

ABBÈS ZOUACHE

FRENCH NATIONAL CENTRE FOR SCIENTIFIC RESEARCH

## Western vs. Eastern Way of War in the Late Medieval Near East: An Unsuitable Paradigm: A Review Essay of David Nicolle's *Late Mamlūk Military Equipment*\*

The last half century has seen significant reorientations in military history. For a long time, the study of war was the prerogative of military officers, who were dealing primarily with strategy and tactic. After World War Two, many historians reconciled with the history of war and paid greater attention to the interaction of war with societies, economics, and politics.<sup>1</sup> This "New Military History" allowed the history of war to become again a well-taught academic discipline in universities, mainly in the Anglo-Saxon world.<sup>2</sup> In recent years, this "New Military History" has been criticized by military historians who asserted that its practitioners wrote "a history without men" and excluded what is the essence of war: combat.<sup>3</sup> The study of war knows its "cultural turn," which is largely characterized by the adoption of an anthropological bias.<sup>4</sup>

These historiographical changes mainly affect researchers who deal with the history of warfare in the twentieth century. In particular, the recent revival of interest in the First World War among historians, as well as among the public, to a large extent resulted in a substantial renewal of its themes. Military occupation, war memories, wartime body, violence of war, extreme violence, and representation of the enemies are now common themes for the historians studying the First World War.<sup>5</sup> By contrast, military historians of the medieval Near East have been

---

\* David Nicolle, *Late Mamlūk Military Equipment*, Travaux et Études de la Mission Archéologique Syro-Française Citadelle de Damas (1999–2006), volume III (Damascus: Presses de l'IFPO, 2011). Pp. 396.

<sup>1</sup> Peter Paret, "The New Military History," *Parameters* 31 (1991): 11–18; idem, "The History of War and the New Military History," in *Understanding War: Essays on Clausewitz and the History of Military Power*, ed. P. Paret (Princeton, 1992): 209–26; John Whiteclay Chambers, "The New Military History: Myth and Reality," *The Journal of Military History* 55 (1991): 395–406.

<sup>2</sup> *Military History and the Military Profession*, ed. David A. Charters, M. Milner, and J. B. Wilson (Westport, 1992), 39.

<sup>3</sup> John A. Lynn, "The Embattled Future of Military History," *Journal of Military History* 61, no. 4 (October 1997): 777–89; Abbès Zouache, "Introduction," in *La guerre dans le monde arabo-musulman: Perspectives anthropologiques*, *Annales Islamologiques* 43, ed. A. Zouache (Cairo, 2010), 1–30.

<sup>4</sup> See Patrick Porter, "Good Anthropology, Bad History: The Cultural Turn in Studying War," *Parameters* 37, no. 2 (2007): 45–58.

<sup>5</sup> Jay M. Winter, "Catastrophe and Culture: Recent Trends in the Historiography of the First World War," *The Journal of Modern History* 64 (Sept. 1992): 525–32; Antoine Prost and Jay M. Winter, *Penser la Grande Guerre: Un essai d'historiographie* (Paris, 2004), available in English transla-



quite marginally affected by this reorientation, despite some efforts being made—for example—to decipher the dynamics of violence of war.<sup>6</sup> In many respects, military history of the medieval Islamic Near East is still an “operational history” dealing with strategy and tactics.

So it is not surprising that a few of its specialists have examined the thesis popularized by Victor Davis Hanson that a “Western way of war” must be distinguished from an Eastern one.<sup>7</sup> According to him, the Western way of war—or more properly the Western culture of war—could be purposely characterized by seeking battle to gain a rapid decision to war, emphasis on shock warfare, face to face combat, and a singular lethality, whereas the Eastern one is characterized by deception, a penchant for indirect combat, an avoidance of close-in warfare, and a preference for standoff weaponry and missile oriented tactics.<sup>8</sup> Of course, Hanson’s thesis primitively referred to the mode of fighting employed by the ancient Greeks. But then he identified the elements which enabled him to show the continuity of these opposite ways of war. As for medieval warfare, he opposed the heavy and close-quarter warhorse of the Christian armies to the light cavalry of the Muslims. According to him and like-minded military historians, the “Muslim way of war,” which was essentially an Eastern one, was conducted with the aim of victory in bloodless battle, given the predominance of light cavalry, mounted sorties, and ambushes, and the limited role of infantry.<sup>9</sup>

---

tion as *The Great War in History: Debates and Controversies, 1914 to the Present* (New York, 2005). See also Jones Heather, “As the Centenary Approaches: the Regeneration of First World War Historiography,” *Historical Journal* 56 (2013): 857–78.

<sup>6</sup> Matthew Strickland, “Slaughter, Slavery or Ransom: The Impact of the Conquest on Conduct in Warfare,” in *England in the Eleventh Century*, ed. Carola Hicks (Stamford, 1992), 41–59; idem, “Killing or Clemency? Ransom, Chivalry and Changing Attitudes to Defeated Opponents in Britain and Northern-France, 7–12th Centuries,” in *Krieg im Mittelalter*, ed. Hans-Henning Kortum (Stuttgart, 2010): 93–121; idem, “The vanquished body: some conclusions and comparisons,” in *El cuerpo derrotado: como trataban musulmanes y cristianos a los enemigos vencidos (Península Iberica, ss. VIII-III)* (Madrid, 2008): 531–70; David Hay, “Gender Bias and Religious Intolerance in Accounts of ‘Massacres’ of the First Crusade,” in *Tolerance and Intolerance: Social Conflict in the Age of the Crusades*, ed. Michael Gervers and James M. Powell (New York, 2001): 3–10; Abbès Zouache, “Têtes en guerre au Proche-Orient: Mutilations et décapitations (Ve–Vie–XIe–XIIe siècles),” *Annales Islamologiques* 43 (2009): 195–244.

<sup>7</sup> A notable exception is John France, “Close Order and Close Quarter: The Culture of Combat in the West,” *The International History Review* 27, no. 3 (Sept. 2005): 498–517.

<sup>8</sup> Victor David Hanson, *The Western Way of War: Infantry Battle in Classical Greece* (New York, 1989).

<sup>9</sup> Victor David Hanson, *Why the West Won: Carnage and Culture: Landmark Battles in the Rise of Western Power* (2nd ed., 2007), 147–48. Hanson refers to John France, *Western Warfare in the Age of the Crusades* (London, 1999), 212–13. Yet John France rejected Hanson’s thesis in the article cited above (“Close Order and Close Quarter: The Culture of Combat in the West,” 501).

Several military historians have shown the harmlessness of Hanson's thesis, which relies on overgeneralizations and insufficient contextualization, and is premised upon the idea that there has been a long cultural gap between East and West.<sup>10</sup> Furthermore, it is not hard to link Hanson's thesis with the old and widely held notion spread by nineteenth-century Orientalists of the superiority of Western civilization over Eastern civilization. Before and sometimes after World War Two, works of military historians were more or less deeply marked by the certainty of the strategic, tactical, and technical superiority of Western armies over those of their Oriental enemies.<sup>11</sup>

Yet leading military historians like John Keegan defended the idea that Oriental warfare was "different and apart from European warfare." According to him, the medieval cavalry charge practiced in Europe as well as by the Crusaders in Syria was no more than "a continuation in an elaborated form of the code of the phalanx," while their Muslim opponents systematically sought to fight at distance.<sup>12</sup> It is therefore not surprising that Hanson's thesis has been a success among the historians as well as commentators.<sup>13</sup> So the publication of David Nicolle's important book is timely, as he shows how complex the dramaturgy of war was, mainly in the medieval Near East, where from the end of the eleventh century different nations (mainly Arabs, Greeks, Armenians, Turks, Franks, and Mongols) fought against and with the others and formed a kind of cultural matrix of warfare. The Mamluk armies were a product of this cultural matrix as they combined the different traditions of warfare to fight in a way that seemed to be the most effective to achieve victory.

---

<sup>10</sup> For example: John A. Lynn, *Battle: a History of Combat and Culture* (Boulder, CO, 2003); idem, "The Evolution of Army Style in the Modern West, 800–2000," *The International History Review* 18, no. 3 (1996): 505–45; John France, "Close Order and Close Quarter: The Culture of Combat in the West," *passim*; Steven J. Willett, "History from the Clouds: Review of *Carnage and Culture: Landmarks Battles in the Rise of Western Power* by Victor David Hanson," *Arion*, third series, vol. 10, no. 1 (Spring–Summer, 2002): 157–78.

<sup>11</sup> Lynn White, Jr., "The Crusades and the Technological Thrust of the West," in *War, Technology and Society in the Middle East*, ed. V. J. Parry (London, 1975), 97–112. See Abbès Zouache, *Armées et combats en Syrie de 491/1098 à 569/1174: Analyse comparée des chroniques médiévales latines et arabes* (Damascus, 2008), 42–43; Patrick Porter, "Good Anthropology, Bad History: The Cultural Turn in Studying War," 48; idem, *Military Orientalism: Eastern War through Western Eyes* (New York, 2009).

<sup>12</sup> John Keegan, *A History of Warfare* (New York, 2004), 387 ff.; See Patrick Porter, "Good Anthropology, Bad History: The Cultural Turn in Studying War," 48.

<sup>13</sup> See for example Geoffrey Parker, "Preface," *The Cambridge Illustrated History of Warfare: The Triumph of the West*, ed. Geoffrey Parker (Cambridge, 2008), 7; Jared Jeremy Black, *War: A Short History* (London and New York, 2009), especially 164–65.



## An Exceptional Archeological Discovery

First of all, we should be happy to see this important book published, which was highly anticipated by all the specialists of medieval warfare. Indeed, many Islamic arms and armor (and more generally military material) kept in museums—particularly in the Metropolitan Museum of Art<sup>14</sup>—or in private collections (like the Furuṣiyya Art Foundation and the Nasser D. Khalili Collection) can be regularly admired by the public or in splendid (and expensive) exhibition catalogues,<sup>15</sup> but most of the time it is very difficult (and often impossible) to know where they come from and the archeological context in which they were discovered. Military objects of Islamic origin found during excavations in the Near East and whose stratigraphic context is known are quite rare, and even more so those which have been published.<sup>16</sup> As far as I know, the military material published by David Nicolle is unparalleled, except perhaps by the artefacts of the Mamluk period excavated at Qal‘at Raḥbah (Syria) during the seventies by a Syrian-French mission and during the eighties by Syrian archaeologists.<sup>17</sup> Six years ago, I began to catalogue the pieces stored in the Deir ez-Zor Museum (Syria): obviously other pieces had been disseminated in Damascus and in Qatar.<sup>18</sup> Its publication is ur-

<sup>14</sup> See the publications from the Metropolitan Museum of Art, especially *The Metropolitan Museum of Art Bulletin* (since 1905); *Metropolitan Museum Journal* (since 1968); Metropolitan Museum Art Series. Recently: Stuart W. Pyhrr, Donald J. La Rocca, and Morihiko Ogawa, *Arms and Armor: Notable Acquisitions 1991–2002* (New York, 2003). See also the Gallery page at: <http://www.metmuseum.org/about-the-museum/museum-departments/curatorial-departments/arms-and-armor> (last consultation 28 December 2013).

