice on defensive tactics with recommendations and historical examples derived from ancient sources (Arrian, Polybios, Josephus). Although published in an excellent critical edition nearly fifty years ago, the *De obsidione* has not attracted a great deal of scholarly attention despite the interest of its first section, which issues a fascinating set of instructions to the commander of a town about to be attacked.¹⁴ Opening with the heartening reassurance that “there is no need for the besieged to give up hope, even if the siege threatens to last a long time” (p. 45, ll. 5–6), the anonymous author proceeds to outline the measures essential to conducting a successful defence, occasionally citing historical precedents to justify his advice. The defenders’ initial preparations must be to forestall the effects of attrition, starvation, treachery, or carelessness. Once the enemy’s intentions have been discerned, the town’s inhabitants must gather foodstuffs sufficient to last six months to a year (for distribution by the bishop and other reputable citizens) and evacuate the elderly, children, and the infirm, to reduce the number of mouths to feed. At the same time, they must devastate the surrounding areas to deny provisions to the attackers. Craftsmen skilled in manufacturing armour, weapons, and other useful equipment must be set to work on these items, while the materials necessary for their construction must be stockpiled within the town;¹⁵ the author notes that architects and builders are especially valuable for their ability to repair walls pounded by battering rams. The cisterns and reservoirs must be filled and the water supply strictly rationed. Criminals, a potential source of treachery, should be rounded up and secured, and a system of patrols and counterpatrols maintained to prevent sentries from betraying the town or falling asleep at their stations.

In preparation for the enemy assault, the defenders are advised to increase the height and strength of the walls, and to dig two or three deep, wide trenches around the town. They should also fill these trenches with water and construct a palisade along the inner lip of each one as further obstacles to the besiegers; sharp spikes and caltrops should then be scattered to the outside of the outermost trench. Trebuchets and arrow-shooting instruments are to be set up along the parapets, along with piles of stones, rocks, beams, and logs, with which to bombard the attackers and their tortoises. It is clear from these measures that the defenders were concerned first and foremost with preventing the enemy from reaching the base of the walls and undertaking tunnelling operations, or else

¹⁴ *De obsidione*, pp. 45¹³–57³.

¹⁵ On this interesting inventory of the town’s craftsmen and the materials needed for their labours, see J. Teall, “Byzantine Urbanism in the Military Handbooks,” in *The Medieval City*, eds. H. A. Miskimin, D. Herlihy, A. L. Udovitch (New Haven: Yale University Press, 1977), pp. 201–05.

from bringing rams to bear on certain parts of the fortifications. Conspicuous by its absence, however, is any fear of enemy artillery. Nowhere in this first, most contemporary section of his treatise does the author express the slightest apprehension about the use or effect of artillery against the walls.

A brief survey of these two poliorcetic manuals reveals little innovation in Byzantine siege tactics and technology during the tenth and eleventh centuries, most notably in the development and use of siege artillery. On the other hand, the methods and devices which they emphasize appear to have been the ones most commonly used during this period, to judge from the two treatises written by veteran soldiers. The most immediate and realistic account of siege tactics is given by Nikephoros Ouranos, a distinguished military and intellectual figure who supervised the eastern frontiers of the Byzantine empire while governor of Antioch (999–1010?). Since Ouranos was also a military writer who distilled his experiences of campaigns in northern Syria into a set of precepts regulating the conduct of a siege from beginning to end, Chapter 65 of his *Taktika* proves to be a very useful source in assessing the balance between the theory and actual conduct of Byzantine siege warfare.

As outlined by Ouranos, a siege campaign required careful planning by the general and the coordination of his forces in a series of operations. The opening stages involved raiding and devastating the outposts and areas around the targeted fortress to destroy its supply of food and bring starvation upon the local populace, forcing them to leave; at the same time, the Byzantine commanders along the frontiers were to prevent all traffic from reaching the fortress once the defenders had sent word of their predicament to their fellow Muslims who would then collect and dispatch money and supplies to their brethren in need. This was not the only source of relief to be cut off, however, since even the local Christian population might be induced “in their love of profit” to sell grain, cheese, and flocks to the Muslim garrison “in return for a high price.”¹⁶

Having arrived at the fortress, the Byzantine besiegers were to set up a secure camp. Before embarking on an assault, however, the commander might first seek to entice the garrison into surrendering by offering generous terms, which, if refused, were to be followed by threats of severe reprisals to those choosing to hold out. The Byzantine commander should also threaten all the Armenian and Syriac Christians, as well as apostates to Islam (*magaritai*), inside the walls with execution unless they deserted to the attackers before the fortress fell. Even if unsuccessful, the alternating offers of mercy and threats of retribution were a useful tool “since it causes dissension and disagreement among them, some favouring this, others that, which is of great benefit to us.”¹⁷

Operations against the fortress began with the construction of “the

¹⁶ De Foucault, p. 297. On the shifting allegiances between the various populations along the eastern fringes of the Byzantine empire, see G. Dagron, “Minorités ethniques et religieuses dans l’Orient byzantin à la fin du Xe et au XIe siècle: L’immigration syrienne,” *Travaux et mémoires* 6 (1976), 177–216.