<sup>15</sup> *Weapons of the Islamic World: Swords and Armour: Exhibition held at the Islamic Gallery in King Faisal Foundation Center, Riyadh, 1991* (Riyadh, 1991); David Alexander, *The Arts of War: Arms and Armour of the 7th to 19th Centuries: The Nasser D. Khalili Collection of Islamic Art*, vol. XXI (London, 1992); *The Art of the Muslim Knight: the Furuṣiyya Art Foundation Collection*, ed. Bashir Mohamed (Paris, 2008).

<sup>16</sup> Abbès Zouache, “Les armes,” in *Ṣadr, une forteresse de Saladin au Sināi: Histoire et archéologie*, ed. Jean-Michel Mouton (Paris, 2010), 35–69; Kate Raphael and Yotam Tepper, “The Archeological Evidence from the Mamluk Siege of Arsūf,” *Mamlūk Studies Review* 9, no. 1 (2005): 85–100. Concerning Crusader artefacts, see Adrian J. Boas, *Crusader Archaeology: The Material Culture of the Latin East* (New York, 2005), 168–77.

<sup>17</sup> The site of Raḥbah-Mayādīn was excavated from 1976 to 1980 by a French-Syrian team supervised by Kassem Toueir (DGAM, Syria) and Thierry Bianquis (head of the French Institute for Arabic Studies in Damascus). Concerning the site, see Marie-Odile Rousset, “Evolution of the Settlement in Mayādīn (Syria),” in *Continuity and Change in Northern Mesopotamia from the Hellenistic to the Early Islamic Period*, ed. K. Barti and S. R. Hauser (Berlin, 1996), 185–94; idem, “La ville de Raḥba-Mayādīn et sa région, IXe-XIVe siècle,” *Bulletin d’études orientales* 52 (2000): 243–61.

<sup>18</sup> David Nicolle, “Helmets or Hard-Hats? Some Wood-Lined Headgear from Mamlūk Syria,” in *La guerre dans le Proche-Orient medieval*, vol. II, *Histoire, Archéologie, Anthropologie*, ed. Mathieu Eychenne, Stéphane Pradines, and Abbès Zouache (Cairo, forthcoming).

gent, especially if we consider the current situation in Syria and the danger that the most remarkable pieces may disappear in one way or other.

Fortunately, the Mamluk military material published by David Nicolle cannot meet the same fate. This book inaugurates a series of seven volumes dedicated to the excavations carried out from October 1999 to December 2006 in the Citadel of Damascus by a Syrian-French team directed by Sophie Berthier, Aḥmad Taraqji, and Edmond Al-Ejji. What is published here is a part of the material found during the campaigns of 2001 and 2002: essentially Mamluk material discovered in the area at the eastern end of a building in the southwest of the citadel, plus some objects uncovered in other sectors of the excavation. The discovery of the material in a room located in the southwestern part of the building was a nice surprise for the archaeologists. It comes from an old light-well that had been covered by a new floor, which allowed it to be preserved. Other objects compacted into successive beaten earth floors were found in the same room.<sup>19</sup>

*Late Mamlūk Military Equipment*, which is well illustrated, is not only a book in which exceptional archaeological items are described. It is also a brilliant example of how such items can be used to deepen the studies that are made on the military history of the Near East and elsewhere. Of course, one could regret its quite “operational” bias; but Nicolle’s erudition provides the means to broaden the thought and adopt a cultural and anthropological approach to those who wish to do so.

The book is divided into nine chapters which are all preceded by a more or less extensive introduction. The first chapter (pp. 23–40) is a long and useful introduction about the military-historical background and context. Chapters two through five (pp. 41–134) are dedicated to the different forms of armor, for men as well as for horses. Then, an extensive chapter about archery (pp. 135–94), including information about crossbows, arrow shafts, crossbow bolt shafts, arrowheads, and pellet bow or blowpipe clay pellets. As powder horns and bullets have also been found in the Citadel of Damascus, chapter seven (pp. 195–238) deals with firearms, whereas the final chapter is devoted to daggers and other miscellaneous items.

Beyond all the qualities of the text, some flaws can be found. Indeed, the erudition of David Nicolle is so great that he succeeded in going beyond the expected skill of a single author, but this erudition regularly takes precedence over the artefacts, which are too often forgotten. Moreover, the book is not so easy to read: Nicolle first gives (sometimes at length) the state of knowledge about the concerned weapon, referring or not to artefacts, then these artefacts are more precisely described in tables which are scattered throughout the book while illustrations (drawings and photographs) are relegated to the end of the book (pp. 259–360). So the reader must multiply readings from the text to the tables, then

<sup>19</sup> Sophie Berthier, “Foreword,” in Nicolle, *Late Mamlūk Military Equipment*, 18–21.



from the tables to the illustrations, and vice-versa, without being able to use an index, since none can be found in the book.<sup>20</sup> Of course, the essential element of the work is elsewhere: in Nicolle's ability to use artefacts which are not always easy to interpret to make clear the complex military history of the Near East at the end of the Middle Ages. Moreover, Nicolle is in most cases particularly scrupulous and proceeds by small steps, avoiding hasty statements and generalizations.

### Infantry and Firearms in the Late Mamluk Army

In a sense, Nicolle's scrupulous approach is diametrically opposed to that of those who defend the idea of two opposite ways of war. He shows how complex the military machine of the Mamluks was. Indeed, the Mamluks inherited from various military traditions and were strongly influenced by their predecessors in Syria and Egypt. When in the mid-thirteenth century the Mamluk Sultanate was established, it had already been a long time ago that a military regime led by a dominant military class controlled by Turkish elements had been founded. New military institutions appeared under the Zangids, which were developed by the Ayyubids and set to develop in the Mamluk period.<sup>21</sup> The continuity between each of these dynasties can be observed even if, as R. Stephen Humphreys maintained, the specificity of each of them should not be denied.<sup>22</sup> The new rulers relied on composites and ethnically mixed armies in which infantry played a much more important role than is generally believed,<sup>23</sup> especially because of the central role of siege warfare,<sup>24</sup> which is not ignored in the narrative sources or in the

<sup>20</sup> Also, a glossary of technical terms would have been very useful.

<sup>21</sup> Anne-Marie Eddé, "Bilād al-Shām, from the Fatimid conquest to the fall of the Ayyubids (359–658/970–1260)," in *New Cambridge History of Islam*, vol. II, *The Western Islamic World, Eleventh to Eighteenth Centuries*, ed. Maribel Fierro (Cambridge, 2010), 191.

<sup>22</sup> R. Stephen Humphreys, "The Emergence of the Mamluk Army," *Studia Islamica* 45 (1977): 67–99, and 46 (1977): 147–82. As is well known, David Ayalon favored the idea of the identity of the Ayyubid and the Mamluk military systems. See for example David Ayalon, "From Ayyūbids to Mamlūks," *Revue des études islamiques* 49, no. 1 (1981): 43–57.

<sup>23</sup> But as Reuven Amitai points out, we lack a systematic study of infantry in the Mamluk Sultanate and to a larger extent in the medieval Middle East; see "Foot Soldiers, Militiamen and Volunteers in the Early Mamluk Army," in *Texts, Documents and Artefacts: Islamic Studies in Honor of D. S. Richards*, ed. Chase F. Robinson (Leiden, 2003), 233.

<sup>24</sup> *Late Mamlūk Military Equipment*, 25. Military historians of the Middle East have not pursued the study of Mamluk siege warfare. But see David Ayalon, *Gunpowder and Firearms in the Mamluk Kingdom: A Challenge to a Medieval Society* (New York, 2013); Christopher Marshall, *Warfare in the Latin East, 1192–1291* (Cambridge, 1992), 210–55; Paul E. Chevedden, "Black Camels and Blazing Bolts: the Bolt-Projecting Trebuchet in the Mamluk Army," *MSR* 8, no. 1 (2004): 227–77; Kate Raphael, *Muslim Fortresses in the Levant: Between Crusaders and Mongols* (New York, 2011),

*furūsīyah* treatises,<sup>25</sup> many of which were written in Ayyubid or Mamluk times.<sup>26</sup> It seems that infantry was locally recruited, especially in Syria, where the relief and the number of strongholds had required the creation of specialized units in siege warfare. But infantry was also part of the standing armies. At the end of the Mamluk Sultanate, the need for infantry further increased.<sup>27</sup> Infantry units carrying guns probably appeared in the Mamluk army during the reign of Sultan Qāytbāy (r. 1468–96), who sent soldiers using *bunduq al-raṣāṣ* (rifles?) against the Ottomans.<sup>28</sup> As Robert Irwin has recently shown, there is abundant evidence in the sources of an early adoption of firearms in the Mamluk Sultanate, and we must reconsider Ayalon's point of view about the inability of the military caste to accept the need to adopt firearms.<sup>29</sup> So it should not be surprising that powder horns and bullets have been found in the Citadel of Damascus. Of course, it is not so easy to interpret these artefacts, especially because the kind of "hand gun" used by one man is not clear at all. This uncertainty explains Nicolle's caution, especially about the bullets. Indeed, it is difficult to state if they were cast at the end of the Mamluk sultanate or under the Ottomans.

In any event, what cannot be argued is that the late Mamluks created new infantry units equipped with firearms, regardless of whether they were motivated by a difficulty to recruit and train a sufficient number of mamluks or their willingness to adapt themselves to changing conditions of warfare. Indeed, their adoption of firearms—not only for siege warfare—may be a result of the Otto-

---

especially chapter 2, "Mongolian Siege Warfare and the Defense of Mamluk Fortresses," 52–80; idem, "The Archaeological Evidence from the Mamluk Siege of Arsūf," *MSR* 9, no. 1 (2005): 85–100; Robert Irwin, "Gunpowder and Firearms in the Mamluk Sultanate Reconsidered," in *The Mamluks in Egyptian and Syrian Politics and Society*, ed. M. Winter and A. Levanoni (Leiden, 2004), 117–39. For earlier periods, see Zouache, *Armées et combats*, 42–43.

<sup>25</sup> See for example al-Harawī (d. 611/1215), *Al-Tadhkirah al-Harawīyah*, ed. J. Sourdel-Thomine, *Bulletin d'études orientales* 17 (1962), Cap. XXI, especially 247–48; Urunbughā al-Zaradhkāsh, "Al-Anīq fī-al-Manājiq," Ayasofya Library MS 3469 and ed. Iḥsān Hindī (Aleppo, 1985). This last treatise, written for Manglī Bughā al-Shamsī (d. 836/1432), deals with siege engines.

<sup>26</sup> On the *furūsīyah* treatises, see Shihab al-Sarraf, "Mamluk Furūsīyah Literature and Its Antecedents," *MSR* 8, no. 1 (2004): 141–200.

<sup>27</sup> Miura Toru, "Urban Society in Damascus as the Mamluk Era Was Ending," *MSR* 10, no. 1 (2006): 170, who explains this increase firstly by the weakening of the Mamluk army, which lacked mamluks, and secondly by the fact that the use of gun power was becoming more and more necessary. Unsurprisingly, this article is unknown to David Nicolle, who delivered the volume to IFPO back in 2007.

<sup>28</sup> Ibn Iyās, *Badā'i' al-Zuhūr fī Waqā'i' al-Duhūr*, ed. M. Muṣṭafā (Wiesbaden, 1972), 3:269. See Albrecht Fuess, "Mamluk Politics," in *Ubi Sumus? Quo Vademus? Mamluk Studies—State of the Art* (Göttingen, 2013), 110–11.

<sup>29</sup> Robert Irwin, "Gunpowder and Firearms in the Mamlūk Sultanate Reconsidered," in *The Mamlūks in Egyptian and Syrian Politics and Society*, ed. Winter and Levanoni, 117–39.



mans' technological and tactical challenge. The Ottomans adopted firearms artillery in the latter part of the fourteenth century, and they established a separate artillery corps in the sultan's army in the early fifteenth century, so before the Europeans acted in the same way.<sup>30</sup> The Ottoman infantry then started to regularly use "hand-held" firearms like matchlock arquebuses, which are called *tüfed* in the Ottoman sources from the reign of Murad II (r. 1421–44, 1446–51) onward.<sup>31</sup>

### Heavy Cavalry, Charge and Close Combat

Like the Ottomans, the Mamluks were neither culturally averse to firearms nor reluctant to give a substantive role to infantrymen in warfare. But the bulk of their armies was always made of mounted warriors—like in any army of the time. Nevertheless, it is necessary to remind ourselves that their cavalry was not as uniform as it tends to be described.<sup>32</sup> In particular, they enrolled nomadic contingents as auxiliaries, who were equipped and fought according to their traditions.

On the battlefield, the major role was played by heavy armored cavalry, a role which is particularly relevant in the context of the artifacts found in the Citadel of Damascus.<sup>33</sup> It is necessary to remember that this was not a novelty introduced by the Mamluks. As Nicolle rightly points out,<sup>34</sup> the history of heavily armored cavalry in the Near East is long and extensive. Before the Mamluks, the Zangids and the Ayyubids had already based their battle tactics on the heavy cavalry that is occasionally described in detail by Arabic and Latin chroniclers. Thus, according to William of Tyre, Shīrkūh's army, which seems to have severely defeated the Frankish army of Amalric of Jerusalem in al-Bābayn (Middle-Egypt) in March 1167, counted twelve thousand Turks from whom nine thousand were strongly armored and wore helmets, while the other three thousand used only bows and arrows.<sup>35</sup> Latin chroniclers are not the only authors who clearly distinguished

<sup>30</sup> Gabor Agoston, "Ottoman Warfare in Europe 1453–1826," in *European Warfare, 1453–1815*, ed. J. Black (London, 1999), 118–44; idem, *Guns for the Sultan: Military Power and the Weapons Industry in the Ottoman Empire* (New York, 2005); idem, "Ottoman Military Organization (up to 1800)," in *The Encyclopedia of War*, ed. Gordon Martel (Malden, MA, 2012). Concerning the Ottomans' technological and tactical skills, see also Rhoads Murphey, *Ottoman Warfare 1500–1700* (London, 1989), especially 106–7.

<sup>31</sup> They probably became widely used under Mehmed II.

<sup>32</sup> See, for example, Keegan, *A History of Warfare*.

<sup>33</sup> Nicolle, *Late Mamlūk Military Equipment*, 27.

<sup>34</sup> *Ibid.*, 27–28.

<sup>35</sup> William of Tyre, *Chronicon*, ed. J. B. C. Huygens (Turnhout, 1986), 2:898: "Siracunus enim Turcorum habebat duodecim milia, ex quibus novem milia loriceis galeisque tegebantur, reliqua tria milia arcubus tantum et sagittis utebantur." It is obviously impossible to know if these figures are accurate. See also the description of Saladin's army by the same author, *Chronicon*, 2:991: "ex quibus erant octo milia egregiorum, quos ipsi lingua sua Toassin vocant, reliqua vero decem

between Muslim heavy and light cavalry. Many examples can also be found in Arabic sources, where one word or another is used to designate fully equipped heavy cavalry. For example, al-Ṭarsūsī, a contemporary of William of Tyre, described the activity on the battlefield of the *abtāl* and the *shujʿān*, who were probably heavy-mounted warriors to whom different functions were attributed.<sup>36</sup>

On the battlefield, the main intention was not systematically, as Keegan thought, “to stand and receive” the enemy’s charge.<sup>37</sup> Mamluk cavalry was highly trained to face different types of charge and to charge itself, as it is described in the Mamluk military treatises like the *Kitāb al-Furūsīyah wa-al-Manāṣīb al-Ḥarbīyah* of Najm al-Dīn al-Rammāḥ (d. 695/1296):

The master (*ustādh*) Najm al-Dīn Ḥasan al-Rammāḥ said about the science (*ilm*) of *furūsīyah*, the horsemen (*fursān*) duel and the meeting with the adversaries: “When you meet your opponent then face him by pushing him. Go on him with strength and power, don’t move headlong towards him. Fight him, pursue him, challenge him, force him outwards and inwards [of the *maydān*]. If he stimulates his horse and comes toward you, then don’t throw your spear at him. If he charges you with his spear in the style of the Arabs of the Hijaz, you must counter him by using the *taqwīm*. If he charges with his spear in the style of the Rūm, then you must counter him only by using the *taṣrīḥ*. If you counter these two types of spear at-

---

et octo milia erant gregariorum, quos ipsi appellant Caragolam.” It seems that the eight thousand *ṭawāshī* were heavy cavalry warriors who had a full set of arms and armor. According to Hamilton A. R. Gibb, the Caragolam were “ordinary troops,” maybe non-mamluk horsemen or mamluks of inferior ranks. Compare to the description of Saladin’s army by al-Qāḍī al-Fāḍil in al-Maqrīzī, *Al-Mawāʿiẓ wa-al-Iʿtibār fī Dhikr al-Khiṭaṭ wa-al-Āthār*, 1:139, where the *ṭawāshī* are described as highly paid troops. See Hamilton A. R. Gibb, “The Armies of Saladin,” *Cahiers d’histoire égyptienne* (1951), reprinted in his *Studies on the Civilization of Islam* (Boston, 1962), 87; Yaacov Lev, *Saladin in Egypt* (Leiden, 1999), 143–44, 148. A Qarāghulāmīyah corps of the Mamluk army is mentioned by Baybars al-Manṣūrī, *Zubdat al-Fikrah fī Tārīkh al-Hijrah*, ed. Donald S. Richards (Beirut, 1998), 261. According to Peter Thorau, *The Lion of Egypt: Sultan Baybars I and the Near East in the Thirteenth Century* (London, 1992), 141, they were probably free cavalrymen.

<sup>36</sup> Al-Ṭarsūsī (mid-seventh/twelfth century), *Tabṣirat Arbāb al-Lubāb*, ed. Karen Sader (Beirut, 1998), 225: “wal-takun al-khayyālah wa-al-abṭāl min warāʾihim wuqūfan muzāḥū al-ʿillah, wa-al-ḥumāh wa-al-shujʿān min khalfihim yantazirūn al-ḥamlah.” See Zouache, *Armées et combats*, 399–400; David Nicolle, “Medieval Warfare: the Unfriendly Interface,” *Journal of Military History* 63 (1999): 592–93, who saw the *abtāl* as “defensive cavalry” and the *shujʿān* as “offensive cavalry.”

<sup>37</sup> Keegan, *A History of Warfare*, 294.

tacks, then your adversary will give up: you will have shown him what you are able to do.”<sup>38</sup>

This quote describes one of the several exercises the mamluks were subjected to. They were collectively and individually trained on horse and on foot to become skilled fighters. It is, of course, often pointed out that as they were bought as slaves from the Turkish steppe, they were trained from boyhood primarily to become elite cavalry archers fighting as light skirmishers as well as operating in line formations laying down a heavy barrage of fire. In medieval as well as in contemporary times, Westerners were properly (and rightly) fascinated by their ability to shoot arrows while riding from horseback, during or not during the charge. This is hardly surprising as the main difference between them and the Western *milites* was their archery excellence while riding. But their training was much more complete and they were also trained to be master fencers and lancers. The *furūsīyah* exercises were also made up of polo games, lance and javelin games, wielding the sword, fencing, and wielding the mace.<sup>39</sup> The mace was an essential weapon during close combat, and some military treatises are devoted to this weapon.<sup>40</sup> Some *furūsīyah* manuals showed well-known paintings of horsemen using lance, bow, swords, or maces. For example, illustrated manuscripts of the *Nihāyat al-Sū'l wa-al-Umnīyah fī Ta'līm al-Furūsīyah* of Muḥammad al-Aqṣarā'ī al-Ḥanafī (d. 749/1348) contain around twenty miniatures which depict mounted lancers, swordsmen, and archers executing different exercises.<sup>41</sup> Some Mamluk military manuals are also illustrated with practice diagrams which describe cavalry maneuvers. These geometric figures are not so easy to interpret and the text

<sup>38</sup> Najm al-Dīn al-Rammāh (d. 695/1296), *Kitāb al-Furūsīyah wa-al-Manāṣīb al-Ḥarbīyah*, ed. Fārūq Aslīm (Abu Dhabi, 2007), 41–42.