¹⁷ De Foucault, p. 299.

implements used in siege warfare, *laisai* made from vine-stalks or from branches of willow or mulberry trees" (p. 299). We have seen that these "recently devised" mantlets were added to the list of tortoises in Hero of Byzantium; Ouranos' instructions on their assembly conform closely with their depiction in the poliorcetic manual. The *laisai* were to be constructed in the shape of a house, with steep roofs, two entrances, and plaited screens over the front as protection against enemy projectiles. Light enough to be easily transportable, and spacious enough for fifteen to twenty men, these mantlets were to be fixed at a distance of ten or twenty yards from the walls to shelter teams of men as they took turns fighting and resting through the day. Although Ouranos refers to trebuchets, these appear to have been used primarily to hurl stones at people rather than walls and were employed in unison with archers and slingers to keep up a shower of missiles, which would force the defenders away from the ramparts. To open a breach in the fortifications, the besiegers pounded the walls with rams and sledgehammers, but the method which Ouranos deems most effective of all is tunnelling, an operation which he describes in detail.¹⁸

Here again, the instructions given by Ouranos are very similar to those in Hero of Byzantium. Once a suitable place had been located, sappers working from beneath the *laisai* began digging a tunnel down to the foundations of the wall. As they progressed, they inserted a series of plaited mats, supported by wooden posts, to hold the earth over their heads; once at the foundations they prised the stones loose and replaced them with thick beams to keep the wall from falling upon them. When they had hollowed out the foundations, they filled the cavity with dry wood and ignited it so that the fire would consume the wooden support beams and cause the section of the wall above to collapse.

Ouranos' instructions combine with those in Hero of Byzantium to show that tunnelling to undermine the foundations was the tactic favoured by the Byzantines, and the historian Leo the Deacon records its use by Nikephoros Phokas' army to capture the mighty fortress of Candia during the final conquest of Crete in 961.¹⁹ Effective as it was, however, tunnelling was a laborious, time-consuming process. In recognition of this factor, Ouranos advises the commander to gauge the progress of the siege and offer the garrison the choice of departing free with their possessions if they surrender the fortress voluntarily, or enslavement if they continue to resist. The impression conveyed by his advice is that most sieges were endurance contests in which attrition and the human element – morale, loyalty, determination – loomed ever larger as the siege wore on.

The human factor figures even more prominently in Kekavmenos' discussion of siege tactics. Like the author of the *De obsidione*, Kekavmenos directed his counsels to the defenders, but he saw siege campaigns (and war generally) as a contest more of wits than of tactics and technology. In one passage he echoes the

¹⁸ De Foucault, pp. 299–301.

¹⁹ *Leonis diaconi Caloensis historiae libri decem*, ed. C. B. Hase (Bonn, 1828), pp. 20–21.

recommendations of the *De obsidione* that the walls be repaired and strengthened, that trebuchets and projectiles be set out along the parapets, and that ditches festooned with traps be dug around the fortress; he also advises digging countertunnels to intercept enemy sappers and gives instructions on how to increase the height of the walls in case the attackers attempt to raise an earthen mound by which to surmount the fortifications.²⁰ But the handful of episodes which he relates – drawn mainly from the western frontiers of the empire – record tricks and ruses devised by attackers to gain entry to a fortress or lure the commander out into an ambush, and so emphasize the role of deception, treachery, or carelessness over force of arms. In one instance, an enemy feigning friendship sent mules loaded with grain to the unsuspecting commander of an impregnable fortress; once the mule train had passed through the gates, warriors disguised as drivers sprang out and captured the commander and his fortress with him.²¹ In another tale, Arab pirates claiming to be traders set up their stations immediately beside the walls of a fortress and bided their time until a rainstorm sent everyone, including most of the sentries, inside their homes, whereupon the Arabs made their way over the walls and captured the town.²²

It remains now to offer some observations by way of conclusion. This study has concentrated on two objectives: the first to see the relation of theory to practice in the Byzantine treatises on siege warfare, the second to identify the methods which the Byzantines employed in siege operations. It has been seen that the theoretical manuals present a number of methods and devices which, as the soldier's treatises show, were applied in practice; yet where theory and practice intersect is in only the simplest level of technology and tactics. In theory, the repertoire of siegecraft was quite remarkable, but active soldiers made a clear distinction between the realm of ideas and current realities. As Ouranos, steeped in the poliorcetic manuals, declares, "the men of old, in their conduct of siege warfare, constructed many devices such as rams, wooden towers, scaling ladders with various features, as well as tortoises and all kinds of other objects which our generation can hardly imagine . . . many and varied are the means which the men of old contrived forconducting sieges, but I have set down only the methods which our generation currently employs"²³ – which were in fact quite elementary. The sources indicate that Byzantine attackers relied primarily on attrition, ruses, and tunnelling operations to capture a locale; and it is the simplicity of their siege technology – especially in artillery – and the emphasis on ruses and stratagems that emerge from the four sources studied here. The impression remains that in the conduct of siege warfare, as in other military activities, the Byzantines were keener to exploit human weakness than technical devices.

²⁰ Litavrin, pp. 178¹²–80²⁰.

²¹ Litavrin, pp. 168²⁷–70²¹.

²² Litavrin, pp. 184¹⁷–86¹⁶.

²³ De Foucault, p. 303.