<sup>39</sup> On the *furūsīyah* exercises, see Hassanein Rabie, “The Training of the Mamlūk Fāris,” in *War, Society and Technology in the Middle East*, ed. Parry, 153–63; David Ayalon, “Notes on the Furusiya Exercises and Games in the Mamluk Sultanate,” *Scripta hierosolymitana* 9 (1961): 31–62; Isolde Betty Nettles, “Mamluk Cavalry Practices: Evolution and Influence” (dissertation, University of Arizona, 2001), 134–49.

<sup>40</sup> For example, the “*Kitāb Ma'rifat La'b al-Dabbūs fī Awqāt al-Ḥurūb wa-al-Širā' alā-al-Khayl*,” Paris, BNF MS Ar. 2830 and BNF MS Ar. 6604; Istanbul, Ayasofya MS 3186; French edition and translation by Agnès Carayon, “*La furūsīyah des Mamlūks: Une élite sociale à cheval*” (doctoral thesis, Université de Provence, 2012). On the *furūsīyah* treatises dealing with the art of the mace, see also al-Sarraf, “Mamluk *Furūsīyah* Literature and Its Antecedents,” 175–77.

<sup>41</sup> MS produced in Syria or in Egypt in 1371: London, British Library Add. 18866 (the miniatures can be seen online at <http://imagesonline.bl.uk>, consulted 12 December 2013); Cairo, MS Dār al-Kutub al-Miṣriyah. See also the “*Kitāb al-Makhzūn fī Jāmī' al-Funūn*,” Paris, BNF MS Ar. 2824 (Egypt or Syria, 875/1470), and <http://gallica.bnf.fr/ark:/12148/btv1b8422958j> (consulted 12 December 2013).



behind them describes troop formations strictly arranged in linear or circular patterns.<sup>42</sup>

Thus according to the *furūsiyah* treatises, the Mamluk *fāris* was individually and/or collectively prepared to use the better tactics and techniques of combat on the battlefield. When their training was over, they had to know how to put in place the tactic that had been decided by the commander, to organize cohesive units, advance or retreat together, and receive a charge and charge themselves; but several problems emerge from these military manuals. First, most of them are still manuscripts and they have not been adequately studied. Second, most of them include substantial quotations from earlier texts, in particular from Abbasid military treatises, and some researchers believe that they do not (or rarely) actually refer to Mamluk times<sup>43</sup>—this argument is in my view exaggerated and reflects an outdated conception of medieval compilation, which is a true labor of writing/re-writing that is always informative for the time of utterance.<sup>44</sup> Third, we do not know the percentage of mamluks usually given the training described in the manuals, without taking into account the fact that these schools did not work as well as they should have for the whole length of the Mamluk Sultanate.<sup>45</sup>

<sup>42</sup> See, in particular, Lājīn ibn ‘Abd Allāh al-Dhahabī al-Ṭarābulusī al-Rammāh (d. 738/1337), “Tuḥfat al-Mujāhidīn fī al-‘Amal bi-al-Mayādīn,” Istanbul, Fātiḥ Mosque Library MS 3512/4, 17 fols., 32 figures. The text is attributed to *al-‘abd al-faqīr ilā Allāh Ta‘ālā Lājīn al-Ḥusāmī al-ma‘rūf bi-[al]-Ṭarābulusī* (fol. 3r), because even in Mamluk times there was confusion between Lājīn and his son Muḥammad ibn Lājīn al-Ḥusāmī al-Ṭarābulusī al-Rammāh. On this confusion and other manuscripts of the *Tuḥfat*, see al-Sarraf, “Mamluk Furūsiyah Literature and Its Antecedents,” 174, n. 113.

<sup>43</sup> Mainly Shihāb al-Sarraf, “Furūsiyah Literature of the Mamlūk Period,” in *Furūsiyah*, vol. II, *The Horse in the Art of the Near East*, ed. David Alexander (Riyadh, 1996), 118–35; idem, “Adab al-Furūsiyah fī al-‘Aṣrayn al-‘Abbāsī wa-al-Mamlūkī,” in *Furūsiyah*, vol. I, *Funūn al-Furūsiyah fī Tārīkh al-Mashriq wa-al-Maghrib*, ed. Shihab al-Sarraf (Riyadh, 2000), 104–39. Shihab al-Sarraf is more or less followed by Nicolle, *Late Mamlūk Military Equipment*, 39–40.

<sup>44</sup> See Michael Cooperson, “Probability, Plausibility and ‘Spiritual Communication’ in Classical Arabic Biography,” in *On Fiction and Adab in Medieval Arabic Literature*, ed. Philip F. Kennedy (Wiesbaden, 2005), 69–84; Abdallah Cheikh-Moussa, Heidi Toelle, and Katia Zakharia, “Pour une re-lecture des textes littéraires arabes: éléments de réflexion,” *Arabica* 46 (1999): 523–40; Abbès Zouache, “Dubays b. Ṣadaqa (m. 529/1135), aventurier de légende: Histoire et fiction dans l’historiographie arabe médiévale (VIe/XIIIe–VIIe/XIIIe siècle),” *Bulletin d’études orientales* 58 (2008–9): 87–130.

<sup>45</sup> *Furūsiyah* training seems to have declined before and during al-Malik al-Ashraf Sha‘bān’s reign (764–78/1362–77), during Barqūq’s reign (792–801/1390–99), and in the times of the historian Ibn Taghribirdī (d. 875/1470). See Ibn Manglī, *Uns al-Malā bi-Waḥsh al-Falā*, trans. François Viré as *De la chasse* (Paris, 1984), 19–20; Ibn Taghribirdī, *Al-Nujūm al-Zāhirah Fī Mulūk Miṣr wa-al-Qāhirah*, ed. W. Popper (Berkeley, 1909–29), 6:509; al-Maqrīzī, *Al-Mawā‘iz wa-al-I‘tibār fī Dhikr al-Khiṭa‘ wa-al-Āthār*, ed. Ayman F. Sayyid (London, 2002–5), 3:693; Shihāb al-Sarraf, “L’archerie mamlūke (648–924 A.D./1250–1517 A.H.),” (doctoral thesis, Paris IV La Sorbonne, 1989), 716; Carayon, “La



According to Reuven Amitai, “only the royal mamluks were usually given the first-rate training of the Sultan’s military schools.”<sup>46</sup> So if it can safely be argued that all cavalry warriors were trained, we do not know what this training was made up of. Fourth, *furūsiyah* treatises provide a more or less broad overview of Islamic military thought in the age of the Mamluks, but their authors hardly adopted a practical perspective and used precise examples.

In general, little attention has been paid to the relation between the theory and the practice of war in the Islamic era.<sup>47</sup> Moreover, narrative sources (mainly chronicles) from which we should expect a more accurate view of the practice of war rarely provide explicit information about the actual tactics and fighting methods used in the battles. It is not the purpose of this article, however, to attempt a review of descriptions of Near Eastern battles (which were not so numerous after the collapse of the Mongols in the beginning of the fourteenth century)<sup>48</sup> that can be found in narrative sources.<sup>49</sup> It is enough to say that what appears to be evident within these sources is that Muslim armies used various tactics on the battlefield, including feigned retreat, endless archer’s harassment to break the unity of the enemy’s groups, suddenly opening the ranks when an enemy’s

---

*furūsiyah* des Mamelouks,” 221; Abbès Zouache, “Une culture en partage: la *furūsiyah* à l’épreuve du temps,” *Médiévales* 64 (printemps 2013): 72.

<sup>46</sup> Reuven Amitai, *Mongols and Mamluks: The Mamluk-Ilkhanid War, 1260–1281* (Cambridge, 1995), 217.

<sup>47</sup> William J. Hamblin, “Saladin and Muslim Military Theory,” in *The Horns of Ḥaṭṭīn*, ed. Benjamin Z. Kedar (Jerusalem, 1992), 228–38, where he identifies several parallelisms between al-Harawī’s *Al-Tadhkirah al-Harawīyah* and Saladin’s military policy.

<sup>48</sup> After the collapse of the Turco-Mongol forces at the turn of the eighth/fourteenth and ninth/fifteenth century, there was no foreign large-scale threat until the Ottoman-Mamluk wars at the end of the ninth/fifteenth century.

<sup>49</sup> As far as I know, there is no equivalent for the late Mamluk period of Amitai’s book cited above, *Mongols and Mamluks: The Mamluk-Ilkhanid War, 1260–1281*. See however Shai Har-El, *Struggle for Domination in the Middle East: The Ottoman-Mamluk War, 1485–1491* (Leiden, 1995). On Mamluk (and Mongol) tactics and methods of fighting, see also Denis Sinor, “The Inner Asian Warriors,” *Journal of the American Oriental Society* 101, no. 2 (April–June 1981): 133–44; John Masson Smith, “Ayn Jalut: Mamluk Success or Mongol Failure?” *Harvard Journal of Asiatic Studies* 44, no. 2 (1984): 307–45; idem, “Mongol Society and Military in the Middle East: Antecedents and Adaptations,” in *War and Society in the Eastern Mediterranean, 7th–15th Centuries*, ed. Yaacov Lev (Leiden, 1997): 249–66; idem, “Nomads on Ponies vs Slave on Horses,” review of Reuven Amitai-Preiss, *Mongols and Mamluks*, *JAOS* 118, no. 1 (1998): 54–62; David O. Morgan, “The Mongols in Syria, 1260–1300,” in *Crusade and Settlement*, ed. Peter W. Edbury (Cardiff, 1985), 231–34; Christopher Marshall, *Warfare in the Latin East, 1192–1291* (Cambridge, 1992); Charles J. Halperin, “The Kipchack Connection: The Ilkhans, the Mamluks and Ayn Jalut,” *Bulletin of the School of Oriental and African Studies* 63, no. 2 (2000): 229–45; Erik Hildinger, *Warriors of the Steppe: A Military History of Central Asia, 500 B.C. to 1700 A.D.* (Cambridge, MA, 2001); James Waterson, *The Knights of Islam: The Wars of the Mamluks* (London, 2007).



charge was received and then closing up again and surrounding him, and charging in linear or in cohesive units, among others.

The Mamluks as well as their enemies (Crusaders, Franks, or Mongols) divided their troops into separate squadrons (*aṭlāb*, *karādis*) in battle which constituted relatively small tactical cohesive units which can be seen as “primary groups.”<sup>50</sup> They conducted different types of charges, frontal or not.<sup>51</sup> As Christophe Marshall stated, the Muslims “were able to modify their tactics according to the opponents that they were facing. Against the Mongols, for example, they were prepared both to face up to a charge and to use it themselves.”<sup>52</sup> The outcome was determined by the success or failure of the charge during the decisive close *mêlée*. Combat in close quarter was a part of their culture of war, which led them to practice the so-called “Western way of war.” When the time of hand-to-hand combat came, the Mamluks used swords, maces, or clubs with the objective to kill the enemy they were fighting.

As Nicolle points out, the Mamluks’ repeated charge was not the same as the dispersal and harassment of tribal forces.<sup>53</sup> Discipline, endurance, the cohesion of the unit, and the combination of mobility and temporarily static position were fundamental for cavalymen who were looking for a devastating “shock effect.” Thus, it is not surprising to find in Mamluk narrative sources words and expressions such as “*ḥamalū ‘alā ḥamlat rajul wāḥid*,” “*ḥamlah ṣādiqah*.”<sup>54</sup> It is interesting to note that Arabic chroniclers of the twelfth century like Ibn al-Qalānīsī (d. 555/1160) used the same expressions about the famous, admired, and feared Frankish couched-lance cavalry charge,<sup>55</sup> by which the knights sought to generate an irreversible shock at the point of impact.<sup>56</sup> Muslim horsemen had known

<sup>50</sup> About the notion of “primary group” in a military context, see Anthony King, “The Word of Command: Communication and Cohesion in the Military,” *Armed Forces & Society* 32, no. 4 (2006): 493–512; Guy L. Siebold, “The Essence of Military Group Cohesion,” *Armed Forces & Society* 33, no. 2 (2007): 286–95; John F. Guilmartin, Jr., “Light Troops in Classical Armies: An Overview of Roles, Functions and Factors Affecting Combat Effectiveness,” in *The Military and Conflict Between Cultures: Soldiers at the Interface*, ed. James C. Bradford (College Station, TX, 1997), 17–48.

<sup>51</sup> See Amitai, *Mongols and Mamluks*, Chapter 10.

<sup>52</sup> Marshall, *Warfare in the Latin East, 1192–1291*, 161–62.

<sup>53</sup> *Late Mamlūk Military Equipment*, 136, quoting Smith, “Mongol Society and Military in the Middle East: Antecedents and Adaptations,” 256–58.

<sup>54</sup> Amitai, *Mongols and Mamluks*, Chapter 10.

<sup>55</sup> Ibn al-Qalānīsī, *Dhayl Tārīkh Dimashq*, ed. Suhayl Zakkār (Damascus, 1983), 339, 403, 464–65: “*ḥamlah ṣādiqah*,” “*ḥamlah mashhūrah*,” “*ḥamlah ma’rūfah*,” “*ḥamlah wāḥidah*,” etc. See Zouache, *Armées et combats*, 37–39, 871–74.

<sup>56</sup> The couched-lance charge became the principal cavalry fighting method of the Frankish and European knights in the twelfth and thirteenth centuries. Concerning this fighting method, see Christopher Marshall, “The Use of the Charge in Battles in the Latin East, 1192–1291,” *Historical*

this technique for a long time and probably knew how to put it into practice, but they did not seem to have adopted it on the battlefield.<sup>57</sup>

## Archery Techniques

It must be said that the Mamluks had other powerful weapons at their disposal, most notably the composite recurved bow. Written sources plentifully describe their remarkable technological skills in the field of archery, and assert that they were able to use different archery techniques. So it is particularly interesting to be able to compare this information with archaeological discoveries to evaluate their real features. Written sources provide information about the form and the weight of arrow shafts and arrowheads which can be compared to the numerous arrowheads found in the Citadel of Damascus. These arrowheads allow Nicolle to set up an arrowhead design typology that confirms the extreme diversity of the shapes used by the late Mamluks and will be highly useful for future research on Muslim archery.<sup>58</sup>

Nicolle also sheds light on an equally useful development concerning the crossbow (generally called *qaws al-rijl*). It is now clear that Muslim armies used this weapon more frequently than has previously been assumed.<sup>59</sup> The crossbow was well known in the Islamic Middle East a long time before the Crusaders invaded Syria and created the Latin East states. It seems that it reappeared during the tenth century, but the conditions of this reappearance are unclear. Should this

---

*Research* 63, no. 152 (1990): 221–26; Jean Flori, “Encore l’usage de la lance... La technique du combat chevaleresque vers l’an 1100,” in *Croisade et chevalerie, XIe-XIIe siècle* (Paris, 1998), 21–40; John France, “Crusading Warfare and Its Adaptation to Eastern Conditions in the Twelfth Century,” *Mediterranean Historical Review* 15, no. 2 (2000): 49–66; J.-F. Verbruggen, “The Role of the Cavalry in Medieval Warfare,” *Journal of Medieval Military History* 3 (2005): 46–71.

<sup>57</sup> See for example Usāmah ibn Munqidh, *Kitāb al-ʿIṭibār*, ed. Muḥammad ʿAlī Bayḍūn (Beirut, 1998), 48, and the types of lance charges and thrusts described by Najm al-Dīn al-Rammāḥ, *Kitāb al-Furūsīyah wa-al-Manāṣīb al-Ḥarbīyah*, and by Muḥammad al-Aqsarāʾī al-Ḥanafī (d. 749/1348), *Nihāyat al-Suʿl wa-al-Umnīyah fī Taʿallum Aʿmāl al-Furūsīyah*, ed. Khālid Aḥmad al-Suwaydī (Damascus, 2009); David Nicolle, “The Impact of the European Couched Lance on Muslim Military Tradition,” *Journal of the Arms and Armour Society* 10 (1980): 6–40; Zouache, *Armées et combats*, 37–39, 871–74.

<sup>58</sup> *Late Mamlūk Military Equipment*, 303–5.

<sup>59</sup> For example, see Claude Gaier, “Quand l’arbalète était une nouveauté: Réflexions sur son rôle militaire du Xe au XIIIe siècle,” *Le Moyen Âge* 99 (1993): 201–29; Claude Cahen, “Technique et organisation socio-militaire dans le monde musulman classique,” in *Structures féodales et féodalisme de l’Occident méditerranéen IXe-XIIIe siècle: Bilans et perspectives de recherches* (Paris, 1980), 66. See also K. Huuri, *Zur Geschichte des Mittelalterlichen Geschützwesens aus Orientalischen Quellen* (Helsinki, 1941), 113–14; Valérie Serdon, *Armes du diable: Arcs et arbalètes au Moyen Âge* (Rennes, 2005).

be interpreted as a survival of earlier Near Eastern knowledge and/or as a sign of a Chinese influence, as the crossbow was used in China for a long time?<sup>60</sup> To my mind, further research is still necessary to answer this question definitely. However, we can agree with Nicolle when he suggests quite convincingly that the crossbow was adopted as a war weapon first of all in the heartlands of the Middle East.<sup>61</sup>

This particularly lethal weapon is sometimes documented by historical sources.<sup>62</sup> It was probably used in naval warfare (at least by the Fatimids), and certainly in siege warfare. A great crossbow called *qaws al-ziyār* with the power of twenty men is described by al-Ṭarsūsī at the end of the twelfth century (though the information seems to pre-date the end of the twelfth century), but he probably refers to an experimental weapon which had two separate bow arms.<sup>63</sup> From an open battle perspective, the information given by historical texts is scarcer before the end of the Mamluk Sultanate, when for example Ibn Iyās refers to crossbowmen in his description of the Mamluk encampment of Raydānīyah, on the eve of the Ottoman invasion in 1515.<sup>64</sup> On the contrary, Ayyubid and Mamluk *furūsīyah* treatises are rather explicit. Ṭaybughā al-Ashrafī even dedicates a (short) chapter to *al-ramī bi-qaws al-rijl ‘alā zuhūr al-khayl* (“shooting with a crossbow on horseback”), and some illustrations of late treatises show mounted crossbowmen.<sup>65</sup> But the use of crossbow on horseback on the battlefield seems questionable. Indeed, it seems that the composite bow was more efficient than even the composite crossbow. The maximum range of the composite crossbow was less than that of the composite bow.<sup>66</sup> In any case, the early Mamluk crossbow staves of composite construction

<sup>60</sup> *Late Mamlūk Military Equipment*, 138, where Nicolle is very cautious in reporting the various modern interpretations of this reappearance.

<sup>61</sup> *Late Mamlūk Military Equipment*, 140.

<sup>62</sup> See for example Ṭaybughā al-Ashrafī al-Yūnānī (d. 797/1394), *Kitāb al-Jihād wa-al-Furūsīyah wa-Funūn al-Ḥarbīyah*, dirāsah wa-taḥqīq al-Amīn ‘Abd al-Ḥamīd Abū Sa‘adah bi-ta‘awun ‘Abbās Zouache wa-Amīnah Ḥasan al-Mahdī (Cairo, forthcoming):

وقسي الرجل أنواع، منها الجرخ للإفرنج، واللقشة للمغاربة، والزنبورك للعجم والتُرك، والبندوق للإسلام.

The *jarkh* was a form of stirrup crossbow; the word “*al-bundūq*” refers to the *qaws al-bundūq*, which in fact was the pellet bow discussed below. See also Nicolle, *Late Mamlūk Military Equipment*, 149, nos. 79–80.

<sup>63</sup> *Late Mamlūk Military Equipment*, 141.

<sup>64</sup> *Ibid.*, 149–50.

<sup>65</sup> Cf. Ṭaybughā al-Ashrafī al-Yūnānī, *Kitāb al-Jihād wa-al-Furūsīyah wa-Funūn al-Ḥarbīyah*; *Late Mamlūk Military Equipment*, 149, referring to various manuscript illustrations. See also Ibn Akhī Ḥizām (attributed), “*Kitāb al-Makhzūn Jāmī‘ al-Funūn*,” Paris, BNF MS Ar. 2824, fol. 82r (*al-ramī bi-qaws al-rijl ‘alā-al-faras*).

<sup>66</sup> Nicolle, *Late Mamlūk Military Equipment*, 144, referring to B. A. Boit, “The Fruits of Adversity: Technical Refinements of the Turkish Composite Bow during the Crusading Era” (M.A. thesis,

found during archaeological excavations in Syria (in the Euphrates valley)<sup>67</sup> as well as the pieces from the Citadel of Damascus<sup>68</sup> confirm that the Near Eastern Muslims were as able as the later medieval Europeans to make sophisticated and powerful crossbows.

Other artifacts discovered in Damascus also show how meticulously military stuff was made. The problem is that not all of these pieces are easy to identify, especially when there is no element of comparison. Thus, we can only guess with Nicolle that the fragmentary quivers or bowcases of decorated leather probably represent “the earliest surviving examples from the heartlands of the medieval Islamic world” (p. 188). Indeed, other relics survive, but they come from the non-Islamic regions of Central Asia and the Caucasus.

Moreover, a large number of small clay pellets have been found in various parts of the Citadel of Damascus. They were probably shot from a hunting weapon which was used to stun birds: a blowpipe (*sabatānah* or *zabṭānah*) or more probably a *qaws al-bunduq*.<sup>69</sup> This last weapon was only used to shoot birds, and the pellet, called *julāhiq* or *bunduq*, was made of hardened clay.<sup>70</sup> *Ramī bi-al-bunduq*, which was already known at the time of the Prophet, became widely popular in Syria from the seventh/thirteenth century, after its promotion by the Abbasid caliph al-Nāṣir (r. 575–622/1180–1225).<sup>71</sup> Enthusiasm was such in the social classes that it boasted a real “sport *futūwah*.”<sup>72</sup> In my view, the bullets discovered in Damascus should be seen as vivid proof of the practice of this activity in the Citadel, maybe by soldiers at the end of the Mamluk period.

---

Ohio State University, 1991), 38.

<sup>67</sup> They were probably discovered in Raḥbah. These staves seem to be now in Qatar, as Nicolle said without any further specification (*Late Mamlūk Military Equipment*, 148). According to him, one of the staves has been subject to a radiocarbon dating test which produced an optimum date of 1215.

<sup>68</sup> However, one can doubt that the carved wooden object briefly described in Table 03a (p. 137; see also drawing 83) is part of a crossbow.

<sup>69</sup> Nicolle hesitates while trying to choose between the two hunting weapons; see pp. 178, 179, 181, and Table 3e, 182–84.

<sup>70</sup> *Qaws al-bunduq* is a hand bow generally called “stone bow” and in French “arbalète à jalets.”

<sup>71</sup> See for example Ibn al-Athīr, *Al-Kāmil fī al-Tārīkh*, trans. Donald S. Richards as *The Chronicle of Ibn al-Athīr for the Crusading Period from al-Kāmil fī l-Ta’rīkh*, vol. 3, *The Years 589–629/1193–1231: The Ayyubids after Saladin and the Mongol Menace* (Burlington, 2008), 261 (but correct “crossbow” to “stone-bow”).

<sup>72</sup> Antoine Boudot-Lamotte and François Viré, “Contribution à l’étude de l’archerie musulmane: Notes complémentaires,” *Arabica* 17, no. 1 (1970): 47–68, especially 49.

## Armors: Variety and Technique

But the most impressive artifacts found in the Citadel of Damascus are certainly the fragments of armors. Here again, these artifacts show the huge diversity of Mamluk defensive arms, and the high degree of technique achieved by Near Eastern craftsmen. The Mamluks had to reply to the ever increasing heaviness and effectiveness of offensive weapons and so this they did, following the weaponry tradition of their predecessors, adopting when it was necessary those of their neighbors and enemies and respecting the climatic conditions of the Near East. Moreover, it was essential for them not to restrict their mobility: they needed to be at the same time highly mobile yet rugged enough to charge, to withstand an enemy's charge, and to be adequately protected from bows, crossbows, and fire-arms.

Several options were given to them to achieve these goals. The material discovered in the Citadel of Damascus shows that if the Middle Eastern fighters never adopted the heavier full metal armor that was worn in Europe on ceremonial occasions, defensive weapons also evolved in the heartlands of the Middle East to become heavier and/or more rigid. However, all the soldiers did not wear the same armor. Their equipment depended on their rank and their function during the fights. In fact, various types of armor can be identified in the documentary sources (where the vocabulary is rarely precise) as well as in the archaeological remains. Scale and lamellar armors (often called *jawshan* in Arabic texts) were used and probably spread under different forms in the late Mamluk Sultanate. Mail armor, which is still sometimes wrongly regarded as characteristic of the medieval Western form of armor though it was widely known in the Middle East for a long time, was still used by the late Mamluks, even if it seems to have played a lesser role than in the centuries before.<sup>73</sup> Mail-and-plate cuirass probably spread only from the very end of the Mamluk Sultanate.

In addition, it seems that softer armors, which consisted in padded and fabric-covered garments including some mail elements, never disappeared, even if the information given by textual and archeological sources is not always clear. Indeed, as Nicolle rightly outlines, the textual sources give the impression that soft armor declined at the end of the Mamluk Sultanate, while thickly quilted items from the Citadel of Damascus and from the Euphrates Valley have been preserved.<sup>74</sup> Maybe, as Nicolle argues, padded and fabric-covered shirts remained popular in Mamluk times, but as clothing rather than as a protective weapon.<sup>75</sup> It

<sup>73</sup> But as outlined by Nicolle (see p. 93), a history of mail armor in the medieval Islamic world is still unwritten.

<sup>74</sup> Above, n. 67.

<sup>75</sup> *Late Mamlūk Military Equipment*, 102. In addition to the references mentioned by Nicolle, see Abbès Zouache, "L'armement entre Orient et Occident au VIe/XIIe siècle: Casques, masses d'armes



is also quite likely that this clothing was often impressively decorated in order to be worn during parades. The same applies for horse armor of the heavy cavalry. Hardened leather types probably replaced less effective felt or quilted types. The documentary evidence quoted by Nicolle even shows that some horse armors were made with steel. In particular, Ibn Iyās (d. ca. 930/1524) often refers to caparisons consisting of steel and colored velvet or to chamfrons in the *Badā'iʿ al-Zuhūr fī Waqā'iʿ al-Duhūr*.<sup>76</sup>

The large fragments of the leather armor found in the Citadel of Damascus (at CD.5) may come from horse armor, as, if Nicolle is right, at the end of the Middle Ages “hardened leather layered construction was gradually relegated to horse armor in the sophisticated and wealthy Islamic Middle East, [while] it is likely to have remained more common in Central Asia.”<sup>77</sup> However, leather armors for men did not disappear, as it is shown by other smaller fragments also found in Damascus. Indeed, these fragments seem to have been made in the same way as earlier items of Mamluk hardened “hooped” cuirasses also discovered in Syria—in the Euphrates valleys—from which some pieces can be dated to the beginning of the thirteenth century. These fragments are particularly impressive because they reveal a form of hardened leather laminated horizontal strip (or “hoop” armor) that was unknown until recently.

### The Scale-Lined *Qarqal*

Also highly impressive are the artifacts identified by Nicolle as fragments of a scale-lined *qarqal*, which was until now only known by documentary evidence. In fact, even the word *qarqal* is problematic. Nicolle has tried to make the word clear but not always in a fully convincing way. It must be said that there is a lack of clear information which would allow us to understand how this term has evolved over time. It may have some Persian origins, even if the explanation given to Nicolle by Professor ʿAbd al-Hādī al-Tāzī of the Royal Moroccan Academy is a little bit dubious: “It is of Persian origin, from *qar qalāt* meaning ‘collecting’ or ‘assembly of’ ‘the small pieces of wood used in a game like tip-cat.’ It signifies a form of *dirʿ* (hauberk) in which the warrior dressed for war. It first appeared in the Mamlūk period. It was a novelty or innovation, in the ‘Conversations’ of Ibn Iyās for the year 796 A. H. (1393–4)...”<sup>78</sup> This term did not appear during the Mamluk

et armures,” *Annales Islamologiques* 41 (2007): 277–326. This article was unknown to Nicolle (he delivered the volume to IFPO in 2007).

<sup>76</sup> See the reference to the *Badā'iʿ* quoted by Nicolle, 131–33.

<sup>77</sup> *Late Mamlūk Military Equipment*, 111. See Table 02f, 116–21, and photographs 287–93 (the attribution is uncertain).

<sup>78</sup> *Late Mamlūk Military Equipment*, 64–65. Nicolle is aware of the difficulty highlighted by this explanation, as he points out that “any association with the game of tip-cat may need to be in-

period. Arabic lexicographers from the Abbasid period—which are not used by Nicolle—refer to a *qarqal* (plural *qarāqil*). They define it as a sleeveless shirt worn by women, saying also that Iraqi women wrongly pronounced it “*qarqar*.”<sup>79</sup> Abū Maṣṣūr al-Tha‘ālibī (350–429/961–1039), a prominent literary figure of his time, points out that women used to wear their *qarqal* beneath their shirts (*yalbasuhā al-nisā’ taht durū‘ihinna*).<sup>80</sup> However, the same word and its new pluralized form *qarqalāt* took a new meaning, seemingly at the end of the seventh/thirteenth century: *qarqalāt* are listed among beautiful weapons which should be worn by the soldiers of the Mamluk sultan during a review (*ard*) held in Dhū-al-Ḥijjah 692/November 1293.<sup>81</sup>

Both Baybars al-Manṣūrī (d. 725/1325)<sup>82</sup> and Ibn al-Dawādārī (d. after 736/1335) referred to *qarqalāt* worn by elite soldiers. Thus, *al-qarqalāt al-aṭlas* (i.e., *qarqalāt* whose cover is made of satin) were among the sumptuous weapons worn by Qarā Sunqur’s mamluks and their horses in 712/1312–13.<sup>83</sup> Can this new meaning be linked to the old one? One is first inclined to answer this question negatively, but it is difficult not to pay attention to the fact that latter historians like al-Maqrīzī (d. 845/1442) and Ibn Taghribirdī (d. 874/1470) sometimes referred to “a *qarqar* without sleeves” (*qarqar bi-ghayr akmām*).<sup>84</sup> In any case, al-Qalqashandī (d. 821/1418),

verted—with the armour coming before the game. If this was indeed the case we might, rather fancifully, imagine bored Mamluk soldiers inventing a game which made use of spare or damaged armour scales—the game then acquiring the name of the armour!” Indeed, this explanation remains highly fanciful.

<sup>79</sup> Al-Azharī (d. 370/980), *Tahdhīb al-Lughah*, ed. Muḥammad ‘Awd Mu‘īb (Beirut, 2001), 9:312:

قرقل : أبو عبيد عن الأموي: هو القرقل الذي يُسميه الناس القرقر. وقال أبو تراب: القرقل: قميص من قمص النساء، بلا لبنة، وجمعه قراقل.

Ibn Manẓūr (d. 711/1311), *Lisān al-‘Arab* (Beirut, 1414), 11:555:

قرقل: القرقل: ضرب من الثياب، وقيل: هو ثوب بغير كمين. أبو تراب: القرقل قميص من قمص النساء بلا لبنة، وجمعه قراقل، وقال الأزهرى في الثلاثي عن الأموي: هو القرقل باللام لقرقل المرأة، قال: ونساء أهل العراق يقولون قرقر، قال: وهو خطأ وكلام العرب القرقل، باللام، قال: وكذلك قال الفراء وغيره، وقال الأموي في موضع آخر: القرقل الذي تسميه الناس والعامة القرقر.

There is no additional information on the latter in Murtaḍā al-Zabīdī’s (d. 1205) *Tāj al-‘Arūs min Jawāhir al-Qāmūs*, s. v. *Q-R-Q-L*:

قامص للنساء بلا لبنة، قال أبو تراب ونقله الأزهرى عن الأموي، أو ثوب لا كمي له.

<sup>80</sup> Al-Tha‘ālibī, *Fiḥ al-Lughah wa-Sirr al-‘Arabīyah*, ed. ‘Abd al-Razzāq al-Mahdī (Beirut, 2002), 171.

<sup>81</sup> Al-‘Aynī (d. 855/1451), *‘Iqd al-Ḥumām fī Tārīkh Ahl al-Zamān*, 251:

فاهتموا بالعدد الجميلة من الجواشن والقرقلات والخنوذ والبركستوانات والتراكشي والكاسات وغير ذلك من العدد الفاخرة.

<sup>82</sup> Baybars al-Manṣūrī, *Zubdat al-Fikrah fī Tārīkh al-Hijrah*, ed. Donald S. Richards (Berlin, 1998), 293.

<sup>83</sup> Ibn al-Dawādārī, *Kanz al-Durar wa-Ḥamī‘ al-Ghurar* (Cairo, 1960), 12:230, 273. A group of important Mamluk officers led by Qarā Sunqur had defected to the Ilkhanate.

<sup>84</sup> Al-Maqrīzī, *Kitāb al-Sulūk li-Ma‘rifat Duwal al-Mulūk*, ed. Muḥammad ‘Abd al-Qādir ‘Atā’ (Beirut, 1997), 5:352; Ibn Taghribirdī, *Al-Nujūm al-Zāhirah fī Tārīkh Miṣr wa-al-Qāhirah* (Cairo, n.d.), 12:53. See also al-Dhahabī (d. 748/1348), *Siyar A‘lām al-Nubalā’*, ed. Sha‘īb al-Arnā‘ūṭ et al. (2nd ed., Beirut, 1985), 18:192, 18:1, etc.

who precisely described the word *qarqal*, did not evoke its sleeves. According to him, the *qarqal*, which in his time had replaced the *zarad* (mail armor), was made of iron scales or lamellae<sup>85</sup> covered with red and yellow *dibāj* brocade<sup>86</sup>—red and yellow colors giving a luminous and dazzling impression because as we must not forget, weapons should also be used to magnify the warriors.<sup>87</sup>

But some *furūsīyah* manuals make things more difficult. Nicolle points out that al-Aqṣarāʾī's (d. 749/1348?) *Nihāyat al-Suʿl wa-al-Umniyah fī Taʿlīm Aʿmāl al-Furūsīyah*, whose earliest manuscript comes from the mid-fourteenth century, defines the *qarqal* as: “a padded garment worn beneath the *jawshan* as the Franks wear beneath their *jawshans* of iron.... It will protect the wearer from both heat and cold and from the blows of *ʿamūd* and *kāfir-kūb* which soften the flesh and enfeeble the bones. If a *dirʿ* (mail hauberk) is also worn beneath it, then protection and safety are found.”<sup>88</sup> This extract is problematic for several reasons. Al-Aqṣarāʾī (if he is the author of the *Nihāyat al-Suʿl*) does not appear as an expert on body armor—e.g., he even attributes the *jawshān* to the Franks.<sup>89</sup> Moreover, he does not always refer to weapons of the Mamlūk period. Thus the *ʿamūd*, a one-piece iron staff, had probably become obsolete by the end of the tenth century.<sup>90</sup> As far as the *kāfir-kūb* (pl. *kāfir-kubāt*) is concerned, it is a half-Arabic and half-Persian word meaning “infidel-bashers” which defines a form of mace used in Iran and Iraq during the Abbasid period.<sup>91</sup> So it is doubtful that the *qarqal* could have protected from their blows. Finally, al-Aqṣarāʾī's description implies that the *qarqal* was simply a padded garment used during fighting to strengthen the protection

<sup>85</sup> *Min ṣafāʾih al-ḥadīd*: literally “from iron blades” or “from iron lamellae.”

<sup>86</sup> Al-Qalqashandī, *Ṣubḥ al-Aʿshā fī Ṣināʿat al-Inshāʾ*, ed. Ḥ. Shams al-Dīn (Beirut, 1987–88), 2:151–52 and 4:11:

وأعلم أنّ لبس العرب في الحرب كان الزرد أما الآن فقد غلب عمل القرقلات من الصفائح المتخذة من الحديد المتواصل بعضها ببعض. / والقرقلات المتخذة من صفائح الحديد المغشاة بالديباج الأحمر والأصفر.

<sup>87</sup> On that point, see Maria Sardi, “Mamluk Textiles,” in *Islamic Art, Architecture and Material Culture: New Perspectives*, ed. Margaret S. Graves (Oxford, 2012), 7–14. See also Leon A. Mayer, *Mamluk Costume: A Survey* (Geneva, 1952). One can also find some information in the ancient work of Ahmed Zeki Pacha, “Notice sur les couleurs nationales de l'Égypte musulmane,” *Bulletin de l'Institut d'Égypte* 2 (1919): 61–95.

<sup>88</sup> Nicolle's translation in “The Reality of Mamluk Warfare: Weapons, Armour and Tactics,” *Al-Masaq* 7 (1994): 77–110.

<sup>89</sup> Oriental Franks knew and wore *jawshans* (see the evidence quoted by Nicolle in *Late Mamluk Military Equipment*), but it was not their usual body armor.

<sup>90</sup> Then replaced by the *dabbūs*. See Shihab al-Sarraf, “Close Combat Weapons in the Early ʿAbbāsīd Period: Maces, Axes and Sword,” in *A Companion to Medieval Arms and Armour*, ed. David Nicolle (Woodbridge, 2002), 149–78; Zouache, “L'armement entre Orient et Occident,” 297–302.

<sup>91</sup> M. Chouémi, “Kāfir-kūb,” in *Encyclopedia of Islam*, 2nd ed., 4:411.

of a lamellar or scaled armor (*jawshān*), as well as the *dirʿ* which could be worn beneath it.

Nicolle is aware of this difficulty, and he rightly wonders if the *qarqal* could not have been a “soft armour before evolving into a scale-lined cuirass and eventually losing its padded quality.” He also asserts that around 1368,<sup>92</sup> it was “certainly a formidable form of armour.”<sup>93</sup> This assertion is strengthened by the fragments found in the Citadel of Damascus as well as by some documentary evidence. For example, according to al-ʿAynī, in 699/1299–1300 the *qarqal* was more expensive than the *jawshan* in a period of higher prices: “a *qarqal*, which was worth 100 dirhams, cost 700 dirhams; a horse armor (*al-barkustawān*) which was worth 200 dirhams, cost 1.000 dirhams; a *jawshan*, which was worth 50 dirhams, cost 200 and 300 dirhams; the helmet (*khūdhah*) which was worth 50 dirhams cost 200 and 300 dirhams.”<sup>94</sup> Like other words—such as *jawshan*—the term *qarqal* sometimes also had a generic meaning (for body armor). Moreover, different kinds of *qarqal* were probably used. Thus the *qarqal* is often mentioned in relation to parades, and we find some references to *al-qarqal al-mudhahhabah*, which probably looked luxurious. The *qarqal* also seem to have been adapted to the “fire-war” described in the documentary sources. For example, we can rely on a *furūsiyah* manual sometimes entitled *Kitāb al-Makhzūn Jāmiʿ al-Funūn*, wrongly attributed to Ibn Abī Khazzām (ninth century) and from which several copies are preserved in beautifully illustrated manuscripts dated back to the second half of the fifteenth century.<sup>95</sup> It

<sup>92</sup> The emerging argument is that the *Kitāb al-Jihād wa-al-Furūsiyah wa-Funūn al-Ādāb al-Ḥarbīyah* attributed to Ṭaybughā al-Ashrafī al-Yūnānī (d. 797/1394), which may have been written around 1368, refers to a special arrowhead which is so effective it could pierce *qarqal*'s laminae (*ṣafīḥat al-qarqal*). Nicolle quotes the English translation of J. D. Latham and W. F. Paterson, *Saracen Archery*, 26, but see the forthcoming edition by al-Amin Abouseada et al., fol. 72v.

<sup>93</sup> *Late Mamlūk Military Equipment*, 64.

<sup>94</sup> Al-ʿAynī (855/1451), *ʿIqd al-Jumān fī Tārīkh Ahl al-Zamān: ʿAṣr Salāṭīn al-Mamālīk*, vol. 4, *Ḥawādith wa-Tarājim*, 699–707/1299–1307, ed. Muḥammad Muḥammad Amīn (Cairo, 1992), 70, 82.

<sup>95</sup> “Kitāb al-Makhzūn Jāmiʿ al-Funūn,” Paris, BNF MS Ar. 2824 (875/1470); “Kitāb al-Makhzūn li-Arbāb al-Funūn,” Paris, BNF MS Ar. 2826 (98/1578–79); “Al-Makhzūn Jāmiʿ al-Funūn,” St. Petersburg, Institute of Oriental Studies of the Russian Academy of Sciences MS No. C-686 (dating back to the 50s–60s of the ninth/fifteenth century; the CD-ROM publication by Efim Rezvan and Alibker Alikberov, *Asiatic Museum: Treasures from St. Petersburg Academic Collection of Oriental Manuscripts*, CD-ROM Series, Issue no. 7, was not available to me). About the various copies, which are differently entitled, see Alibker Alikberov and Efim Rezvan, “Ibn Abi Khazzam and his *Kitāb al-Makhzūn*: The Mamluk Military Manual,” *Manuscripta Orientalia* 1, no. 1 (1995): 21–28. Alikberov and Rezvan wrongly attributed the text to “the 14th century author Ibn Abi Khazzām.” See also al-Sarraf, “Mamluk Furūsiyah Literature and Its Antecedents,” 200.

describes a “special *qarqal*” in the few pages dedicated to the use of fire-weapons by horsemen.<sup>96</sup> According to one copy:

People of Egypt used this trickery and then defeated the Tatars, because their horses did not face fire: [in front of fire], the horse takes his master (*ṣāhib*) and runs away. The way to do it is: to choose a number of horsemen (*fursān*) and garnish their lances (*rimāh*) from both ends with *barūd*.<sup>97</sup> The horseman (*fāris*) will wear a *qarqal* with its front face made of black thick felt (*balās*).<sup>98</sup> It is strewn with balls of linen fiber that have metal wires at their ends which are inserted into the *qarqal* and the helmet. The horse is also draped with thick felt. His hands will be sprinkled with dissolved talc so that he will not be burnt by fire. In front of them will be whatever they choose from foot soldiers equipped with sprinkle maces, explosive charges (*ṣawāriḥ*)<sup>99</sup> and *madāfi*.<sup>100</sup> [The horsemen and the foot soldiers] will take their place in front of the army.<sup>101</sup>

The same ideas—but with other words—can be found in another copy of the *Kitāb al-Makhzūn*:

<sup>96</sup> Paris, BNF MS Ar. 2824, fols. 79r–80r; St. Petersburg, MS No. C-686, fols. 160–61. The St. Petersburg manuscript is used by Joseph Toussaint Reinaud and Ildephonse Favé, “Du feu grégeois, des feux de guerre, et des origines de la poudre à canon chez les Arabes, les Persans et les Chinois,” *Journal Asiatique* 14 (1849): 257–327, reprinted in *Extrait n°16 du Journal Asiatique* (Paris, 1850): 1–71. See also Ahmad Yousef al-Hassan Gabarin, “Gunpowder Composition for Rockets and Cannon in Arabic Military Treatises in Thirteenth and Fourteenth Centuries: A Gap in the History of Gunpowder and Cannon,” *International Committee for the History of Technology Journal* 9 (2003): 1–30, reprinted in his *Studies in al-Kimya’: Critical Issues in Latin and Arabic Alchemy and Chemistry* (Hildesheim, Zürich and New York, 2009): 257–81.

<sup>97</sup> Originally “saltpeter” then “gunpowder.” See David Ayalon, *Gunpowder and Firearms in the Mamluk Kingdom: A Challenge to a Medieval Society* (London, 1956), 21–26, 42; G. S. Colin et al., “Barud,” *Encyclopaedia of Islam*, 2nd ed., 1:1050–61; W. Floor, “Bārūt,” *Encyclopaedia Iranica*, vol. 3, fasc. 8 (1988): 838–39, published online at <http://www.iranicaonline.org/> (consulted 14 December 2013).

<sup>98</sup> Ibn Sidah (d. 458), *Al-Muḥkam wa-al-Muḥiṭ al-A’zam*, ed. ‘Abd al-Ḥamīd Handāwī (Beirut, 2000), 8:512: “*wa-al-balās al-miṣḥ wa-al-jam’ bulus*.”

<sup>99</sup> Or “crackers.” See Reinhart Dozy, *Supplément aux dictionnaires arabes* (Leiden, 1881), 1:647.

<sup>100</sup> Something for repelling or thrusting (a tube containing gunpowder), possibly hand held cannons. See manuscript illustrations reproduced in Hassan, “Gunpowder Composition for Rockets and Cannon,” 270; J. R. Partington, *A History of Greek Fire and Gunpowder* (Baltimore, 1999), 206.

<sup>101</sup> “*Kitāb al-Makhzūn Jāmi’ al-Funūn*,” St. Petersburg MS No. C-686, fols. 160v–161r, quoted by Reinaud and Favé (Arabic text and French outdated translation), “Du feu grégeois, des feux de guerre...” (Paris, 1850), 64–65, and by Hassan, “Gunpowder Composition for Rockets and Cannon,” 270.

Wear a *qarqal* that has been covered with thick haired felt (*balās*)—so that his head and the sleeves will be loose-fitting. His head and fingers will have been smeared with the substance I have described to you so that he will not be burnt by the fire. A trouser covered with it will be also fashioned for him—a trouser on the fashion of the trousers with legs, [so that] the fire will not reach the feet. He will [also] smear his body. He will make iron rings (*akhrās*) in the *qarqal*, from his head to his body, as well as in the *birkastuwān* (horse armor)... If ten of these horsemen (*fursān*) charge one hundred horsemen or more, they will run away. As for the horse, it will not approach and will not face it. This is a powerful secret.<sup>102</sup>

### Conclusion: The Near East, a Military Crossroad

The example of the *qarqal* is quite instructive. It shows how medieval warriors tried to meet the technological challenge presented by the heaviness of offensive weapons already evoked. Other developments also worked towards this same goal. Thus arm, leg, and joint protections known in the Near East for a long time but seemingly abandoned between the tenth and the thirteenth centuries reappeared.<sup>103</sup> Nicolle rightly emphasizes the Mongols' influence on these developments as well as on the evolution of military tactics and fighting weapons. But this should not be understood in the strict sense that military changes were necessarily a result of Mongol impetus. The driving force behind them was the increased military activity in the Near East, which was widely assumed from the late eleventh century by new groups coming from the East as well as from the West (e.g., Turks, Kurds, Franks and Mongols), who set up a slow but definitive militarization of societies.

The moving of the population—voluntary or not, in the case of the importation of military slaves—and the increase of military activity favored cultural exchanges between the East and the West. Military experiences and technologies clearly traveled from East to West. Within this framework, the Mongols played a pivotal role as intermediaries of cultural transfer. For example, it is likely that the military machine of the Mongols played a prominent role in gunpowder dissemination from the East to the West throughout the Islamic world (as well as

<sup>102</sup> “Kitāb al-Makhzūn Jāmi‘ al-Funūn,” Paris, BNF MS Ar. 2824, fols. 79r–80r.

<sup>103</sup> About limb defenses, see also Ibn al-‘Adīm, *Bughyat al-Ṭalab fī Tārīkh Ḥalab*, ed. Suhayl Zakkār (Damascus, 1988), 5:206; Zouache, “L’armement entre Orient et Occident,” 305–6, 313–14; Muḥammad ibn ‘Īsā al-Aqṣarā‘ī, *Nihāyat al-Su‘l*, in Nicolle, “The Reality of Mamlūk Warfare: Weapons, Armour and Tactics,” 77–110.

throughout Western Europe).<sup>104</sup> But the opposite is also true: the Mongols, who were consumers of indigenous technology and so often employed local craftsmen, also transmitted the Mediterranean technology to the East—as far as China. Thus it is well known that the traction trebuchet first traveled from China to the Islamic lands before going back to China with Mongol armies in a new and more efficient form at the end of the thirteenth century, namely the counterweight trebuchet.<sup>105</sup> We should also not minimize the impact of local traditions and experiences of war or the impact of the Europeans on the Eastern way of war. In particular, this happened during the Mamluk period, when European merchants were in force in Egypt and Syria. After all, some metal pieces of the Damascus *qarqal* may have been made in an Italian maritime city.

The adoption by all the nations of medium- or heavy-armored cavalry is also quite interesting for the matter of cultural transfer. The increasing military confrontations between different traditions of war provoked the development of this cavalry even among the nations that were attached to the steppe warfare. It has been suggested that the Mongolian army arrived in the West as light cavalry and was soon strengthened by Persian influence.<sup>106</sup> What seems obvious is that the tradition of heavily-armored cavalry owed its origin to Central Asia, where the Mongols inherited it from a military tradition that had been developed by the Uighurs.<sup>107</sup> This tradition was known in the Islamic Near East for a long time, via Sassanian Iranian and late Romano-Byzantine armies. For example, the Banū Mirdās's (415–73/1024–80) success in northern Syria was due to their heavy cavalry elite trained in mounted swordsmanship which could successfully oppose the Byzantines' heavy cuirassed cavalry.<sup>108</sup> The heaviness decisively spread dur-

<sup>104</sup> Thomas T. Allsen, "The Circulation of Military Technology in the Mongolian Empire," in *Warfare in Inner Asian History (500–1800)*, ed. Nicola Di Cosmo (Leiden, 2002), 263–91, especially 271–74. However, see Joseph Needham's opinion in *Science and Civilisation in China* (Cambridge, 1986), vol. 5, pt. 7, 94–358. See also Kenneth Chase, *Firearms: A Global History to 1700* (New York, 2003), 58–61; Timothy May, *The Mongol Art of War: Chinggis Khan and the Mongol Military System* (Yardley, 2007), 141–42.

<sup>105</sup> Paul Chevedden, "The Invention of the Counterweight Trebuchet: A Study in Cultural Diffusion," *Dumbarton Oaks Papers* 54 (2000): 71–116; Stephen Turnbull and Wayne Reynolds, *Siege Weapons of the Far East (1) AD 612–1300* (Oxford, 2001), 33–37; Allsen, "The Circulation of Military Technology in the Mongolian Empire," 266–68.

<sup>106</sup> A. P. Martineze, "Some Notes on the Il-Xanid Army," *Archivum Eurasiae Medii Aevi* 6 (1986–88): 129–42, quoted by Allsen, "The Circulation of Military Technology in the Mongolian Empire," 263.

<sup>107</sup> *Late Mamlūk Military Equipment*, 27–28.

<sup>108</sup> Thierry Bianquis, "Pouvoirs à Alep aux Xe et XIe siècles," *Revue du monde musulman et de la Méditerranée* 62 (1991): 49–59; idem, "Peuplement et guerre en Syrie au Ve/XIe siècle, éléments pour l'élaboration d'un wargame," in *Castrum* 3 (Madrid, 1988): 59–66; idem, "Mirdās, Banū or Mirdāsīd," *Encyclopaedia of Islam*, 2nd ed., 7: 118–23.

ing the Crusades period, when Muslim armies were confronted by the Westerners and then by the Mongols. The powerful weapons found in the Citadel of Damascus are the heirs of a long, slow, and definitive process that allowed the Mamluk army to be one of the best military machines of its time. The Mamluks, who were the heirs of their Near Eastern predecessors, had been influenced by the Mongols and by their Western enemies. The Mamluks harmoniously combined different traditions of war. Studying their “way of war,” therefore, strongly confirms that “Western” and “non-Western way of war” are no more than rough and essentialist categories.

